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COMPOSITE AIR-TO-GROUND AND ONBOARD VOICE  
TAPE TRANSCRIPTION OF THE GT-4 MISSION (U)  
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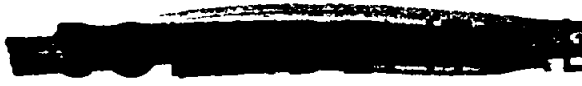
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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION  
MANNED SPACECRAFT CENTER  
HOUSTON, TEXAS

August 31, 1965



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NASA PROGRAM GEMINI WORKING PAPER No. 5035

COMPOSITE AIR-TO-GROUND AND ONBOARD VOICE  
TAPE TRANSCRIPTION OF THE GT-4 MISSION

Prepared by: Mission Training Section

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION  
MANNED SPACECRAFT CENTER  
HOUSTON, TEXAS

August 31, 1965

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CAPE KENNEDY

10, 9, 8, 7, 6, 5, 4, 3, 2, 1

CC IGNITION!

00 00 00 CC Bolts. LIFT-OFF!  
00 00 02 C Counting, we're on our way, Buddy.  
00 00 09 C Roll.  
00 00 20 CC Gemini 4, did you get your roll?  
00 00 20 C Roger. Roll complete. Pitch.  
00 00 24 CC Roger. Roll is complete. Did you get your pitch?  
00 00 26 C Pitch. Roger. Booster pressures are good, Ed.  
00 00 27 CC Roger.  
00 00 28 P Roger. Systems are all good over here.  
00 00 30 C Swell. Boy that sun is bright.  
00 00 35 P Right.  
00 00 44 CC It will be 50 seconds on mark, GT-4.  
00 00 50 CC MARK!  
00 00 51 C Mode II delayed.  
00 00 56 P Cabin is holding at 5.5.  
00 01 05 CC Okay, you're looking good here.  
00 01 13 P Cabin is hold--  
00 01 18 CC Say again, Gemini 4.  
00 01 31 CC Gemini 4. It will be 1:40 on my mark, and we are not reading you very clearly. 1:40--  
00 01 40 CC MARK!  
00 01 44 CC Gemini 4. Do you read Cape CAP COM?  
00 01 51 CC Gemini 4, Gemini 4. Do you read Cape CAP COM?



[REDACTED]

00 02 10 CC Gemini 4, Houston CAP COM.  
00 02 12 C Gemini 4 is GO for staging.  
00 02 14 CC Roger, read you loud and clear. You look okay.  
00 02 25 P Update received.  
00 02 27 CC Roger on your update.  
00 02 34 C Good staging.  
00 02 36 CC Roger. We confirm good staging.  
00 02 50 C Guidance initiated.  
00 02 52 CC Roger, guidance initiated.  
00 03 04 C The errors have come in. They're just right on null now.  
00 03 08 CC Say again, Gemini.  
00 03 10 C I say, our errors have come into a null.  
00 03 13 CC Roger.  
00 03 15 C Just like they are supposed to.  
00 03 17 CC Yes. Everything is going great.  
00 04 01 CC Gemini 4, Houston gives you a GO.  
00 04 04 C Roger. Looks great up here.  
00 04 24 CC Gemini 4, Houston gives you a GO.  
00 04 27 C Roger. We're GO.  
00 04 29 CC Roger.  
00 05 00 CC Coming up on 0.8. I'll give you a mark ( $V/V_R = 0.8$ )  
00 05 08 CC MARK! 0.8.  
00 05 10 C Mode III.  
00 05 34 C SECO.  
00 05 36 CC Roger, SECO.  
00 05 49 CC Gemini 4, you're GO.  
00 05 54 C Roger . . . .  
00 05 57 CC Gemini 4, this is Houston CAP COM. You're GO.  
Do you read?  
00 06 00 C Roger, I read you.  
00 06 18 CC Gemini 4, try your UHF-2, and give us your IVI readings as soon as you can.  
[REDACTED]



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00 06 34 CC Gemini 4, Houston CAP COM.  
00 06 36 C Hello there, Houston. Gemini 4 here, how do you read?  
00 06 39 CC I read you a little bit garbled. Give me your IVI readings.  
00 06 43 C Roger. I have 20 forward, 11 right, 2 down.  
00 06 48 CC Roger. 20 forward, 11 right, and 2 down.  
00 07 07 CC Gemini 4, are you on UHF-2 now?  
00 07 09 C ...turning around. Affirmative on UHF-2 now and ...  
00 07 12 CC Roger.  
00 07 14 C Okay. I got the old second stage. It's spinning away and looks pretty.  
00 07 18 CC Roger. You say, it's spinning away?  
00 07 21 C Roger. It's starting to tumble a little.  
00 07 23 CC Roger.  
00 07 34 CC Roger. Gemini 4, I have a new 1 alpha time for you.  
00 07 38 C Okay.  
00 07 39 CC It's 14:03.  
00 07 46 P Understand, 1 alpha 14:03.  
00 07 49 CC Roger.  
00 07 56 CC Gemini 4, your orbit is 87 by 153.  
00 08 00 C ....  
00 08 02 CC Roger.  
00 08 14 CC Hey, Jim. How fast is that booster tumbling?  
00 08 18 C I can't give you that. .... going around.  
00 08 23 CC Is it just slowly rotating?  
00 08 25 C Roger, it's slowly rotating.  
00 08 27 CC Roger, okay.  
00 08 28 C It doesn't look big.  
00 09 00 CC We'll lose you in about 30 seconds, Jim.  
00 09 02 C Okay.  
00 09 05 CC How do you like that?

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00 09 15 C Before I leave you, let me tell you the lights are working.

00 09 18 CC The what's working?

00 09 20 C The lights on the booster are flashing.

00 09 22 CC Okay.

00 09 24 C ... lot better off.

00 11 08 P Okay, 2-C is 24, 6; 2-B is 24, 5.5; 2-A is 24, 6; 1-C is 24, 12; 1-B is 24, 11; 1-A is 24, 7. Control is 26, 5; S-2 is 27; S-1 is 27; Main is 23.

CANARY ISLANDS

00 14 22 CC Gemini 4, Canary CAP COM.

00 14 23 C Hello, Canary. Gemini 4.

00 14 25 CC Roger. Give me your quantity switch to READ for 15 seconds.

00 14 36 CC Your status green from here.

00 14 37 C Roger, thank you.

00 14 44 CC Stand by to copy G.m.t., LO, apogee, and perigee.

00 14 49 C Roger.

00 14 50 CC 15 15 59. 152 by 87.

00 14 58 C 152 by 87. Roger.

00 15 00 CC Roger. Standing by for your air to ground check.

00 15 04 C Roger. We're on UHF-2 at this time. Give you a count 1, 2, 3, 4, 5. ... HF antenna at this time.

00 15 12 CC Say it again. Which antenna?

00 15 14 C We are not going to extend the HF antenna.

00 15 17 CC Roger, we understand. Shift to UHF number 1, and give me a count, please.

00 15 35 CC Gemini 4, Canary CAP COM. Shift to UHF number 1 and give me a count, please.

00 15 42 P Gemini 4, am transmitting UHF number 1. 1, 2, 3, 4, 5. 5, 4, 3, 2, 1, Gemini 1.

00 15 49 CC Roger, Canary CAP COM. Read you loud and moderate background noise.

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00 15 53 C Roger, I understand.

00 16 00 CC Gemini 4, Canary CAP COM. Be advised switch radiator to FLOW at 40:00.

00 16 06 P Roger, radiator to FLOW at 40:00.

00 16 48 CC Gemini, Canary. Stand by to copy new 3-1 data.

00 16 51 P Roger. Standing by.

00 16 53 CC 167. 3+35. 16 48 34. 2+18. 8+47.

00 17 08 CC GETRC 01 32 35.

00 17 22 P Roger, Gemini 4. Would say again the first three quantities, please?

00 17 25 CC Roger. I say again. ΔV 167. 3+35. GETRC 01 32 35. Read switch OFF, please.

00 17 46 P Roger. New quantities 3-1: 167. 3+35. 14 48 34. 2+18. 8+47. 01 32 35.

00 18 03 CC Negative. GMTRC is 16 48 34.

00 18 12 P Roger, 16 48 34.

00 18 15 CC Roger. How far are you from the launch vehicle?

00 18 19 P Roger. Right now we're alining the platform and it's going below our lower left, and we'll be going down after it in a moment. We're after it right now.

00 18 27 P We presently don't have it in sight; we aline the platform.

00 18 31 C I have it sighted this time. It's directly below me about 400 or 500 feet. I'm going to thrust down ....

00 18 37 P Roger. We have it below us right now, exactly below us at about 400 to 500 feet. The light is coming through quite clearly.

00 18 44 CC Roger.

00 18 48 P We're passing over a big desert now.

00 18 59 CC Canary, Gemini 4. Be advised there isn't enough time to get a good platform aline there. I don't want this thing to get too far from me.

00 19 09 CC Roger, I understand.

00 24 11 CC Gemini 4, Houston CAP COM.

00 31 09 CC Gemini 4, Houston CAP COM standing by.

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00 31 21 CC Gemini 4, Houston CAP COM standing by.  
 00 31 45 CC Gemini 4, Houston CAP COM standing by.  
 00 32 04 CC Gemini 4, Houston CAP COM.  
 00 32 59 CC Gemini 4, Houston CAP COM.  
 00 41 54 P Radiator is going to FLOW at 41. Elapsed time of 41.

CARNARVON

00 43 41 CC Gemini 4, Carnarvon CAP COM.  
 00 43 42 C Hello, Carnarvon. Gemini 4.  
 00 43 44 CC Roger. Give me your status.  
 00 43 45 C Roger, we're GO. Everything looks great.  
 00 43 49 CC Roger, Gemini 4. You look good here on the ground. Can you give me your battery readouts, please?  
 00 43 53 P Roger, stand by. Here they come.  
 00 44 20 CC Gemini 4, you can turn your radiator, --correction, your secondary pump off. Your evaporators are normal. Your radiator looks good.  
 00 44 27 P Roger. Evaporators NORMAL, and secondary pump A OFF. Understand radiator looks good.  
 00 44 33 CC Okay. Give me about 10 seconds on your Quantity Read Switch.  
 00 44 37 P Roger. Coming on.  
 00 44 39 CC Roger.  
 00 44 50 CC I'm standing by for your battery readouts.  
 00 44 59 CC While you're doing that, can the Command Pilot give me a little information on the booster, the distance, what you have to do to get that close to see it, and how's the light working?  
 00 45 07 C Roger. The light's working fine. I can't tell exactly how far it is though, I guess I'm probably a half a mile or so. The booster started tumbling right after we came off of it. I tried to dump the rates down, and I got them down till it looked like one-quarter degree per second but as soon as we got off I got around to see it, it was tumbling.

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00 45 25 CC Okay. How much  $\Delta V$  did you use before you got there?

00 45 28 C I got about 30 ft/sec showing on my window there.

00 45 32 CC Okay.

00 45 34 C The booster fell away quite rapidly and got below us like there was a considerable difference in our velocity, and I let the thing get too far from me.

00 45 44 CC All right. Can you give me the battery readout? If they look good I can give you a GO for 3-4. .... and we're standing by for a blood pressure from the Pilot.

00 46 40 C Carnarvon, this is Gemini 4. I see lights of a town below me.

00 46 44 CC Okay. 3,2,1.

00 46 48 CC MARK!

00 46 52 CC Did you get that time hack?

00 46 55 P Roger, got that time hack, and am standing by for the  $\Delta V$  up.

00 46 58 CC Go ahead.

00 46 59 P Roger. 1. 1-A and 2-B are 24, and they all look good.

00 47 03 CC Roger.

00 47 04 P ... 1-A is 6. 1-B is 10. 1-C is 11. 2-A is 6. 6-B is 5, and 2-6 is 6.

00 47 13 CC Okay. Showing 24 on 2-A, B and C also?

00 47 16 P Roger. I'm getting 24 on all my adapter batteries.

00 47 19 CC Okay. Your readings are good.

00 47 22 P ... All checks out good.

00 47 23 CC Okay. Giving you a GO for 3-4, changing your TR time.

00 47 32 CC And I'm giving you a new load.

00 47 35 P We got the update coming in.

00 47 37 CC Okay, I've got the load ready, you got the new TR time. We're standing by for that Pilot's blood pressure. You ready to copy your update time?

00 47 42 P Roger, I copy the update time, ... the blood pressure.

00 47 47 CC Okay. 2-1. 170. 3+40. 01 32 39. 2+18. 8+32. Over.

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00 47 54 P Roger. We're coming up on the booster now, and you can see the daylight starting to break. The lights are quite visible, and I estimate that we're probably in the vicinity of three-quarters of a mile from the booster at the time now. The lights are very easy to see, and the horizon is quite easily defined at this time. We've unstowed the Contarex, the Hasselblad, the 16-mm and the blood pressure cuff. We're both finding that there is not as much velcro as we'd like to have in the spacecraft. We feel like we need more storage of loose items. Same thing that John and Gus found.

00 48 10 P Roger. Say again the first four quantities, please.

00 48 13 CC I say, what you want repeated?

00 48 15 P Roger, the first four quantities.

00 48 17 CC 2-1: 170. 3+40. 01 32 39. Over.

00 48 36 P Roger. Would you say them with a little more pause between them, please.

00 48 39 CC Does he want to try them again?

00 48 41 P Would you say them with more pause between the, ...  
I ...

00 48 45 CC 2-1: 170. 3+40. 01 32 39. 2+18. 8+32. Over.

00 49 01 C This is Jim here. And I'm having a lot of difficulty telling how far out I am from the booster. I can see the two lights flash occasionally, and that's the only thing that tells me where I am at all - as far as distance with respect to the booster. I didn't get the time to aline my platform well before I went into ...

00 49 12 P Roger. Understand, I read you. 1: 170. 3+40. 01 32 34, 2+18. 8+30.

00 49 24 CC On your GETRC that's 01 32 39. Over. 9.

00 49 25 C Hello, Carnarvon. Gemini 4.

00 49 30 P 01 32 39.

00 49 30 C Roger. We're GO. Everything looks great.

00 49 32 CC Roger, that's affirmative. Your orbit is about 86.8 by 150.6.

00 49 37 C Roger. Stand by. They're coming.

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[REDACTED]

00 49 38 P Roger. 86.8 by 150.6. Sounds good.

00 49 42 CC Roger. We need that blood pressure on the Pilot.

00 49 44 P Roger, that will be coming up next.

00 49 55 C I'm going to ... a little bit more ...

00 49 45 CC And I'll need your accelerometer bias.

00 49 50 P You'll have to stand by for the accelerometer bias.

00 49 52 P Hand me the ... book, will you, Jim?

00 49 54 C The data book.

00 49 55 P Yes. I just can't keep the booster in sight and ...

00 49 58 CC Okay. You can give it to Guaymas.

00 50 00 C I'm afraid you'll have to wait for another orbit or two.

00 50 01 CC All righty.

00 50 06 C Your light is on in case you're going to read it.

00 50 07 C Huh?

00 50 08 C Your lights are on.

00 50 09 P Yes.

00 50 18 C Roger. Evaporator NORMAL and Secondary Pump A OFF. Understand everything looks good.

00 50 28 C Roger. Coming ON.

00 50 29 CC .....

00 50 37 P Blood pressure is coming in.

00 50 39 CC Roger.

00 50 52 P Roger.

00 51 01 P Why don't you do that, Jim?

00 51 02 C Roger. The light's working fine. I can't tell exactly how far up I am from it. I guess I am probably around a half a mile or so. The booster started tumbling as we came off of it. I started to damp the rates down, and I got them down to what looked like a quarter degree per second, but as soon as we came off and I got around to see it, it was tumbling.

00 51 22 CC .....

[REDACTED]

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00 51 25 C I've got about 30 ft/sec showing on my windows here. The booster fell away quite rapidly and got below us like there was a considerable difference in our velocities, and I've been struggling here to not let the thing get too far from me.

00 51 45 CC .....

00 52 06 P Roger. Your adapter battery readouts are coming at you. They all are reading 24, 1-A through 1-C on voltage. The amperes are 6 on 1-A, 10 on 1-B, 11 on 1-C, 6 on 2-A, 5 on 2-B, 6 on 2-C. The RCS rings look good.

00 52 28 CC .....

00 52 36 P Roger.

00 52 48 C Carnarvon, this is Gemini 4. I'm seeing the lights of the town below me.

00 52 53 CC .....

00 53 00 CC MARK!

00 53 01 P Roger. Got your time hack.

00 58 56 P We had a ring in one of our books come loose. It looks like that would be pretty bad if they all got loose - if they all came out of the card.

00 59 08 P My fingertip lights are right on my first knuckle and it is making a sore spot on my center right finger.

01 10 38 CC Gemini 4, Houston CAP COM standing by.

01 10 51 CC Gemini 4, Houston CAP COM.

01 11 06 CC Gemini 4, Houston CAP COM.

01 11 14 C Go ahead, Houston, Gemini 4.

01 11 16 CC Roger, Gemini 4. Houston CAP COM standing by. I read you slightly garbled.

01 11 22 C This is Gemini 4, Houston.  
.....

01 11 27 CC Standing by.

01 14 25 P It has a pretty good tumble rate. I'll try to time it here.

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01 14 37 P Makes about one complete revolution in about 8 seconds. It's tumbling end over end. It looks like now we're out a little further than we were before. We've slipped out a little bit. I'd estimate it's out about a mile and a half or maybe a little more. It was really quite a view when we first saw it down there. It looked like almost one of the artist's conceptions. It was so vividly clear.

01 20 58 P Right now, we're in nose-to-the-ground type attitude, such that I don't believe the ground stations are able to read us. We have heard several calls cut in and out for us. We're going to stay in this attitude though for a while to keep the booster in sight. It doesn't appear that we're making too much progress in closing with the booster right now. It looks like it's staying out about the same distance as it was before. During the night sight when the booster was below us, it appeared that there was almost a sky full of stars. There was so much of the venting coming off the booster and into the sky. In fact, I commented on it that they looked like they were stars. When you look closely at the booster at that time, you could see the fuel -- actually the white vapors coming out of the aft end of the booster, and I guess that was spreading the little fireflies all around. It was to such an extent though, it covered the whole visible area in front of us.

GUAYMAS

01 27 57 P Hello, Guaymas. This is Gemini 4.

01 27 59 CC Gemini 4, Guaymas CAP COM.

01 28 00 P Roger, Guaymas. We still have the booster. We're out quite a ways from it now, and it's taking a little more fuel than we had anticipated. We've got 61 in the fore and aft window in the aft direction, 37 left and 36 up at the present time. We appear right now to be just about holding our own with it. Of course, we should as we progress here. We should start to close with it, but it's out further than we had hoped to let it get right now.

01 28 24 CC Roger, I copy.

01 28 25 C Is there any way of giving me a quick check on what my orbit is? This thing is way below me.

[REDACTED]

01 28 31 CC Say again.

01 28 32 C I said the booster is way below me. Could you tell me my present orbit? As soon as possible.

01 28 43 CC Roger, we're working on it.

01 28 50 CC Gemini 4, we'll update you with the orbit calculations some time after the pass over the States.

01 28 56 P Roger, I understand. And be advised our cabin pressure seems to be holding just a hair below 5. It stabilized down initially at 5.5, decreased to 5.25, and then went back up to 5.5, and it's now down a little below 5.

01 29 15 CC Roger. We copy.

01 29 16 P All right, you might get a confirmation for me on that on the ground.

01 29 18 CC Roger. We're working on it. Put your Quantity Read Switch to READ.

01 29 23 P Roger. It's going to READ.

01 29 34 C Guaymas, this is Gemini 4. We're going to have to get a resolution right away whether you want me to really make a major effort to close this last thing or to save fuel.

01 29 44 C Guaymas, do you read Gemini 4?

01 29 46 CC Roger, we copy. We suggest you stand by. We want to save the fuel.

01 29 51 C Okay. I guess it probably expended about 100 ft/sec.

01 29 56 CC You expended 100 ft/sec?

01 30 01 C Yes, that's just a rough guess.

01 30 02 CC Roger. We're finished with the Quantity Read, Gemini 4.

01 30 12 C Roger.

01 30 15 CC Place the Quantity Read Switch to --

01 30 16 C It's off.

01 30 51 CC Gemini 4, Guaymas CAP COM. Flight advises they like to save the fuel. You'll be advised over the Cape.

01 31 01 C Well, I just can't wait till I get to the Cape. I guess we're just going to have to watch it go away. I've retrograded enough to help bring me down but I don't want to get down to wherever it's going.

[REDACTED]

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01 31 11 CC Roger.

01 31 13 CC Okay. I guess we'll scrub it.

01 31 16 C Okay. Can you give me a tag on my orbit as quick as you can?

01 31 18 CC We're working on it.

01 33 00 CC Gemini 4, Houston CAP COM.

01 33 02 C Go ahead Houston, Gemini 4.

01 33 04 CC Jim, we've estimated you've used about 50 percent of your OAMS capability at this time.

01 33 10 C Roger. I think we ought to knock it off, Gus. It keeps falling, it's probably three or four miles away, and we just can't close on it.

01 33 16 CC Right, knock off. No more rendezvous with the booster.

01 33 20 C Okay. Roger.

01 33 22 CC Okay. We're giving you a GO for your EVA at this time.

01 33 25 C Okay. I would like to know what kind of an orbit I'm in now.

01 33 30 CC We're working on it, but you may not get it until we get to Canary.

01 33 34 C Okay.

01 33 36 CC Okay. I want to give you your 3-1, 3-4, 4-4 times so tell me when you're ready to copy.

01 33 44 C Stand by 1.

01 33 45 CC Roger.

01 33 48 C Okay. Be advised I'm going to let the booster go and not track it anymore. I'm going to align the platform and start conserving fuel.

01 34 01 P Go ahead. This is Gemini 4.

01 34 05 P Gemini 4 is ready to copy.

01 34 30 CC Gemini 4, Houston.

01 34 35 P Go ahead Houston. Gemini 4 is ready to copy.

01 34 37 CC Roger. 3-1: 171. 3+42. 18 19 03. 2+23. 8+42. Do you want to read those back to me?

01 35 01 P Roger. 3-1: 171. 3+42. 18 19 03. 2+23. 8+42.

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[REDACTED]

01 35 10 CC Roger. 3-4. Tell me when you're ready.

01 35 16 P Ready to go. Just keep shooting.

01 35 18 CC 120. 2+36. 19+34. 3+41. 9+47.

01 35 33 P Roger. 3-4 is 120. 2+36. 19 34 39. 3+41. 8+47.

01 35 42 CC Roger. 4-4: 134. 2+55. 21 08 03. 2+47. 8+30.

01 36 00 P Roger. 4-4 is 134. 2+55. 21 08 09. 2+46. 8+30.

01 36 09 CC Negative on the GMTRC. That is 21 08 03.

01 36 17 P Roger. 21 08 03.

01 36 20 CC Roger. All the rest is correct.

01 36 23 CC I have your onboard map update.

01 36 27 P Roger.

01 36 30 CC Ascending node 157 West. G.m.t. of ascending node is 16:34.

01 36 41 P Roger, I understand. Ascending node 157 West; G.m.t. 16:34.

01 36 47 CC Roger. Could you give me some idea of what your attitudes were over Carnarvon and Canton?

01 36 52 P Roger. We were nose-down tracking the booster and I'm afraid that our attitudes were not so that we could read with good reception on those stations.

01 37 05 CC Roger.

01 37 06 P They read us to some extent. Did they get the blood pressure?

01 37 11 CC They didn't get a very good one, but you're going to give another one around here some place, aren't you?

01 37 15 P Roger. Be advised the gun is out and stowed and assembled and we've got out cameras and we'll be going after the equipment.

01 37 22 CC Roger.

BERMUDA

01 38 15 CC Gemini 4, Houston.

01 38 17 C Go ahead Houston, Gemini 4.

01 38 20 CC Would you go to PRELAUNCH on your computer. You might give me your IVI readouts before you do.

[REDACTED]

01 38 24 C Roger. They were 20 aft and 76 up.

01 38 31 CC Roger. Are you in PRELAUNCH now?

01 38 32 C Roger. In PRELAUNCH now.

01 38 39 C I'm alining the platform.

01 38 40 CC Roger.

01 39 10 CC Gemini, we estimate you still have about 200 feet  $\Delta V$  left.

01 39 16 C Roger. That's what I've got.

01 39 17 CC Roger.

01 39 27 C CAP COM. Can you give us a G.m.t. time hack? I missed it before.

01 39 33 CC Roger. I'll give you a G.m.t. at 16 56 00.

01 39 38 P Roger.

01 39 55 P CAP COM. I'd like a hack at 16 56 .

01 40 01 CC Roger. It will be 3 more seconds.

01 40 05 CC MARK!

01 40 07 CC That was 16 56 04.

01 40 10 P Roger.

01 40 11 CC We have a new hack on your orbit. It's 89.5 over 158.6.

01 40 19 C Roger.

01 40 58 CC Can you go to READ momentarily?

01 41 01 C We're READ. Roger.

01 41 03 CC Roger.

01 42 15 C Houston CAP COM, Gemini 4.

01 42 18 CC Gemini 4, go ahead.

01 42 20 C Roger. Do you want me to keep my platform and computer up?

01 42 26 CC Turn off your READ switch now if you're reading.

01 42 30 C Okay. I understand you got the reading. Would you advise me on the computer and IMU?

01 42 38 C I see no reason for it.

01 42 41 CC Keep your platform powered up, Jimmy boy.

01 42 43 C Okay.

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01 42 58 CC Hey, Jim. We estimate you have 207 left in your OAMS.

01 43 02 C Roger.

01 43 07 CC Okay. We'd like to have - are you still reading?

01 43 10 C Roger. Still reading you.

01 43 11 CC We'd like to get a blood pressure on Ed over the Canaries.

01 43 15 C He's unstowing stuff right now so you may have to wait a second.

01 43 20 CC Okay. We want it over the Canaries. You got a little time yet.

01 43 26 C Roger. We'll be over there at 1:49, right?

01 43 39 CC Might be there a little sooner than that, I think.

01 43 41 C Okay.

01 43 47 C What was my G.m.t. at lift-off, CAP COM?

01 43 53 CC G.m.t. at lift-off was 15 15 59.

01 43 59 C Roger.

01 44 03 CC Have you checked your cabin seal?

01 44 11 C Roger. Our cabin is holding at about 4.9. What else do you want to check?

01 44 17 CC Check your water seal.

01 44 19 C Water seal. Roger.

CANARY ISLANDS

01 49 26 CC Gemini 4, Canary CAP COM.

01 49 28 C Go ahead Canary, Gemini 4.

01 49 30 CC Give me your Read Switch ON - correction, your Quantity Switch to READ for 10 seconds.

01 49 35 C Quantity Switch is in READ.

01 49 37 CC Roger. We have your secondary Pump B on. Have you turned it on?

01 49 44 C Roger. We have. Ed's trying to get the stuff out .... It's coming off.

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01 50 03 CC Inflate the - - have the Pilot inflate his blood pressure cuff.

01 50 10 C Can you stand by one, please.

01 50 13 CC Roger.

01 50 29 CC Cryo gage switch OFF.

01 50 33 C It's OFF.

01 50 41 CC Flight advises if you're too busy we'll disregard the blood pressure.

01 50 45 C I wish you would.

01 51 50 CC Gemini 4, Canary CAP COM. Request you turn your computer OFF, leave the platform powered up.

01 51 56 C Roger ... computer's OFF at this time.

01 53 36 CC Gemini 4, Canary CAP COM. Is your water seal OPEN?

01 53 42 C Gemini 4. Negative. Our water seal is not OPEN.

01 53 44 CC Roger.

01 54 03 CC Gemini 4, Canary CAP COM. Your Water Seal Valve is to be OPEN when you start your pressurization and repress.

01 54 15 C You want the Water Seal Valve OPEN when we start the pressurization. Is that correct?

01 54 20 CC Roger. When you start pressurization and the repress.

01 54 24 C Roger.

01 54 32 C Be advised we got the cable out.

01 54 34 CC Say again.

01 54 36 C We just got the cable out!

01 54 42 P It was a wrestling match, but I won.

01 56 05 P Be advised that White had his left glove off for stowage purposes. I've had it off for approximately 15 minutes. This is the standard face-plate OPEN position.

KANO

01 57 28 C Go ahead, Kano.

01 57 31 C Kano, Gemini 4 here. Go ahead.

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01 57 36 CC Gemini 4, this is Houston CAP COM.  
01 57 39 C Kano, Gemini 4.  
01 57 41 CC Gemini 4, Houston CAP COM.  
01 57 44 CC Gemini 4, this is Kano.  
01 57 46 C Roger, Kano, Gemini 4. I read you loud and clear.  
How me?  
01 57 53 CC Gemini 4, how do you read Houston?  
01 57 56 C I read -- I read Houston loud and clear.  
01 58 10 C Houston, Gemini 4. How do you read me?  
01 58 12 CC Gemini 4, Houston CAP COM. Over.  
01 58 42 CC Gemini 4, Houston CAP COM. Over.  
01 58 49 CC Gemini 4, Houston CAP COM. Over.  
01 58 59 CC Gemini 4, Houston CAP COM. Over.  
01 59 17 CC Gemini 4, Houston CAP COM. Over  
01 59 28 CC Gemini 4, Houston CAP COM. Over.  
01 59 41 CC Gemini 4, Houston CAP COM. Over.  
01 59 56 CC Gemini 4, Houston CAP COM. Over.  
01 59 58 C .... Houston, Gemini 4. How do you read?  
02 00 00 CC I read you loud and clear, Jim. For your attitudes  
for EVA go ahead with the same attitudes you had  
planned. That's BEF and 180° in roll. That should  
be the best for photographic purposes.  
02 00 14 C Roger.  
02 00 16 CC And to get pictures of the spacecraft, your best bet  
would be to move out forward.  
02 00 22 C Say again.  
02 00 24 CC Your best sun angle for getting a picture of the  
spacecraft would be to move out forward from the  
spacecraft.  
02 00 30 C Roger. He'll move out forward and we'll be BEF up-  
side down.  
02 00 34 CC Roger.  
02 00 40 C Boy, is it crowded in here, Gus.  
02 00 42 CC I'll bet.  
02 00 54 CC Hey, Jim.

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[REDACTED]

02 00 59 CC Jim, this is Houston.

02 01 05 CC Gemini 4, Houston.

02 01 31 CC Gemini 4, this is Houston.

02 01 47 CC Gemini 4, this is Houston.

02 01 50 C Go ahead, Houston. This is Gemini 4.

02 01 54 CC Hey, Jim. You don't have to go upside down if you don't want to. You can go to whatever position is best for you.

02 02 02 CC We have no constraint on your attitude.

02 02 18 CC Gemini 4, Houston.

02 03 45 P At this time we are passing over quite a series of thunderstorm cells, off at our ... Can you see it out there? ... it should be about your 1 o'clock .....

02 04 37 C No, I can't see it. Maybe .....

02 04 46 P Oh, those must be fireflies again! Are you in the light over there?

02 04 50 C Yes, I'm in the light.

02 04 51 P How does that happen? I'm in night over here.

02 04 55 C We're going sideways.

02 04 57 C Actually, we're going around to blunt-end-forward.

02 05 00 P All right. A very interesting thing - Jim's got full daylight out his window, and I have full night out of mine. We're gradually yawing around to blunt-end-forward, and it looks like the reflection of the sun on these fireflies causes them to glow very brightly. That was the type of stars that we saw on our first dark side.

02 05 29 P It seems very strange for me to look out Jim's side and see daylight and look out my side and it's just pitch black.

02 07 59 P We've got an object out in front of us. It's not flashing like it's the booster. It appears that it's that type of an object unless it's picking up some glow from the sun. It appears a very bright, bright object.

[REDACTED]

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02 08 30 P We still have the booster at ... it was the booster. I can see the lights flashing on it now. It's just passing on the horizon. Just as it goes to darkness, the reflection of the sun on the booster causes a very bright image. That's the object I had seen earlier. It seems like we're still in fair close proximity of the booster. It looks like it's out in the neighborhood of 2 or 3 miles.

CARNARVON

02 24 22 CC Gemini 4, Carnarvon CAP COM.

02 24 24 C Go ahead, Carnarvon. Gemini 4.

02 24 26 CC Roger. Will you give me a - - correction, will you start pumping up your blood pressure. I don't have any T/M as yet. Are you in real time in that position?

02 24 34 C Stand by.

02 24 38 C Negative. We're in COMMAND. Let me give you a real-time hack position.

02 24 42 CC Roger.

02 24 47 C Ed is off the comm. right now. He's trying to get his umbilical hooked up.

02 24 50 CC Okay. We need a blood pressure immediately from the Command Pilot.

02 24 57 C Well, stand by one. Listen, you might advise Flight by way of land lines that we're running late on this thing. There's a lot to do and we're having trouble keeping track of all this stuff.

02 25 09 CC Okay.

02 25 12 C I'll get the blood pressure as soon as I can get around to it.

02 25 33 CC Give me the switch position on your C-band beacon.

02 25 37 C Roger. It's COMMAND.

02 25 40 C Do you want it back on CONTINUOUS?

02 25 42 CC Affirmative. Back on CONTINUOUS.

02 25 45 C Do you want them both on or just the reentry one?

02 25 48 C Just the capsule.

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02 25 51 C Okay. The adapters on. As soon as I get the blood pressure I'll give you a call.

02 25 56 CC Okay.

02 26 35 CC Full-scale on your blood pressure.

02 26 48 CC Can give the Quantity Read Switch for about 10 seconds?

02 26 50 C Roger. I don't think you got a good blood pressure. The bulb popped off.

02 26 53 CC Okay.

02 27 10 CC Gemini 4, you are GO for EVA and decompression. Disregard the blood pressure unless you've got a few minutes and then try and get it for us. We'd appreciate it.

02 27 17 C We don't have any time at all!! We're really pressed here!

02 27 21 CC Okay.

02 27 29 CC Okay. After your first repressurization when you're about 12 to 15 minutes, we want you to go to BYPASS and return to FLOW after you repressurize again.

02 27 37 C All right. You want us to go to BYPASS before we go to repressurize. Right?

02 27 41 CC That'll be after your first repressurization.

02 27 45 C Say again.

02 27 47 CC Okay. Between your first and second repressurization, in that wait period, we want you to put your radiator to BYPASS and then to FLOW after you repressurize the second time.

02 27 55 C Roger.

02 28 28 CC Okay. We're done with your Quantity Read.

02 28 30 C Roger.

02 28 44 CC Okay. We're not going to say anything to you on the ground. If you need anything we'll wait.

02 28 46 C Okay. Listen, has Houston been advised yet that we're running a little late and we might not be ready at Hawaii.

02 28 55 CC Okay.

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02 29 09 CC Okay. Houston advised that if you are unable to make it, take your evaluation and we'll pick it up on the next pass.

02 29 16 C Roger. Understand that.

02 29 18 CC All right.

02 29 21 C That's what we want to get clear.

02 29 23 CC Roger.

02 29 37 CC Okay. You don't have to acknowledge this - you're in a 89.2 by 155 orbit and it's a 4.8 day lifetime.

02 29 41 C Roger.

02 29 52 CC Turn your Right Secondary O<sub>2</sub> OPEN, your Left Secondary O<sub>2</sub> CLOSED.

02 30 07 CC Houston advises you can use any attitude you want for the Extravehicular Activity.

02 33 52 P There was no velcro put on the outdoor 16-mm camera. We sure could have used it.

02 44 21 CC Gemini 4, Houston CAP COM.

02 44 34 CC Gemini 4, Houston CAP COM.

02 44 43 CC Gemini 4, Houston CAP COM.

02 44 53 CC Gemini 4, Houston CAP COM.

02 45 10 CC Gemini 4, Houston CAP COM.

02 45 19 CC Gemini 4, Houston CAP COM.

02 45 35 CC Gemini 4, Houston CAP COM.

02 45 43 CC Gemini 4, Houston CAP COM.

02 46 00 CC Gemini 4, Houston CAP COM.

02 46 16 CC Gemini 4, this is Canton COM TECH. Do you read?

02 46 33 CC Gemini 4, this is Canton COM TECH. Do you read?

02 46 39 P Go ahead, Canton. Gemini 4.

02 46 41 CC Gemini 4, this is Canton. Stand by for Houston.

02 46 46 CC Gemini 4, Houston CAP COM. Do you read?

02 47 10 CC Gemini 4, this is Canton COM TECH.

02 47 17 P Gemini 4, go ahead.

02 47 19 CC Roger. Houston asks your status and asks if there's any change in your Flight Plan.

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02 47 23 P There is no change and we're GO on EVA. We have the ... cameras, the gun, all the equipment assembled, we're completing the final suit ... checks, and I believe we'll be ready to go.

02 47 37 CC Roger.

02 50 28 CC Gemini 4, Hawaii CAP COM.

02 50 36 CC Gemini 4, Hawaii CAP COM. Do you copy?

02 50 38 C Roger, Hawaii. Gemini 4. I'm reading you loud and clear.

02 50 40 CC Roger. What is your status?

02 50 42 C Stand by 1.

HAWAII

02 50 52 C Hawaii, Gemini 4.

02 50 53 CC Go ahead, Gemini 4.

02 50 54 C Next pass around. I don't think we want to try it.

02 50 56 CC Roger. Understand - next pass around.

02 51 02 CC Roger. Gemini 4. We're happy with that.

02 51 33 CC Gemini 4, Hawaii CAP COM.

02 51 36 C Stand by one.

02 51 39 C Okay, go ahead Hawaii.

02 51 41 CC Roger. Flight advises go back on normal suit circuit until next rev. Then go back over Carnarvon.

02 51 50 C Roger. That's what we're doing right now. We just couldn't quite hack it.

02 51 52 CC Roger. Understand.

02 53 47 CC Gemini 4, Hawaii CAP COM. Standing by.

02 53 50 C Roger. We're getting back into sort of a semi-normal configuration here. Anything you need?

02 53 57 CC We have nothing for you. I will check with Houston.

02 54 00 C Roger.

02 54 23 CC Gemini 4, Hawaii.

02 54 25 C Go Hawaii, Gemini 4.

[REDACTED]

02 54 26 CC Be advised you'll probably bring up your computer over Texas and they will give you a 4-4 load.

02 54 33 C Okay. Very good.

02 54 35 CC That's all we have for you.

02 54 37 C Thank you. We'll talk to you in about an hour and a half.

02 54 41 CC Roger. Hawaii out.

02 57 05 C Jim McDivitt. Right now it's about T+3 hours. When we came off the booster at SECO, we had rates of around half a degree a second. I tried to damp them out and finally came off around SECO + 30 seconds. It seemed that as we came off we might have come off with some other rates. What do you think, Ed?

02 57 36 P Yes, we did. I wasn't watching as we came off, but it felt like we did come off.

02 57 41 C Yes, at spacecraft separation. It seems to me we came off with some rates, the direction of which I couldn't really tell, but ...

02 57 48 P Felt like we went this way to me.

02 57 51 C Yes.

02 57 52 P We didn't get a linear type forward separation.

02 57 56 C Yes.

02 57 58 C As we got turned around, we came right on around, and found ourselves about 300 or 400 feet from the booster. I guess that was about right, wouldn't you say?

02 58 08 P Yes.

02 58 10 C I thrust toward the booster about 5 ft/sec. My separation burn was around the neighborhood of 6 or 7 seconds. I thrust at the booster for about 5 or 6 ft/sec and then watched it as we were separating from it. I thrust about another 3 ft/sec. Looked like we started closing - we started closing from off to the side and at about 600 to 700 feet, I guess. If you think any of these numbers are wrong just call out.

02 59 50 P No.

[REDACTED]

02 59 53 C And then it looked like all apparent motion had stopped and we were probably closing. So I turned the spacecraft around and made an attempt to aline the platform. In the meantime, the booster started dropping down below us at a rather obvious rate. So I gave up trying to aline the platform to line up and thrust down toward the booster, and I retro-fired slightly to slow down with it. Once again, it looked like our rates were stopped. But by now we had drifted out to about 1000 feet or so. We then tracked the booster across Africa pointing down at it all the way. We got in to sunset pretty quick and at sunset I guess we were at about 1200 feet, Ed?

02 59 59 CC Gemini 4, Houston CAP COM.

03 00 00 P Yes, we were in fairly close.

03 00 02 C We were at 1200 feet and closing slightly.

03 00 09 CC Gemini 4, Houston CAP COM.

03 00 09 P I'll get them.

03 00 10 C Go ahead, Houston. Gemini 4.

03 00 15 C As we went into nighttime we were .....

03 00 17 C Go ahead, Houston. Gemini 4.

03 00 19 CC Roger. Jim, you're going to be live as you make your pass across the States this time.

(Watch Timed)

03 00 24 C Okay. Anything in particular you wanted me to say?

03 00 31 CC Suit yourself.

03 00 33 C Okay.

03 00 39 CC Hey, Jim. Could you give me an idea of how much you - what was the ratio of your thruster use, how much you used your aft firing, and how much you used your forward firing thrusters back early in the Flight Plan?

03 00 50 C Yes. I'll give you percentage. I used the top thrusters down for about 10 or 15 seconds, I guess. I used the aft firing ones almost the entire time aside from that.

03 01 13 CC Roger. I copy. Ten or 15 seconds on the down, almost all the rest of it on the aft.

[REDACTED]

03 01 18 C Eight or 10 seconds on the forward firing ones, but that's about all.

03 01 21 CC Roger.

(End of Watch Timing)

03 01 29 C I might add that we have seen the booster. It continues to circle around with us, but it's just too far off to go get.

03 01 33 CC Roger. Hey, would you check your ACQ aid circuit breaker and make sure it's ON.

03 01 37 C Make sure that it's OFF?

03 01 38 CC It's ON.

03 01 41 C Okay. It's OFF at this time. It's coming back ON.

03 01 44 CC Okay. It's coming ON.

03 01 47 C Negative. It's coming ON.

03 01 49 CC Roger. ON.

03 01 51 C Righto.

03 02 09 CC Hey, Jim, you do have your computer ON, don't you?

03 02 13 C Negative. I don't have it ON. Do you want it ON at this time?

03 02 15 CC Roger. Turn it ON. We're going to give you a 4-4 time.

03 02 18 C Okay. I thought we were going to get it later. I'll turn it ON at this time.

03 02 23 CC At PRELAUNCH Mode.

03 02 26 C Roger. PRELAUNCH.

03 02 43 CC Computer light is on. We're ready.

03 02 46 CC Say again, Jim.

03 02 47 C I say, my computer light is on. We're ready.

03 02 49 CC Roger.

03 03 04 CC I think you did a smart thing back there.

03 03 08 C Yes, Gus. It would have been a short flight if we'd kept chasing that mother around.

03 03 12 CC Yes. Sounds like you've been awfully busy the first couple of orbits, you know.

[REDACTED]



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- 03 03 17 C It would have been impossible. We would never have done the EVA at all.
- 03 03 29 C We're finally getting a change to look out here, Gus, and it's really nice.
- 03 04 16 CC Hey, Jim. Jim, this is Houston. Hey, Gemini 4, Houston CAP COM.
- 03 04 24 C Go ahead, Houston. Gemini 4.
- 03 04 26 CC How about describing the way the cockpit is laid out now, with all of your gear out?
- 03 04 35 C Okay. Well, we've got to the get-out position here, and when we finally called it quits it was obvious that we weren't going to make it at that time without really rushing. I didn't want to do that.
- 03 04 44 CC Roger.
- 03 04 46 C Ed has most of the equipment on him right now. I've got the gun and the camera and the hatch fitting, the fitting to tie the two suit hoses together. Ed has all the other paraphernalia on him right now, but he's on the suit circuit. He's got the Reprass valve OFF and we're just about all set to go. I think when we get about over Africa we're going to go through the checklist again, and when we get to Carnarvon we'll be all set.
- 03 05 22 CC Roger. Have you taken any pictures yet?
- 03 05 25 C No. As a matter of fact, we really haven't had time to do much.
- 03 05 28 CC You haven't had any time yet, have you?
- 03 05 30 C It's a nice spacecraft though, Gus.
- 03 05 35 CC Good. Do you have the Shut-off valve on the chest-pack CLOSED?
- 03 05 40 C Roger. It is.
- 03 05 41 CC Okay.
- 03 05 44 C Okay, did we get an update then?
- 03 05 57 CC Roger. It got in okay.
- 03 06 21 CC Gemini 4. Gemini 4, Houston.
- 03 06 35 CC Gemini 4, Houston.
- 03 06 45 CC Gemini 4, Houston.
- 03 07 10 CC Gemini 4, Houston CAP COM.

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**[REDACTED]**

03 07 13 C Go ahead, Houston. Gemini 4. Do you read now?

03 07 15 CC Roger, I lost you there for a minute. Say, you never did start to decompress, did you?

03 07 22 C Say again.

03 07 24 CC Did you ever start decompressing?

03 07 26 C Negative. We never started decompressing.

03 07 28 CC Roger, understand.

03 07 48 C Houston CAP COM, this is Gemini 4. Looks like we're over Texas now, huh?

03 07 53 CC You say you're coming right over Big T?

03 07 56 C Roger .....

03 07 58 CC See any of it?

03 07 59 C Sure can. We're coming over the Gulf right now.

03 08 05 CC Right over Gulf, huh? Has your weather been good around the orbit?

03 08 10 C Frankly, we haven't really had time to look out too much .....

03 08 17 CC Roger. Can you still see the booster?

03 08 19 C I don't even know where it is right now, Gus.

03 08 21 CC Roger.

03 08 23 C We saw it just as we went into darkness. We stayed with it all through the darkness .....

03 08 31 CC You're getting awfully garbled.

03 08 33 C Roger. I say again. We saw it when we were in the darkness, but we haven't seen it since we came back out into the light.

03 08 39 CC Roger, understand. You saw it on the dark side.

03 09 08 CC Gemini 4, Houston CAP COM.

03 09 10 C Go ahead, Houston. Gemini 4.

03 09 11 CC Roger. We just switched remote. Is Ed still there?

03 09 16 C Yes, he doesn't like to talk, I guess.

03 09 21 P I'm sitting here enjoying the view.

03 09 24 CC Roger. Do you get pretty heated up getting all that gear on?

03 09 27 P I got ... we got pretty warm.

**[REDACTED]**

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03 09 30 CC How do you feel now?  
03 09 31 P Fine.  
03 09 32 CC Good.  
03 09 51 CC You guys had any water to drink yet?  
03 09 53 C Negative.  
03 10 04 CC Hey, Jim, we figure the booster ought to be about 32 miles ahead of you and 5 miles below you at this time.  
  
03 10 10 C Thirty-two ahead and 5 below.  
03 10 12 CC Roger.  
03 10 29 P We've got quite a good view of the whole state of Florida, and we're passing over it now.  
03 10 34 CC You've got Florida in sight, huh?  
03 10 35 P We can see it from the top to the bottom.  
03 10 39 CC Very good.  
03 10 43 P In fact, we're looking right down at the Cape now. You can see the launch complexes down there. It's quite clear.  
  
03 11 06 CC Hey, Jim. Gemini 4.  
03 11 11 C Go ahead.  
03 11 14 CC We'd like for you to turn your cabin heat exchanger ON until you get ready to decompress. And the fan.  
03 11 20 C Roger. We're not getting hot if that's what you're worried about.  
03 11 26 CC Cabin temperature is getting up a little.  
03 11 28 C Okay.  
03 11 44 C Houston CAP COM, Gemini 4.  
03 12 46 CC Go ahead.  
03 12 51 CC This is Houston. Go ahead.  
03 12 52 C Roger. How about turning the computer OFF again?  
03 12 57 CC Affirmative, turn it OFF. Don't forget to drink some water now.  
  
03 13 06 C Yes. Can we turn the computer OFF?  
03 13 08 CC Roger. Turn the computer OFF.  
03 13 28 C Houston. Gemini 4, do you read?

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03 13 30 CC Roger, we read you. Go ahead.

03 13 32 C Roger. How about turning the computer OFF?

03 13 34 CC Roger, turn OFF the computer!

03 13 37 C Okay!

03 15 54 CC Gemini 4, Houston CAP COM.

03 15 55 C Go ahead, Houston. Gemini 4.

03 15 56 CC Hey, your cabin temperature came down 10° since you turned your heat exchanger ON.

03 16 02 C Roger.

03 16 29 CC Gemini 4, Houston.

03 16 33 C Go ahead, Houston. Gemini 4.

03 16 34 CC As you come over Ascension I want to try to give you a check there. The air-ground remote hasn't worked too well today but we sure would like to get that one up.

03 16 41 C Roger, we'll be waiting.

03 16 44 CC Roger.

03 16 45 C Would you advise, we've both had a drink, and I had 10 swallows.

03 16 51 CC Roger.

03 27 42 P We've got another sighting on the booster. It looks like it's just about horizontal with us and right straight out in front of us.

03 27 48 C Small-end-forward.

03 27 49 P We are going small-end-forward and it looks like it's very close to our orbit.

03 27 58 C And it's at about 3:28 elapsed time.

03 29 48 P The lights on the booster are still blinking. I can see them at this time.

03 34 00 C We're just at 3+3/4 right now. Just going into darkness. The sunlight has been shining on the nose of the spacecraft with small-end-forward, just about. Actually, we're 30° left of being straight ahead, small-end-forward. And the way the sun was shining on the edge of the booster .... spacecraft was causing a reflection, just like someone had a mirror there and was shining it straight ahead.

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[REDACTED]

03 34 34 P Yes, that's what ..... that last time, Jim.

03 34 41 C A bunch of thunderstorms out on the horizon.

03 34 51 C Okay. We get to Carnarvon at 3:58. That's when we're going to get our GO. We start our depressurization right there. What we're going to do is that we're going to open the Repress, tighten your helmet, .....

03 35 17 P We've got one thing left to do in the steps. We've got to take these off, Jim.

03 35 20 C Take what off?

03 35 21 P The suit pressure lines and put them on the interconnect.

03 35 25 C Yes, that's not yet though .....

03 35 28 P Do you have the interconnect over there handy?

03 35 29 C Yes, I've got it right here.

03 35 30 P Okay.

03 35 31 C This is in the egress.

03 35 31 P All right.

03 35 32 C When we start at Carnarvon.

03 35 34 C Open the Repress Valve. Okay, this is what we're going to do. Helmet tied on?

03 35 38 P Yes.

03 35 40 C Right Suit Flow Control OFF?

03 35 43 P Right.

03 35 46 C Disconnect inlet and outlet ECS hoses. Remove your interconnect.

03 36 14 C Okay, let's see. Remove the interconnect. Interconnect the two ECS hoses ... by your elbow.

03 36 24 P Okay.

03 36 24 C Pack Primary O<sub>2</sub> OPEN.

03 36 28 P Roger.

03 36 29 C Not yet.

03 36 30 P No.

03 36 33 C EVA Emergency Shut off OPEN.

03 36 36 P Roger. Check the FLOW.

[REDACTED]

[REDACTED]

03 36 37 C Check the emergency FLOW and then back to CLOSED.  
03 36 38 P Roger.  
03 36 40 C Recheck your suit, your pack, and tether.  
03 36 42 P Roger.  
03 36 43 C Recheck your face-plate closed and locked. Helmet locked, gloves on, inlet-outlet "Y", and ECS hoses free. And then I'll have a Command Pilot Suit Check, which I've already done ..... on to check the flow. Hatch lock OPEN. Then you've got your other things to check. When we actually start the Depressurization Mode, Cabin Vent valve go to 2 psi, then we close the vent valve. Then we install both blood pressure pump plugs, which I don't seem to be able to find.

03 38 05 C Gee, I don't even have one on my suit.  
03 38 07 P I don't have one either, Jim.  
03 38 15 C Swell.  
03 38 18 P Aw, baloney.  
03 38 23 P I sure don't see one.  
03 38 30 C Nope, I don't have one.  
03 38 31 P I don't either, unless it's up under my cover.  
03 38 42 C No, you don't have one, Ed.  
03 38 45 P The hole's not big enough but still you ought to have one.  
03 38 50 C Right.  
03 39 00 P Neither of our suits have the blood pressure cuff - blood pressure plug  
03 39 07 P And we just had a very pretty moonset.  
03 39 00 C Just a casual comment here. We looked out and thought we saw the horizon. It turned out, it was obviously air glow. We could see the stars well below its edge.  
03 49 10 C We'll talk about this some more later when we get more time.

[REDACTED]

03 50 07 P We noticed the old familiar pulsing in the suits when we had the RECIRC closed all the way down and our dampers that time were open full in both suits. It was the same type of a pulsation that occurred in altitude chamber and which was, I believe, duplicated in the testing.

02 50 33 P Cabin pressure seems to hold around 4.8 to 5.0, right on the bottom. Also, our Left Secondary Oxygen is pretty high, looks like it's up around 5400. Been that way ever since we started.

CARNARVON

03 57 34 CC Gemini 4, Carnarvon CAP COM.

03 57 36 C Go ahead, Carnarvon. Gemini 4. How do you read?

03 57 38 CC Loud and clear. Will you turn you cabin fan OFF, heat exchanger full warm?

03 57 44 C Carnarvon, Gemini 4.

03 57 46 CC Gemini 4, Carnarvon CAP COM.

03 57 50 CC Gemini 4, Carnarvon CAP COM. Over.

03 57 59 C Hello, Carnarvon. Hello, Carnarvon. Gemini 4.

03 58 01 CC Gemini 4, Carnarvon CAP COM.

03 58 04 C Roger, Carnarvon. Gemini 4. How do you read?

03 58 07 CC Loud and clear. How me? Over.

03 58 08 C Loud and clear.

03 58 10 CC Roger. Will you turn your cabin fan OFF. Heat exchanger full warm?

03 58 15 C Roger.

03 58 18 CC Roger. We'd like a blood pressure from the Command Pilot.

03 58 30 P The cabin fan does give a noticeable squeal when it's on. I notice now that the fan is off. I notice a definite decrease.

03 58 35 CC What's your status on EVA?

03 58 37 C The status is GO for EVA.

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03 58 39 CC Okay. You're GO for EVA from here. Stand by for decompression - correction, depressurization. Can you give us a blood pressure? On the Command Pilot?

03 58 43 C The status is GO for EVA.

03 58 45 P The cabin appears to be venting at about 5.3. Just heard the vent valve going .... for Eee Vaa.

03 58 49 C Roger. I'm going to try to give you a blood pressure right now.

03 58 51 CC All right.

03 59 15 CC Okay. Keep coming, it's coming up.

03 59 24 CC You are up to full-scale.

03 59 37 CC Can you give me about 10 seconds on your Quantity Read switch, please?

03 59 57 P Quantity Read is ON.

03 59 58 CC Roger.

04 00 08 P Quantity Read is OFF.

04 00 10 CC Roger.

04 00 16 CC Okay. We got a good blood pressure from you.

04 00 19 CC Your Right Secondary O<sub>2</sub> should be OPEN and your Left Secondary O<sub>2</sub> should be CLOSED.

04 00 26 P That is affirmative. That's the configuration. The left is CLOSED; the right is OPEN.

04 00 31 C We have a GO to start decompression, is that right?.

04 00 34 CC That's affirmative for decompression and a GO for EVA.

04 00 37 C Roger..... call again near Hawaii.

04 00 41 CC Roger. Very good.

04 01 02 CC We'd like for you to turn your Quantity Switch to READ from now on until the end of the EVA.

04 01 07 CC Okay. I got it on.

04 01 10 CC I'll be standing by here on the ground and keep the conversation down.

04 01 13 C Roger.

04 07 21 P Okay.

04 07 24 C Hatch lock OPEN.

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04 07 29/ P Hatch locks are OPEN.  
04 07 30 C Okay.  
04 07 33 C Don your other thermal gloves. I guess you got one of them.  
04 07 38 P The thermal gloves didn't work out too bad, Jim.  
04 07 42 C Yes. Okay. We're going to vent the cabin now.  
04 07 43 P Yes.  
04 07 45 C Two psi. Did you get that, .....El? We're going to close vent valve and we're going to check those blood pressure readings that we have. We're going to check the suits for leaks at 2 psi. Check yours to make sure that suit .... one. Okay?  
  
04 08 00 P Ready to go.  
04 08 09 C Hear the valve?  
04 08 10 P Roger.  
04 08 12 C Carnarvon, do you still read Gemini 4?  
04 08 22 C Are we.....  
04 10 45 P Okay.  
04 10 48 P I hear it - I'll keep mine...where do you...oh, you want mine? All right, I'm sorry, Jim.  
  
04 10 50 P All right.  
04 10 53 C Okay.  
04 10 55 P Roger, we're in a vacuum now and the right suit is holding at 4 and the flow is satisfactory. I'm not overly warm.  
  
04 11 02 C Okay. We've got the cabin vent valve open. .... cabin at zero. Time to unlock the hatch.  
  
04 11 10 P Roger. Time to unlock the hatch.  
04 11 12 C .....  
04 11 17 P Well, the thing about it, I've got to do something with the cabin .....  
  
04 11 21 P Okay.  
04 11 24 C What are we going to do with .....?  
04 11 26 P Hold on to it, cause I can't ..... it.  
04 11 29 C .....

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[REDACTED]

04 11 50 C What's the matter? Isn't it working?  
04 11 53 P Uh huh.  
04 11 55 P ..... work up here.  
04 12 02 C ..... unlocked .....  
04 12 05 P Yes, I know they're unlocked.  
04 12 07 P I'll look again.  
04 19 09 P That's why I had these gloves made this way so I  
could take them off.  
04 12 12 C Right.  
04 12 17 C ..... you're staying up with it, buddy.  
04 12 19 P What?  
04 12 24 P That's up.  
04 12 26 C Say again.  
04 12 28 P They're both on UP.  
04 12 31 C Okay.  
04 12 45 C Now you have .....  
04 12 55 P I know it.  
04 13 07 P Three cycles.  
04 13 08 C Okay, let me stand by for a minute here and get the  
..... controls.  
04 13 29 P ..... to LOCK so we can get on it. Okay now, that's  
working.  
04 13 53 C Take it easy, Ed. ....  
04 14 09 C Woke up?  
04 14 11 P Yes, just wait a minute.  
04 14 14 C Yes, but listen, don't you ..... Stand by one, Ed.  
04 14 18 P Are they doing anything?  
C .....  
04 14 19 P Are they moving?  
04 14 22 C No, they're not moving a bit.  
04 14 24 C Think we're .....  
04 14 32 P Hold these a minute, will you?

[REDACTED]

[REDACTED]

04 14 36 C Just take it easy. If we don't make it this time, we'll make it next time.

04 14 38 P Roger. Next time around.

04 14 41 C Or tomorrow.

04 14 43 C You can't see too well with that visor on either, can you?

04 14 56 P They're both on UNLOCK.

04 15 10 C .....

04 15 17 P Are they moving, Jim?

04 15 19 C Stand by. I can't see .....

04 15 27 C Negative, it looks like they're not moving at all.

04 15 43 P Looks like that thing isn't moving.

04 15 45 P I'll take it easy a minute.

04 15 48 C Yes, no sweat.

04 16 08 C You know, it's a good thing we can't get it open and not close.

04 16 10 P Yes.

04 16 15 C Let's not leave it OFF.

04 16 17 P I'm on LOCK now.

04 16 24 C Where're you going?

04 16 33 P This is the first time it's ever failed this way.

04 16 36 C Sure is.

04 16 39 C No it isn't either. It failed that way up at McDonnell.

04 16 42 P So that it wouldn't move at all?

04 16 43 C Yes.

04 16 45 P So it was just free swiveling.

04 16 48 C Yes, it - I know what the trouble is. It's a spring pushing it back.

04 17 00 C I think it will be all right.

04 17 02 C Let me go to MANUAL and .....

04 17 30 P I got it, Jim.

04 17 31 C Wait a second.

04 17 33 P Okay.

[REDACTED]

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04 17 36 P You got it?  
04 17 37 C Yes, I got it.  
04 17 39 P All right.  
04 17 40 C Okay, now make sure you get that mother back on.  
04 17 43 P Back in LOCK.  
04 17 44 C All the way?  
04 17 45 P Yes.  
04 17 48 C Okay. You got it LOCKED, UNLOCKED all the way then?  
04 17 50 P Yes, I do, Jim.  
04 17 53 P They're all back in LOCK now?  
04 17 56 P Okay. I'm going to take it easy now.  
04 18 00 C Yes, do that. Now, I want to get the spacecraft right-side up and leave that last .....

04 18 04 P What a view! By golly. You can see the black sky up above.

04 18 10 C Okay, just a second. Let me get the spacecraft where I want it.

04 18 12 P All right.

04 18 17 P Door's a little harder to move than I thought.

04 18 21 P Yes.

04 18 28 P It sure is clear and crystal smooth.

04 18 33 P Are we on VOX, Jim?

04 18 36 C Something just fell out.

04 18 38 P It was a bolt.

04 18 41 C No, it was a big white thing.

04 18 43 P It's my ..... it's adrift probably, huh?

04 18 44 C What?

04 18 45 P It's my lanyard.

04 18 48 C No, I thought I saw it floating away .....

04 18 51 C Oh, yes. You can.....

04 19 00 P Okay, my visor's down.

04 19 12 C Okay, take it easy.

04 19 14 P Right.

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[REDACTED]

04 19 19 C .....  
 04 19 35 I I'm going out there to install the cameras, Jim.  
 04 19 36 C Okay.  
 04 19 41 P The sun's very bright back this way.  
 04 19 43 C Is it?  
 04 19 45 P Yes.  
 04 19 46 C ..... your visor.  
 04 19 48 P Got my visor down.  
 04 19 50 C Your foot.  
 04 19 52 P Huh?  
 04 19 55 C You're going to have to watch your foot.  
 04 19 57 P Okay.  
 04 20 00 P You see, I have to turn all around to do this, Jim.  
 04 20 02 C Yes, I know.  
 04 20 04 C Just move it all over the equipment there.  
 04 20 05 P All right.  
 04 20 17 P I can see your thrusters firing.  
 04 20 24 P We're taking some pictures now.  
 04 20 36 P Am I clobbering the switches, Jim?  
 04 20 38 C Yes, you're really all over 'em, Ed.  
 04 20 41 P Okay. Hand me the umbilical guard.  
 04 20 45 C Take it easy now. You sound like you're pulsing.  
 04 20 49 P No, I'm in good shape.  
 04 20 50 C Listen, hold it. Hold it. Hold it.  
 04 20 55 P You got it through?  
 04 20 56 C No, hold on.  
 04 21 00 P Roger. Got plenty of time. Boy! Oh, boy! Oh, boy!  
 04 21 02 C Pretty neat, huh?  
 04 21 03 P Yes, it's something!  
 04 21 05 C Think we're T/M ..... Here, I got one of your gloves  
 ..... I got both of your gloves.  
 04 21 09 P Yes, I don't even need them right now.

[REDACTED]

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04 21 17 C Okay..... the T/M. They're calling back now.

04 21 29 P As 'Ole Leonov' says, I'm doing some work out in space. It isn't very much, but I'm doing something.

04 21 33 C Pretty black out there, isn't it?

04 21 36 P Yes.

04 21 38 P Okay, I turned the camera off, so I would save it.

04 21 47 P Oh, I just knocked it off the mount.

04 21 48 C Did you?

04 21 50 P Yes, I'll go back and get it.

04 21 55 C Tell me. How do you like this glass?

04 21 57 P That's fine.

04 22 02 P You know, I'm kinda glad I got the visor on ..... for the work I'm doing.

04 22 07 C Pretty bright?

04 22 09 P Well, I'm looking right into it.

04 22 17 C Your jiggling around actually moves the spacecraft.

04 22 19 P Does it? I can see it pulsing.

04 22 29 P Okay. I'm going to feed the umbilical out.

04 22 31 C Okay. Be careful you don't trip some of the switches. Let me give it to you.

04 22 37 P Okay. Feed her out slow.

04 22 43 C Okay. I've got .....

04 22 48 P All right.

04 22 55 C .....

HAWAII

04 23 03 CC Gemini 4, Hawaii CAP COM.

04 23 14 C Hawaii, do you read Gemini 4?

04 23 17 CC Gemini 4, Hawaii.

04 23 19 C Hello, Hawaii. Hello, Hawaii. Gemini 4. How do you read?

04 23 22 CC Roger. Read you loud and clear. Can you give us a status on your decompression?

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[REDACTED]

04 23 24 C We're going to put you on RECORD so the whole world can hear this later on.

04 23 26 P All right.

04 23 28 C Hawaii, Gemini 4. Do you read?

04 23 30 C You're on RECORD. We're on CONTINUOUS INTERPHONE-PUSH TO TALK. Still on UHF.

04 23 30 CC Gemini 4, Hawaii CAP COM. Read you loud and clear. How me?

04 23 52 C Very good, Ed. Very good.

04 23 58 CC Gemini 4, Hawaii CAP COM. Do you read?

04 23 59 C Stand by one.

04 24 40 CC Gemini 4, Hawaii CAP COM. Read you loud and clear. What is your status on decompression?

04 24 46 C Hello, Hawaii, Hello, Hawaii. Gemini 4. Do you read?

04 24 51 CC Gemini 4, Hawaii CAP COM. Read you loud and clear. How me?

04 24 54 C Loud and clear. We're on VOX. I guess you aren't getting us on VOX.

04 24 57 CC Roger. We just now received you. What is your status on decompression?

04 25 02 C Got the outside 60-mm camera mounted, and he's getting the gun ready right now.

04 25 09 CC Roger. I understand. Can you give us a reading on emergency O<sub>2</sub> ?

04 25 16 CC Did you copy, Gemini 4?

04 25 18 C Roger. You mean the emergency O<sub>2</sub> in Ed's bottle?

04 25 21 CC Affirmative.

04 25 22 C This one's full and .....

04 25 25 P It's 3/4 right now (3400 psi)

04 25 26 C It's 3/4 right now.

04 25 30 C Say something.

04 25 31 P It's 3/4 right now. Hasn't changed a step. How do you read?

04 25 36 CC Roger. Read you loud and clear Pilot. How me?

[REDACTED]

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04 25 36 P Outside the spacecraft, as a matter of fact.

04 25 42 CC Roger. Understand.

04 26 07 C Roger. He has the hatch open. He's standing in the seat.

04 26 11 CC Roger. Understand. Houston will give you a GO or NO GO to exit spacecraft over Guaymas. Did you copy?

04 26 26 CC Gemini 4, Hawaii CAP COM.

04 26 28 C Go ahead, Hawaii, Gemini 4.

04 26 30 CC Roger. Did you copy my last? Houston will give you GO-NO GO to exit spacecraft over Guaymas.

04 26 36 C Roger. Everything looks good here. What do you think?

CC We're happy with it.

04 26 42 CC Everything looks good on the ground, Gemini 4.

04 26 46 C Very good.

04 27 19 C Our ECS is still good. It's reading still 50 percent. Looks like we're not even using any.

04 27 26 CC We concur on the ground.

04 27 31 C When he's moving around out there, he's really rocking the spacecraft around.

04 27 35 CC Roger. Understand.

04 28 11 CC Gemini 4, Hawaii CAP COM.

04 28 13 C Go ahead, Hawaii. Gemini 4.

04 28 14 CC Roger. We just had word from Houston. We're ready to have you get out whenever you're ready. Give us a mark when you egress the spacecraft.

04 28 25 C Okay. We've got our GO now. Is that right?

04 28 26 CC Affirmative.

04 28 27 C Okay.

04 28 39 CC Be sure and give us a mark when he egresses.

04 28 43 C Okay. We're still doing a little work right here.

04 28 45 CC Roger. Understand.

04 29 14 P All right.

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04 29 21 C You're in RECORD and CONTINUOUS INTERPHONE-PUSH TO TALK. I'm on UHF. How are you doing?

04 29 24 P I'm in good shape.

04 29 25 C Okay .....

04 29 28 CC Gemini 4, Hawaii CAP COM. What is your status now?

04 29 30 C Roger. We're about ready to start getting out. Ed just got one of his gloves back on. He'll put another one on and then he'll be ready to go.

04 29 33 P I'm not going to carry it, Jim. I don't need it.

04 29 38 C You're not going to carry it?

04 29 40 C Okay. We're all set, Ed, right now. Ready to go out slowly.

04 29 41 CC Can you repeat, Gemini 4?

04 29 43 P Yes.

04 29 44 C Listen, do you want me to get the spacecraft in any other attitude or does this look okay?

04 29 48 P Looks okay, Jim.

04 29 50 C Okay. I'll tell you when.

04 29 50 CC Gemini 4, Hawaii CAP COM. Can you repeat your last transmission?

04 29 52 P I'm ready.

04 29 53 C Okay, stand by one. I want to get my timer set. I'll give you a GO in just about 2 minutes - or less.

04 29 59 CC Gemini 4, Hawaii CAP COM. Do you copy?

04 30 00 P I'm going to have to let the camera run out because it's too hard to work.

04 30 02 C Okay, just a second.

04 30 06 P Ready.

04 30 07 C Okay, go ahead.

04 30 11 CC Gemini 4, Hawaii CAP COM. Do you copy?

04 30 19 P Okay. I'm separating from the spacecraft.

04 30 21 C Okay. He's separated from the spacecraft at this time, Hawaii.

04 30 25 C .....

04 30 26 P Okay. My feet are out.

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[REDACTED]

04 30 27 C Okay. His feet are out.  
04 30 29 P I think I'm dragging a little bit, so I don't want to fire the gun yet.  
04 30 33 C .....  
04 30 36 P Okay. I'm out.  
04 30 38 C Okay. He's out. He's floating free.  
04 30 48 P Okay. I put a little roll in, took it right out.  
04 30 50 C Very good.  
04 31 00 P Am I in your view, Jimbo?  
04 31 02 C Well, you know I can't see .....  
04 31 04 P Don't sweat it. I'll come to you.  
04 31 12 C Oops! There goes your glove. Well, we'll just let it go.  
04 31 14 P All right.  
04 31 19 P Okay. I rolled off and I'm rolling to the right now. Under my own influence. There goes a -- looks like a thermal glove, Jim.  
04 31 26 C It is, Ed.  
04 31 28 P All right. Now, I've come above the spacecraft and I'm under my own control.  
04 31 45 P It really looks funny to see my glove out there, Jim.  
04 31 48 C Does it?  
04 31 50 P Yes. Okay, I'd better get over. Okay, I'm coming over.  
04 32 00 C Okay. Stand by.  
04 32 02 P See me yet?  
04 32 04 C No, sure don't.  
04 32 05 P Huh?  
04 32 07 P Oh, there you are. I can spin around now.  
04 32 12 C Okay. Just a second. You're right in front, Ed. You look beautiful.  
04 32 16 P I feel like a million dollars. All right we'll pitch up and yaw left. I'm coming back to you.  
04 32 16 CC Gemini 4, Houston CAP COM.  
04 32 24 C Stand by. I get the swizzle stick out of here.

[REDACTED]

[REDACTED]

04 32 25 CC Gemini 4, Houston CAP COM.

04 32 31 P Okay. I put in a little bit too much pitch there.

04 32 36 P The gun works real great, Jim.

04 32 38 C Let me get over where I can see you, Ed.

04 32 40 P Take it easy now. You're in a vacuum.

04 32 40 CC Gemini 4, Houston CAP COM.

04 32 42 C Ha! Ha? No, I want to get the spacecraft on the horizon.

04 32 47 P All right.

04 32 50 P Okay. I'll come in and take a look at you now.

04 32 52 C Wait a second. Let me take your picture.

04 32 52 CC Gemini 4, Houston CAP COM.

04 32 55 P Just a minute - just a minute.

04 33 04 P This gun is very good.

04 33 07 C Is it?

04 33 08 CC Gemini 4, Gemini 4, Houston CAP COM.

04 33 09 P Yes. I've got me upside down. Now I see my glove is departing.

04 33 14 CC Gemini 4, Houston CAP COM.

04 33 16 P Okay. Don't fire the thrusters.

04 33 16 C Okay. Don't. I'm going on. Who's calling Gemini 4?

04 33 20 CC Houston CAP COM. Has he eggressed?

04 33 24 C He's out, Gus and it's really nifty. Listen, our VOX doesn't work very well, and I don't seem to read anybody. You will have to relay. The gun works swell. He's been able to maneuver all over - out front, back under the nose, and he's back out again.

04 33 34 CC Say again.

04 33 35 C ..... work very well, but I don't think he can read anybody. So I'll have to relay. The gun works swell. He's been able to maneuver all over - out front, back under the nose, and he's back out again.

04 33 45 CC That's great!

04 33 45 C Ed?

[REDACTED]

[REDACTED]

00 33 46 P Yes.

04 33 48 C Let me try VOX again. Say something.

04 33 52 P Hello, Gus. How do you read, CAP COM?

04 33 56 C Hey, Gus, do you read?

04 33 58 CC I read you now, Ed.

04 34 00 C It's not really working, Ed.

04 34 02 P All right.

04 34 04 C Okay. Listen, I still can't see you out there.

04 34 05 CC It's working. Keep talking.

04 34 07 P All right. I've drifted off to the side. I think we're going to have ..... I'm taking pictures now, Jim.

04 34 11 CC Gemini 4, it's working. Keep talking.

04 34 11 C Okay.

04 34 15 C Make that flag look pretty.

04 34 19 P Yes.

04 34 21 P Okay. I'm right by the stub antenna now.

04 34 24 CC Gemini 4, keep talking. It's working.

04 34 24 C Okay. Let me get some ..... to you, Ed. I ought to be getting some tremendous pictures of you. Let me try again with the Hasselblad.

04 34 30 CC Gemini 4, Houston CAP COM.

04 34 31 P Okay. I think I've exhausted my air now.

04 34 33 C Okay.

04 34 36 C Stay right there.

04 34 40 P I had very good control with it. I just needed more air.

04 34 45 C Okay. Stand by. Let me take a couple of pictures, ole buddy.

04 34 48 P All right.

04 34 52 CC Gemini 4, Houston CAP COM.

04 34 54 C Go ahead, Gus.

04 34 58 CC Tell him to keep talking. We're receiving Ed through your VOX.

[REDACTED]

[REDACTED]

04 35 00 P Are you reading me, CAP COM?

04 35 01 P .....Gus?

04 35 02 C Okay. We're going to VOX now.

04 35 04 C Okay, Ed. They're receiving you.

04 35 07 P Okay.

04 35 09 C Tell them what you think.

04 35 10 P That's right, CAP COM, it's very easy to maneuver with the gun. The only problem I have is that I haven't got enough fuel. I've exhausted the fuel now and I was able to maneuver myself around the front of the spacecraft, back, and maneuver right up to the top of the adapter. Just about ..... came back into Jim's view. The only thing I wish is that I had more. This is the greatest experience I've ..... it's just tremendous! Right now I'm standing on my head, and I'm looking right down, and it looks like we're coming up on the coast of California. I'm going into a slow rotation to the right. There is absolutely no disorientation associated with it.

04 35 52 C One thing about it, when Ed gets out there and starts wiggling around, it sure makes the spacecraft tough to control.

04 36 02 P I feel just about like a ..... commercial.

04 36 03 CC Is he taking pictures?

04 36 11 CC Take some pictures.

04 36 12 P Okay. I'm going to work on getting some pictures, Jim.

04 36 14 C Okay. Get out in front where I can see you again.

04 36 16 P Yes.

04 36 18 C I've only got about three on the Hasselblad.

04 36 20 P Okay.

04 36 22 C Where are you?

04 36 24 P Right out in front now. I don't have the control I had any more without that gun.

04 36 28 C Yes, I noticed that.

04 36 31 P On the tether.

04 36 31 CC You've got about 5 minutes.

[REDACTED]

[REDACTED]

04 36 33 P But I want to get out and shoot some good pictures. I'm not satisfied with that. Okay, I'm drifting down underneath the spacecraft.

04 36 40 C Okay. I'm going to start firing the thrusters now.

04 36 45 P All right. There's no difficulty in recontacting the spacecraft. It's all very soft, particularly as long as you move nice and slow. I'm very thankful to have the experience. It's great, Gus. Right now I'm right on top of the spacecraft - just above Jim's window. I'll bring myself in and put myself out into your view, Jim.

04 37 09 C Okay. Hold it and I'll take your picture.

04 37 24 P Right now I could maneuver much better if I didn't have the gun with the camera on it, because I have to tie one hand up with it.

04 37 31 C Okay. Stay right there if you can.

04 37 47 C Okay, do you want me to maneuver for you now, Ed?

04 37 50 P No, I think you're doing fine. What I'd like to do is get all the way out, Jim, and get a picture of the whole spacecraft. I don't seem to be doing that.

04 38 00 C Yes, I noticed that. You can't seem to get far enough away.

04 38 02 P No.

04 38 05 C Where are you now? Am I clear to thrust a little bit?

04 38 07 P No, don't thrust now.

04 38 12 C Okay. Ed, just free-float around. Right now we're pointing just about straight down at the ground.

04 38 14 P Okay, now I'm taking a look back at the adapter and equipment back there. I can see the separation plane; it's quite clean. The thrusters are clean. The thermal paint, the thermal stripping looks quite good. Also, the velcro that we put on seems to be in good shape right by the camera. I'm coming back down on the spacecraft. I can sit up here and see the whole California coast.

04 38 58 P Okay. Now I'm going to go out and see how much ..... if I've got enough harness.

04 39 26 P The sky sure is black.

[REDACTED]

[REDACTED]

04 39 34 C Hey, Ed, can you see into the right-hand hatch, right now?

04 39 37 P No.

04 39 38 C Aw, shoot!

04 39 41 P Let me work on back. Listen, it's all the difference in the world with this gun. When that gun was working, I was maneuvering all around.

04 39 50 C .....

04 39 52 P Yes. Okay.

04 40 20 P .....

04 40 22 C Yes.

04 40 24 P How are you doing old buddy?

04 40 26 C Pretty good. How about you?

04 40 28 P Good. Looking right in your window.

04 40 31 C Where? You're not even there. Are you there, Ed?

04 40 32 P No, I'm moving out now.

04 40 34 C Let me take a picture.

04 40 53 P Okay, there I go. No. Boy, I sure could use that gun.

04 40 53 C A pretty neat little contraption, huh?

04 40 55 P Yes. All the strings that are attached to me tend to dampen out my travel on the lanyard.

04 41 04 CC Gemini 4, Houston CAP COM.

04 41 09 C Yes, I noticed that.

04 41 10 CC You've got 4 minutes and 30 seconds left.

04 41 10 P Okay, I'm going to free drift a little bit, and see if I can drift into some good picture-taking position.

04 41 16 C Okay. Here, let me control the spacecraft .....

04 41 33 C Just for your information Ed, we're only down to 48 percent on our O<sub>2</sub>.

04 41 38 P Okay.

04 41 40 C ECS O<sub>2</sub> pressure is about 830, so it's staying right up there.

[REDACTED]

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04 41 45 P You know one thing about this. Where we have this tether attached, I can't get a good push off.

04 41 52 C Oh yes, is that right? Where it's attached to you or where it's attached to the spacecraft?

04 42 00 P Where it's attached to the spacecraft. There's nothing particularly to get a push off on. Now, let's see if I can get a decent push off. If I didn't have the gun I could do a little better. There just isn't anything to push on.

04 42 01 CC Gemini 4, Houston CAP COM.

04 42 07 CC Gemini 4, Houston CAP COM.

04 42 19 C Ed, smile.

04 42 26 P I'm looking right down your gun barrel. Al right.

04 42 28 C Let me take a closeup picture of you.

04 42 30 P Okay. Just a minute.

04 42 31 C You smeared up my windshield, you dirty dog!

04 42 34 P Did I really?

04 42 35 C Yes.

04 42 37 P Well, hand me out a kleenex and I'll clean it.

04 42 40 C Ha! See how it's all smeared up there?

04 42 44 P Yes.

04 42 45 C It looks like there is a coating on the outside and you've rubbed it off.

04 42 47 P Yes.

04 42 50 C That's exactly what you've done.

04 42 53 P Okay.

04 42 53 CC Gemini 4, Houston CAP COM.

04 42 54 CC Gemini 4, Houston CAP COM.

04 42 55 C Okay. Right now, the spacecraft rates are up about 1 deg/sec in pitch and yaw, and about 1/2 deg/sec in roll.

04 43 05 P I'm not satisfied with the pictures that I've gotten yet.

04 43 10 C Okay.

04 43 14 CC Houston CAP COM.

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04 43 15 C We've been tumbling around. I don't even know exactly where we are, but it looks like we're about over Texas.

04 43 24 CC Gemini 4, Houston CAP COM.

04 43 25 C As a matter of fact, you know that looks like Houston down below us.

04 43 31 P I believe it is, Jim.

04 43 33 C Sure is, I - hey, Gus, I don't know if you can read, but we're right over Houston.

04 43 34 CC Gemini 4, Houston CAP COM.

04 43 35 P That's right. I'm looking right down on Houston.

04 43 40 C Run out and look!

04 43 41 CC Gemini 4, Gemini 4, Houston CAP COM.

04 43 42 P My golly! I'm looking right in the bay there.

04 43 45 C Yes, that's Galveston Bay right there.

04 43 46 P Yes.

04 43 47 C Ed, can you see in your side of the spacecraft?

04 43 50 P Let me get a picture of it.

04 43 54 C Can you see the camera here?

04 43 55 P Yes.

04 43 57 C Is it pointing at you?

04 43 58 P No, not now. I'm out of it.

04 44 00 C Which way?

04 44 02 P I'm behind the adapter. I'm trying to get some pictures. I'm right above my hatch now.

04 44 08 C Okay.

04 44 10 CC Gemini 4, Houston.

04 44 15 CC Gemini 4, Houston.

04 44 16 P Yes, sir. If I had about another couple of bottles, Jim .....

04 44 20 C That would really be it, huh?

04 44 22 P Yes. I'm still not satisfied with the pictures I'm getting. I've only gotten about three or four.

04 44 24 CC Gemini 4, Houston.

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[REDACTED]

04 44 28 CC Gemini 4, Houston.

04 44 33 C Is that right? I've taken a lot, but they're not very good. You're in too close for most of them.

04 44 40 P Okay.

04 44 41 C I finally put the focus down to about 8 feet or so. Oh yes, that's great, the clouds on water behind you.

04 44 45 CC Gemini 4, Houston.

04 44 53 P Okay. I'm going to let myself go out now.

04 44 59 CC Gemini 4, Houston.

04 45 07 CC Gemini 4, Houston.

04 45 12 CC Gemini 4, Houston.

04 45 12 C You know, Ed, this thing about the reference we were talking about looks like it was sure right.

04 45 17 P Out here you don't even need one.

04 45 18 C Yes.

04 45 20 CC Gemini 4, Houston.

04 45 24 CC Gemini 4, Houston.

04 45 25 C I'm going out to PUSH-TO-TALK and see what the Flight Director has got to say.

04 45 33 C Gus, this is Jim. Got any message for us?

04 45 35 CC Gemini 4, get back in!

04 45 36 C Okay.

04 45 41 P One, what are we over now, Jim?

04 45 45 C I don't know. We're coming over the West now, and they want you to come back in now.

04 45 47 P Back in?

04 45 48 C Back in.

04 45 50 CC Roger, we've been trying to talk to you for awhile here.

04 45 50 P Aw, Cape, let me just find a few pictures.

04 45 51 C No, back in. Come on.

04 45 54 P Coming in. Listen, you could almost not drag me in, but I'm coming.

[REDACTED]

[REDACTED]

04 46 00 C You still have 3 and a 1/2 more days to go, buddy.

04 46 02 P I know it.

04 46 10 P I'm coming.

04 46 14 C Okay.

04 46 15 CC You have about 4 minutes until Bermuda LOS.

04 46 20 CC You have about 4 minutes till Bermuda LOS, Jim.

04 46 36 CC Gemini 4, Houston CAP COM.

04 46 38 P .....

04 46 39 C Okay, okay. Don't wear yourself out now. Just come on in.

04 46 55 C How are you doing there?

04 46 56 P I'm doing great.

04 46 57 C Good. ECS O<sub>2</sub> ..... is back in order.

04 46 59 P All right.

04 47 00 C Lots of pressure ... 47 pounds .....

04 47 05 P Roger.

04 47 12 C The spacecraft really looks like it's out-gassing because all the - whenever a little piece of dirt or something goes by it always heads for the door and goes right on out.

04 47 26 C Okay, let's - oops, take it easy now. Take it easy.

04 47 30 P ..... I'm standing on top of it, right now.

04 47 32 C Okay, ready on top. Come on in.

04 47 39 C Boy, this load on our spacecraft is fantastic. You can put in a 2 deg/sec attitude change in nothing flat! Can't you get a hold there, Ed?

04 47 51 P Yeah ..... now.

04 47 56 C Okay.

04 47 56 P It's no sweat. Actually, I'm trying to get a better picture.

04 47 58 C No, come on in.

04 48 00 P I'm trying to get a picture of the spacecraft now.

04 48 02 C Ed, come on in here!

04 48 03 P All right. Let me fold the camera and put the gun up.

[REDACTED]

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[REDACTED]

04 48 10 CC Gemini 4, do you read Houston?

04 48 15 P Ask them about no. 8.

04 48 18 C What?

04 48 19 P Ask them about no. 8

04 48 20 C No. 8? Okay, how's no. 8?

04 48 26 C Okay. Let's not lose that camera now. I don't quite have it. A little bit more, but easy, easy, easy.

04 48 32 P Got it?

04 48 33 C Okay, I've got it.

04 48 34 P Okay, now I can enter ..... It's just like we said .....

04 48 40 C Yes, we sort of talked about that. But we sort of talked about that but they didn't have any place for the camera. Come on, let's get back here before it gets dark.

04 48 46 P Okay. This is the saddest moment of my life.

04 48 53 C Well, you're going to find a sadder one when we have to come down from this whole thing.

04 49 00 P I'm coming.

04 49 01 C Okay.

04 49 04 P .....

04 49 08 C Come on now.

04 49 15 C Okay.

04 49 17 CC Gemini 4, Houston CAP COM.

04 49 20 C Be sure you've got those hatch dogs fixed now.

04 49 22 P Yes .....

04 49 26 CC Gemini 4, Houston CAP COM.

04 49 32 CC Gemini 4, Houston CAP COM.

04 49 44 CC Gemini 4, Houston CAP COM.

04 49 47 C I just took all that stuff down there and ..... Okay, I'm going to PUSH-TO-TALK now. I couldn't ..... interphone.

04 49 57 C Okay, have any messages for us, Houston?

04 49 59 CC Are you getting him back in?

04 50 04 C He's standing in the seat now. His legs are down below the instrument panel.

[REDACTED]

04 50 08 CC Okay. Get him back in. You are going to have Bermuda LOS in about 20 seconds.

04 50 12 C Yes, he's coming in. He's having some trouble getting back into the spacecraft it looks like.

04 50 18 CC You got your cabin lights up bright in case you hit darkness?

04 50 21 C I can't read you. Say again.

04 51 00 CC Gemini 4, Houston CAP COM. Give me a status.

04 51 18 CC Gemini 4, Houston CAP COM.

04 51 28 C Go ahead, this is Gemini 4.

04 51 30 CC Roger. Is he getting back in, Jim?

04 51 33 C Listen, we are kind of busy. If you don't really have something for us, wait a couple of seconds.

04 51 41 CC Roger.

04 52 46 CC Gemini 4, we have about another minute. Could you give me your status before .....

04 53 01 CC Gemini 4, Houston CAP COM.

04 53 22 CC Gemini 4, Houston CAP COM.

04 53 30 CC Gemini 4, Houston. Give me your status.

04 53 39 CC Gemini 4, Houston CAP COM. Give me your status.

04 54 04 CC Gemini 4, Houston CAP COM.

05 00 03 CC Gemini 4, Houston CAP COM.

05 00 12 CC Gemini 4, Houston CAP COM.

05 00 23 CC Gemini 4, Houston CAP COM.

05 00 38 CC Gemini 4, Gemini 4, Houston CAP COM. Over.

05 00 51 CC Gemini 4, Houston CAP COM.

05 01 03 CC Gemini 4, Houston CAP COM.

05 01 32 CC Gemini 4, Gemini 4, this is 12 Echo on UHF.

05 01 45 CC Gemini 4, this is Houston CAP COM. Over.

05 02 01 CC Gemini 4, Gemini 4, this is Houston CAP COM. Over.

05 02 22 CC Gemini 4, Houston CAP COM. Over.

05 02 36 CC Gemini 4, Houston CAP COM.

05 02 48 CC Gemini 4, Houston CAP COM. Over.

05 03 24 CC Gemini 4, Houston CAP COM. Over.

[REDACTED]

05 03 42 CC Gemini 4, Gemini 4, Houston CAP COM. Over.

05 03 50 CC Gemini 4, Houston CAP COM.

05 05 20 CC Gemini 4, Houston CAP COM.

05 06 06 C ..... reads, Gemini 4.

05 06 10 CC Gemini 4, this is Houston CAP COM. Go ahead.

05 06 35 CC Gemini 4, Houston CAP COM. Go ahead.

05 06 43 CC Gemini 4, Houston CAP COM.

05 06 50 CC Gemini 4, Houston CAP COM. We read you once, go ahead.

05 07 10 CC Gemini 4, Houston CAP COM. Over.

05 07 28 CC Gemini 4, Houston CAP COM. Over.

05 07 39 CC Gemini 4, Houston CAP COM. Give me your status.

05 07 47 CC Gemini 4, Houston CAP COM. Give me your status.

05 07 57 CC Jim, if you're trying to transmit, you're completely unreadable. I'm getting nothing but noise.

05 08 15 CC Gemini 4, Houston CAP COM. Give me your status.

05 08 37 CC Gemini 4, Houston CAP COM.

05 14 40 P That was something.

05 14 47 P That was the most natural feeling, Jim.

05 14 50 C Yeah. I know it. You looked like you were in your mother's womb.

05 14 52 P I felt like .....

05 14 55 C That's the same position ..... that we're taking right now, you know this is quite comfortable.

05 14 59 P Yes.

05 15 02 C Now we got the UTD and all this other jazz.

05 15 07 P And they're full.

05 15 21 P Can you put that .....

05 15 21 C .....

05 15 23 P I'm just trying to get them all out, Jim.

05 15 23 C Yes, that's okay.

05 15 26 C But you had a bag of that stuff over here someplace .....

[REDACTED]

[REDACTED]

05 15 28 P Yes, I know it.

05 15 33 P Did you get it right-side up?

05 15 33 C Yeah, we're coming around slowly.

05 15 35 P Okay.

05 15 41 P I'll be going off COM here in a minute.

05 15 43 C Okay. Now just take it easy when you pull that thing over because you'll really back .....

05 15 45 C Easy, easy now.

05 15 49 C Okay. Now wait a minute. It's hooked onto something down there.

05 15 55 C It's hooked onto the junk. Okay, you got it.

05 15 59 C Okay, what's this thing right here?

05 16 02 C Gemini RCS scanner.

05 16 07 P That's probably been knocked off during the exercise.

05 16 14 P Okay. I'm ready to go off. I'll be off for just a couple of minutes.

05 17 04 C Hello there.

05 17 07 P I'm back on.

05 17 21 P I'm going to leave this thing open 'til I cool off.

05 17 23 C Let me help you.

05 17 26 C Cabin reading .....

05 17 33 P Yes.

05 17 35 P Okay. Would you undo the tether to the arm rest?

05 17 45 C Yes, you know that was a smart trick of ours, not going when the .....

05 17 50 P Yes it was, Jim.

05 17 52 P It might just have saved our cans.

05 17 59 P It's not so bad down there.

05 18 02 C Okay. We're coming right-side up again, I think.

05 18 07 P Let's try to get hold of somebody and tell them.

05 18 09 C I don't know what -- who we can get a hold of. Let me check.

05 18 11 P Who's knocking on the back there?

05 18 13 C Ha! ha! ha! Here, let's put this away.

[REDACTED]

[REDACTED]

05 18 16 P All right. Hand me ..... all right.

05 18 19 C Now let me hand you this stuff.

05 18 21 P You know, I know my camera was turning. I could feel it.

05 18 26 C I couldn't feel mine.

05 18 28 C I didn't turn it on until we pressurized and then I couldn't feel it.

05 18 32 P Okay. Would you look for the bag for that stuff.

05 18 35 C Yes, I got it.

05 18 43 C Lay it here.

05 18 47 C You get the flight plan out and see who we can talk to.

05 19 02 C 5:15

05 19 09 C Shoot! We don't talk to anybody until we get to Carnarvon at 5:35. Tananarive is .....

05 19 16 C Houston, do you read Gemini 4?

05 19 21 C Gemini 4, transmitting in the blind. We're back in. The cabin's resealed. We're all set and all safe.

05 19 38 C We're going to do a delayed time tape playback over Carnarvon.

05 19 40 P All right.

05 19 47 C At about 5:33, just about 13 minutes .....

05 19 49 P Right.

05 19 57 P We are starting to get cleaned up, Jim.

05 19 59 C Yes, we are. One thing, Ed. Just be slow, cautious and thorough.

05 20 04 P Roger. I'm slow .....

05 20 06 C I know you are. I'm amazed. I never thought I'd see the day you would be so slow.

05 20 21 P You know that was just - we rehearsed this so many times.

05 20 24 C Boy, it really paid off.

05 20 26 P It's paid! Big dividends!

05 20 27 C As a matter of fact, I think I'm going to tell Chris that on the radio.

[REDACTED]

[REDACTED]



[REDACTED]

05 20 32 P Don't alarm them.

05 20 33 C No, I'm just going to tell them some of that training just paid off. We could get the hatch closed.

05 20 40 P I tell you, the work I've done with those Crew Systems boys paid off.

05 20 45 P I knew this equipment pretty well.

05 20 50 C Yes. You knew how hard you could hit it without hurting it.

05 20 52 P Yes.

05 20 55 C Listen. I'd like to have you take it easy on your visor from now on, too.

05 20 57 P Yes, I did that just after we got in orbit.

05 21 08 C I tell you. The day side just isn't long enough for EVA. You know that?

05 21 11 P No. You have to go like gangbusters.

05 21 15 C Are we on RECORD now?

05 21 16 P Yes.

05 21 17 C Yes.

05 21 19 C Note that recorder. You just don't have time.

05 21 33 C That looks ..... on one ..... I'm going to go to.....

05 21 36 P Okay.

05 21 37 C How's our voltage doing?

05 21 40 P I checked them just before I went out. They were good. Controls 27. S-2 is 28. S-1 is 28. The main is 23. We're in good shape.

05 21 56 P I'm starting to cool off good, too.

05 21 58 C Okay.

05 22 40 C What are you going to do with your sleeves, Ed? You still want to take them off?

05 22 43 P I don't know. I could take them off and stick them above my feet.

05 22 47 C We'll worry about that later. That's not .....

05 22 49 P Yes. Let's not get encumbered any more.

05 22 59 C .....

05 23 30 P Did you ever get your seat safety pin in?

[REDACTED]

**[REDACTED]**

05 23 32 C No. I never even tried. I haven't done anything. I'm still all latched up.

05 23 38 C I've got my shoulder harness on, my lap belt on, my life vest on, my .....

05 23 53 P I had it in a hole there. What hole's it in? The hole's ..... Like shooting in the dark. Ah! There's the hole.

05 24 14 P You know, I looked down there. I thought I saw my D-ring sitting out. But I feel it now, it's in the housing.

05 24 19 C No, it never came out.

05 24 21 P I guess I was seeing some other strap. Man, I about ..... when I did that. I thought I'd ..... I didn't want to put my heel into it as I came in.

05 24 31 P Wonder what that strap was down there? Because I feel my box is all closed now. You didn't close it did you?

05 24 38 C No.

05 24 40 P Guess it was some other - there were an awful lot of lanyards floating around.

05 24 57 P You haven't gotten anybody, huh?

05 24 59 C No. We got about another 8 minutes yet.

05 25 03 P Coming up on Carnarvon?

05 25 04 C Carnarvon? Yes.

05 25 21 P I wonder if we ought to put our HF antenna out and see if that guy can call us?

05 25 24 C No, let's wait until we get to Carnarvon.

05 25 33 C Yes. Okay. Why don't we go ahead and do that? That might be a good idea.

05 25 35 P Yes, I think it is. HF antenna's coming out.

05 25 43 C I'll go to HF and give them a call.

05 25 54 P Eureka! I got it in.

05 26 39 C Gemini Net, Gemini Net. This is Gemini 4, Gemini 4 on HF. Does anyone read?

05 26 54 C Gemini Net, Gemini Net. This is Gemini 4, Gemini 4 on HF. Does anyone read?

05 27 14 P I think we are upside down, Jim.

**[REDACTED]**

05 27 15 C No we're not.

05 27 18 C I think we're right side up, Ed. The ball shows it.

05 27 26 P No, we're all right. I'm sorry.

05 27 27 C Yes.

05 27 28 P The mirror was covering up part of it.

05 27 33 C Gemini Net, Gemini Net, Gemini 4 on HF. Does anyone read on HF?

05 27 41 C You know this Hasselblad magazine that has the EVA on it?

05 27 46 P Yes.

05 27 47 C On the .....

05 27 48 P Right.

05 27 49 C .....

CARNARVON

05 32 04 CC Gemini 4, Carnarvon CAP COM.

05 32 15 C Hello Carnarvon, how do you read?

05 32 17 CC Loud and clear. How me? Over.

05 32 21 CC Gemini 4, Carnarvon. Read you loud and clear. How me. Over.

05 32 24 C Hello Carnarvon, Gemini 4.

05 32 28 CC Gemini 4, Gemini 4, Carnarvon. Read you loud and clear.

05 32 35 CC Gemini 4, Carnarvon CAP COM.

05 32 41 C Hello Carnarvon, hello Carnarvon, Gemini 4.

05 32 45 CC Gemini 4, Carnarvon CAP COM.

05 32 47 C Carnarvon, Gemini 4. How do you read me?

05 32 49 CC I read you loud and clear. How me? Over.

05 32 51 C Loud and clear. It's nice to have someone to talk to again.

05 32 54 CC Roger. It's good to hear you. How are things going?

[REDACTED]

05 32 56 C Okay. We are back inside the spacecraft. We are repressurized to 5 psi. We are not, I say again, we are not going to depressurize the spacecraft again.

05 33 05 CC Roger. Understand. How are you feeling?

05 33 07 C Say again.

05 33 09 CC How are you feeling?

05 33 11 C Everybody's fine. Feeling great.

05 33 14 CC Roger. Can you give me battery readouts please.

05 33 19 C Battery readouts coming up.

05 33 21 CC Roger.

05 33 27 C Before I give the battery readout, do you want me to stay powered up, or do you want me to start powering down?

05 33 33 CC Negative. I would like you to keep the power on your computer on until I update your time and load and then we will power you down.

05 33 39 C Okay, I'm going to bring the computer on the line now. It's not on.

05 33 43 CC That's affirmative. I was just going to ask you to do that.

05 33 48 CC If your platform is off, you can leave it off.

05 33 50 P .....A is 6 and 1/2, 1A is 24 volts.

05 33 55 CC Say it again, please.

05 33 58 P Roger. 1A and 1B are 6 and 1/2 volts, rather than that's amps, and 24 volts.

05 34 06 CC Go ahead.

05 34 09 C 1C is 7 amps and 24 volts.

05 34 11 CC Roger.

05 34 14 C 2A is 7 1/2 and 24.

05 34 18 CC Roger.

05 34 20 C 2B is 6 1/2 and 24.

05 34 22 CC Roger.

05 34 24 C 2C is 6 1/2 and 24. And they look good. RGS A and B are both holding up fine.

[REDACTED]

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05 34 30 CC Roger. Welre going to give you a GO for 6-4. I'll update a 4-4 load for you with maneuver and 6-4 without maneuver time.

05 34 39 C Stand by one, please.

05 34 41 CC Roger.

05 34 58 C Carnarvon, while we are waiting for that we got all this equipment in the spacecraft right now and we are trying to get it stowed away in some reasonable pattern.

05 35 06 CC Okay, I understand. I am going to update your command load first and then we will copy the times when you are ready.

05 35 10 P We are ready right now.

05 35 12 CC Okay. Transmitting a TR.

05 35 16 P Got it.

05 35 17 CC Roger. Got it in.

05 35 20 CC And you got a valid 4-4 load without ..... maneuver load.

05 35 25 P Understand we're good for 4-4.

05 35 27 CC Roger. Okay. We are ready to copy your times.

05 35 30 P Ready to go.

05 35 31 CC 4-4: 153. 3+18. 21 08 57. 3+00. 8+43.

05 36 00 P Roger. Reading back area 4-4: 153. 3+18. 21 08 57. 3+00. 8+43.

05 36 09 CC Affirmative. This will be done in the following manner. The burn, 110 aft, 43 forward.

05 36 22 P Roger. 110 aft, 43 forward.

05 36 26 CC Roger. You can power down your platform and computer at this time.

05 36 30 P Roger. Clear to power down.

05 36 32 CC Okay. You can turn your Quantity Read Switch to OFF.

05 36 37 P Quantity's OFF.

05 36 38 CC Roger.

05 36 46 C We're going to power down our rate gyros and some of the other things at this time also.

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**[REDACTED]**

05 36 51 CC Roger. Do you want to copy down some 6-4 times?  
 05 36 53 P Stand by. Ready - go ahead.  
 05 36 58 CC 6-4: 00.00. 01. 00 08 54. 8+12. 16+19.  
 That's it.  
 05 37 28 P Roger. Will you read back the Greenwich Mean Time  
 and retro command on 6-4? I got the  $\Delta V$  00,  $\Delta T$  00.  
 8+12. 16+19. And I didn't copy on the retro time.  
 05 37 44 CC Roger. That is 01 days 00 08 54.  
 05 37 52 P Roger. Understand 00 08 54. Got it.  
 05 37 58 P Roger.  
 05 38 00 CC Okay, we've set your adapter C-band beacon to  
 COMMAND.  
 05 38 03 C Roger. We'll set it to COMMAND.  
 05 38 05 CC Okay. I'm going to cut it off.  
 05 38 12 C Carnarvon, this is Gemini 4. It looks like our  
 booster is still out there flashing away.  
 05 38 16 CC Roger. How far do you think it is?  
 05 38 19 C I really can't tell. It looks like it is about  
 5 or 6 miles perpendicular to our Flight Plan.  
 Maybe it's more than that. It could be as far out  
 as 20 miles perpendicular to it.  
 05 38 32 CC Roger. Is your Adapter C-band in COMMAND now?  
 05 38 34 C Roger. It is.  
 05 38 40 CC Okay, looks like I'm unable to turn it off.

(Missing CSQ Pass)

HAWAII

05 58 57 CC Gemini 4, Hawaii CAP COM.  
 05 59 04 CC Gemini 4, Hawaii CAP COM. Do you copy?  
 05 59 11 CC Gemini 4, Hawaii CAP COM. Do you copy?  
 05 59 20 CC Gemini 4, Hawaii CAP COM. Do you copy?  
 05 59 27 CC Gemini 4 on UHF. Do you read?

**[REDACTED]**

[REDACTED]

00 19 29 P While I was outside I noticed on Jim's window -  
he's got a coating on the outside of it. One time  
when I brushed up against it with either my shoulder  
or my arm it actually smeared right over on it, and  
it smeared the upper part of his windshield so that  
he couldn't see out. When I look out from this side,  
I can see that it is rather heavily coated with some  
type of material. When I was outside looking in, it  
looked like a - it looked like almost a greasy film  
on the outside of it. My window doesn't seem to have  
as much on it. When we have the sun on it.....

05 59 37 CC Gemini 4, Hawaii CAP COM on UHF. Do you read?

06 00 04 CC Gemini 4, Hawaii CAP COM. Do you copy?

06 00 08 C This is Gemini 4. Go ahead.

06 00 08 CC Roger. Would you position your real time T/M  
switch to the COMMAND position?

06 00 18 C Say again.

06 00 20 CC Would you position your real time T/M switch to the  
COMMAND position?

06 00 24 C Roger. Our T/M switch is in REAL TIME and ACQ -  
is in COMMAND position.

06 00 29 CC Roger. Under<sup>st</sup>and in COMMAND position. Also would  
like to know what time you closed the hatch.

06 00 45 C Stand by.

06 00 57 C Stand by a moment. We'll try to figure it out for  
you.

06 01 00 C Just a second, Ed.

06 01 04 C This is Gemini.

06 02 14 C This is Gemini 4. Who was calling me before?

06 02 17 CC This is Hawaii, Gemini 4.

06 02 38 CC Gemini 4, Hawaii CAP COM.

06 02 49 CC Gemini 4, Hawaii CAP COM. Do you copy?

06 03 18 CC Gemini 4, Hawaii CAP COM. If you copy, all systems  
on the ground look good.

[REDACTED]

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06 07 14

P

It looks like in our power-down configuration now we're still pulling just a little less than 11 g's. We've got 10 g's on 1 and a little less than 11 g's on 2. The tether - the location of the tether or the umbilical restraint on the outside hatch made it rather difficult to do any EVA work as far as free-tether aerodynamics out in front of the spacecraft. Whenever I'd be operating out in that area, the tether would - when it would come to its end would start me back and the reaction would carry me back up towards the - over the spacecraft and back toward the adapter section. That's why I kept going out of sight during my maneuvering out there up above the windows, and then drifting back toward the back of the spacecraft. I continually had to keep pulling myself to get out in the front part of the spacecraft. I wasn't satisfied with the pictures that I was getting. It was rather difficult to keep any of the lanyards that I had on ..... I had the lanyard on the gun and the tether and umbilical that I was on, and several other miscellaneous type lanyards flailing around and it was difficult to keep them from in front of the camera. You'll notice that perhaps in the pictures that I'll be moving my arms rapidly. I kept trying to move them out of the way so that I could take a picture. I'd say they were in front of me probably about 50 or 60 percent of the time, and the other percent of the time I was not in as good a position as I would like to be. I think I probably took in the neighborhood of a dozen pictures. It does seem quite easy to operate, even just with the tether out there. I felt no tendency to bang into the spacecraft. I was able to approach the spacecraft just about from any attitude I came back in - and sometimes when I was coming .....

06 07 32 CC

Gemini 4, Houston CAP COM. Over.

06 07 43 C

Go ahead, this is Gemini 4.

06 07 45 CC

Gemini 4, this is Houston CAP COM. We would like to get a Medical Data Pass, Type 1, on the Pilot at an elapsed time of 6 hours and 12 minutes. That'll be over Texas. That will be about 21 28 00 Z. He can set up his oral temperature, and we'll give you a call when we have a read-out on it.

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GUAYMAS

06 08 46 CC Gemini 4, Guaymas CAP COM.  
06 08 42 CC Gemini 4, Guaymas CAP COM.  
06 09 00 CC Gemini 4, Gemini 4, Guaymas CAP COM.  
06 09 16 CC Gemini 4, Guaymas CAP COM.  
06 09 19 C Go ahead, Guaymas - Gemini 4.  
06 09 21 CC Roger. The Cape would like to get a Medical Data Pass One on the Pilot. Recommend he inserts the oral temperature right now, so we can get a read-out over at the Cape.  
06 09 32 C Roger, he is inserting the oral temperature probe at this time.  
06 09 37 CC Roger. We are planning a dump over Texas. Request you assume a heads-up attitude.  
06 09 42 C Roger. We are assuming a heads-up attitude. Be advised we do not have the exerciser out; we will not be able to give you the Type 1.  
06 09 54 CC Roger. Understand.  
06 10 03 CC Gemini 4, Guaymas. Are you ready for your HF check?  
06 10 07 C Roger. We are ready for the HF check.  
06 10 12 CC Roger. Meet me on HF.  
06 10 13 C Roger.  
06 10 17 CC Gemini 4, Guaymas CAP COM on HF.  
06 10 30 C Guaymas, Gemini 4 on HF.  
06 10 32 CC Roger. I read you weak but clear. Give me a short count.  
06 10 36 C I read you garbled. 1,2,3,4,5. 5,4,3,2,1.  
06 10 43 CC Roger. Back on UHF.  
06 10 45 C Roger. How did you read me?  
06 10 56 C ..... alerting someone, anyone, on HF to let them know that we got back in, but I got no response at all.  
06 11 04 CC Say again.

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**[REDACTED]**

06 11 06 C I say after we get back in the spacecraft I tried to call on HF to alert someone that we were back in, but I received no response.

06 11 16 CC Roger. I'll pass that along.

06 11 41 CC All systems are GO on the ground here.

06 11 44 C Affirmative. GO.

06 12 16 CC Gemini 4, Houston CAP COM. Over.

06 12 25 CC Gemini 4, Houston CAP COM. Over.

06 12 31 CC Gemini 4, Houston CAP COM. Over.

06 12 44 CC Gemini 4, this is Houston CAP COM. Over.

06 13 03 CC Gemini 4, Houston CAP COM. Over.

06 13 14 CC Gemini 4, this is Houston CAP COM. If you read, we have the oral temperature. The Pilot can remove the probe.

06 13 20 C Roger, will do.

06 13 22 CC Okay, I'm reading you now. I have an onboard map update for you. The ascending node is 132° East. G.m.t. of the node is 21 39 00.

06 13 39 C Roger. Say again the longitude of the ascending node.

06 13 43 CC Roger. It's 132° East.

06 13 50 C Roger. 132° East and 21 39 00.

06 13 55 CC That's affirmative and would you put your ECS O<sub>2</sub> switch to OFF.

06 14 05 C Which ECS O<sub>2</sub> switch to OFF?

06 14 10 CC All right, that's the heater switch. Your waste valve Off. Your EVA bottle empty and ZIP GUN empty.

06 14 22 C Say again Houston CAP COM. You're difficult to read.

06 14 25 CC We want your waste valve off, and empty the EVA bottle.

06 14 37 C Roger.

06 14 38 CC Okay. If you don't have anything I'm going to turn you over to SIR JOHN for this Medical Data One, as much as we can get.

**[REDACTED]**



06 14 54 C SIR JOHN, Gemini 4.

06 14 56 CC Okay, we'll turn you over to SIR JOHN, Gemini 4.

06 15 00 S Okay. Ed, we understand that you do not have the exerciser out, so would you go ahead and pump up the cuff, and we'll do without the exerciser. We'll get a single blood pressure.

06 15 13 P Roger, Ed. I'll be pumping it up again.....

06 15 18 S All right.

06 15 41 S Ed, we don't see any cuff response yet.

06 15 46 P I pumped it all the way up.

06 15 49 S Does it feel firm to you?

06 15 51 P Yes, quite firm. I'm .....

06 15 56 S Okay, let her bleed, Ed.

06 15 59 P Roger, and we'll pass it on to you now. I've had about 12 swallows of water and I think Jim probably had 10. Also, we haven't eaten anything yet and we're awfully hungry.

06 16 16 S Real great. Listen Ed, we want to modify the Flight Plan and we would like to have the sleep period changed here and let you get some rest. We'd like to have you go for at least 4 hours right now and it's perfectly agreeable with Chris if we go ahead and have Jim sleep some of this period, too if he gets sleepy during that period. It's agreeable to Chris.

06 16 45 P Understand you'd like me to go to sleep for a little while.

06 16 49 S Roger. We'd like for you to go to sleep. For 4 hours, anyway.

06 16 54 P I'm not too sleepy; however, I'll.....

06 16 59 S Okay, let's give it a try. Could I confirm one thing with you too, Ed? When you were EVA, we got a transmission that there was no disorientation, and that was affirmative for the entire time. Is that correct?



~~CONFIDENTIAL~~

06 17 14 P There was no disorientation whatsoever. I felt that I could either look down at the ground - I felt perfectly at home looking down at it - and I could roll around on my back and look up and it was not disorienting me in any way. The spacecraft was my best reference. Any time I saw it I immediately had a good reference and, in fact at times near the end I was using my tether and actually walking up and down on the surface of the spacecraft, using it to hold me down, as somewhat of an anchor.

06 17 48 S Oh, that sounds terrific. Wonderful.

06 17 52 P There just isn't any disorientation whatsoever.

06 17 53 S Let's go on that sleep period. If Jim has no arguments about that, that's the end of the transmission here then.

06 18 24 CC This is Cape. Go ahead 4.

06 18 26 CC Go ahead 4.

06 18 30 CC Gemini 4, Houston CAP COM.

06 18 37 C Houston CAP COM. Gemini 4.

06 18 39 CC Go ahead, Gemini 4.

06 18 41 C I would like a little flight information here.....

06 18 43 CC Roger.

06 18 44 C Just what the plan is now with the fuel remaining, or how are we going to handle the fuel?

06 18 52 CC As best as I can tell you right now, you'll be able to accomplish practically all of the Flight Plan with the fuel that you have remaining at this time. We'll keep updating you in real time. Right now we want you to get some sleep. As far as your Apollo D-9 goes, it looks like you're going to be too far from the booster.

06 19 10 C Okay, if Ed sleeps, and if I see it, I'll go ahead and use the sextant.

06 19 15 CC Right. If you do see it, you might unstow the sextant, but I wouldn't recommend you unstow it before you see it because it looks like you are going to be plenty far from it.

06 19 22 C Okay, now I saw it on the last orbit so maybe I'll see it on the next one.

06 19 28 CC Gemini 4, from Cape.

~~CONFIDENTIAL~~

[REDACTED]

06 19 30 C Go ahead Cape.

06 19 31 CC Looks like we won one after all.

06 19 33 C Ha! Ha!

06 19 41 CC Gemini 4, from Houston Flight.

06 19 45 C Go ahead Houston Flight, Gemini 4.

06 19 47 CC Give us about a day to find the true anomaly, Jim, to see whether we can really do any of these OAMS retros. For instance 6-4, we didn't have enough fuel so there wouldn't have been any argument.

06 19 58 C Okay, I'll go ahead and proceed with the Flight Plan as we've got it now. Is that correct?

06 20 03 CC Affirmative.

06 20 05 C Thank you.

06 20 10 C We had a couple of pretty exciting moments there, Chris.

06 20 12 CC Right.

06 22 41 CC Gemini 4.

06 22 53 CC Gemini 4, Houston CAP COM. Over.

06 23 07 CC Gemini 4, Houston CAP COM. Over.

06 23 18 CC Gemini 4, Houston CAP COM. Over.

06 23 24 P Go ahead, Gemini 4.

06 23 26 CC We want to verify if you're off the long umbilical and back on your normal suit circuit.

06 23 32 P That's affirmative. We've been off the long umbilical for some time. At that time we went off the umbilical onto the suit ECS circuit.

06 23 45 CC Roger. Have a good nap.

06 23 47 P Roger.

06 23 55 C Houston CAP COM, this is Gemini 4.

06 24 04 C Houston CAP COM, Gemini 4.

06 24 05 CC Go ahead Gemini 4.

06 24 07 C I never did understand what ECS O<sub>2</sub> switch you wanted me to turn off.

06 24 12 CC Roger. It's the ECS O<sub>2</sub> heater switch. Heater switch.

[REDACTED]

~~CONFIDENTIAL~~

06 24 17 C How come you want that off?

06 24 23 CC ..... says we won't need it anymore. The pressure will sustain itself.

06 24 27 C Okay, fine. We're still up about 42 percent.

06 24 28 CC Roger, you're reading 42 percent.

06 34 35 C It's now 6:35 elapsed, and I'm powering down the spacecraft completely. We had turned off the platform and the computer earlier after checking with ground and completing our EVA. I'm powering down the rest of it at this time.

06 36 47 P I'm turning Biomed Recorder no. 1 off at this time. This is a change from the Flight Plan due to the different sleeping arrangements.

06 37 27 P Okay, Blackie.

06 37 29 C Ha! Ha! Ha! What are we going to do with all this stuff?

06 37 32 P I don't know.

06 37 40 C .....ES sensor.....?

06 37 44 P Yep. Let's turn it off, too.

06 37 47 C Let's turn it off.

06 37 49 P The ES sensor is coming off at this time.

06 38 06 P I think we ought to make a big effort to get a full meal at this time, Jim.

06 38 11 C I think so. I'm about starved to death.

06 38 14 P Ha! Ha! Bacon and egg bites.

06 38 18 C Oh?

06 38 19 P Yes. Ha! Ha! Ha!

06 38 23 C For me, too?

06 38 24 P Ha! Ha! Ha! Yes.

06 38 27 C .....

06 38 29 P Can you keep all that stuff on.....?

06 38 44 P I swear, I get the feeling I'm standing on my head here.

06 38 50 C Yes, me too.

06 38 54 P Maybe it's because you're always touching the ceiling.

~~CONFIDENTIAL~~

[REDACTED]

06 38 56 C Yes.

06 39 05 P Good boy! You putting some log data in?

06 39 07 C Yes.

06 39 08 P Back up that tape?

06 41 04 C Continuing what I was debriefing about the booster, early in the flight. After we entered the darkness, at what I consider to be a distance of 1200 feet, I tried station-keeping with it, but the only thing I had to judge my distance from the booster at that time was the distance between the flashing lights. Occasionally they would - not occasionally, but continually, I would see one light, then two lights, and then one light, and then sometimes there'd be a long time before I'd see two lights - indicating that the booster was rotating all the time. I really didn't have too much of a clue as to which way it was going. Based on the distance between the lights, when I could see both of them, I felt that I was in a real good position with it until we got to about Carnarvon. At that time I seemed to be closing rather rapidly, although I couldn't really be sure of this. All the  $\Delta V$  I'd added up to that time had been in the direction of the booster, or retrograde. Unfortunately, the darned booster would get in position such that if I were going to close on it, I would have to apply a prograde to close, which then, in turn, caused me to once again depart from it after a period of time had gone by. Then with the 45 - 40 minutes of darkness, I really had a difficult time telling where I was. As we came out of the darkness, the booster was below me and pulling away from me quite rapidly. Ed, how far away below us do you think it was?

06 43 01 P Oh, I don't know. I'd estimate it was probably out there a mile and a half or two.

06 43 06 C Yes.

06 43 06 P It's very difficult to estimate when it gets to be that far.

06 43 08 C It certainly was. I sort of felt that it was probably between one and two miles, and I couldn't really tell how far out.

[REDACTED]

[REDACTED]

06 43 18

C

Definitely below me. I'd been tracking it below me from about Carnarvon on. Up until about Carnarvon we had it below us, and then up to the horizon, and then down below us again. It almost looked like it was in a different orbit than I was. It had a different apogee and perigee than what I did. Anyway, I attempted to close with it at daylight as soon as I could tell where it was. As I said, at that time it was a mile or two out in front of me - down below me. So, the more I tried to close, the less I really gained on it. I was firing retrograde. I was using my top thrusters to fire in such a manner as to decrease my total velocity, and then firing ..... at the same time. I never really closed, and it continued to pull away from me. It became obvious to me that by the time we got to Hawaii that to close on the booster in time to do the EVA with the booster would probably take all the fuel we had onboard. In the ground rule we had agreed not to do this. So I checked with CAP COM and we decided to not go ahead with the booster portion of the mission. I don't know if I mentioned it, but when we separated from the booster, it seemed like our rates on the booster were low, on the order of a half a degree a second in pitch and yaw. I tried to damp these. I fired one impulse in each direction, and then I concentrated on coming off the booster. We came off, and we came off in the manner in which we generated some other rates. We came right-side-up, eventually, and turned around. Probably about a minute and a half or two minutes. It looked like the big problem was the time I took out to semi-align the platform before we went into the dark side. We'd probably gotten right on top of the booster instantaneously. If I'd ignored the platform we would have been able to go ahead and complete it. On the other hand, I wanted to make sure we had a reasonably good alignment prior to getting to our 2-1 GO-NO GO point in case anything went wrong.

06 46 04

C

What's that? Gum?

06 46 06

P

Yes.

[REDACTED]



[REDACTED]

06 46 02 C As the booster departed us, you could see the fuel spraying out of the roll nozzle. As the booster tumbled around, mostly in a plane that would be perpendicular to a line through the major axis of the spacecraft to the booster, you could see the long flowing tail that came out of it. I'm going to draw a short little picture of that on my flight plan. There was debris all over at spacecraft separation. We turned around and there were things all over the place. As a matter of fact, until we really got a good look at the booster, I really couldn't tell what was what. Fairings came off right at fairing jet with no problem. The horizon scanner fairings looked like they came off intact but I couldn't really tell because it disappeared out of sight so fast. I didn't see the nose fairing come off at all.

06 47 36 C I never did get an accelerometer bias to check on the platform. I was thrusting most of the time there, and unable to really settle the thing down for any length of time. We skipped a couple tape dumps I guess, because of the peculiar attitude that we were in. I could not contact Carnarvon very well on the first pass. It's a shame we didn't have a camera out right when we separated because .....

06 48 33 P Boy! That was beautiful.

06 48 40 C Nice. What? g?

06 48 42 P No. That first view of that booster.

06 48 43 C Oh yes. That was really nice, wasn't it?

06 48 45 P That was beautiful.

06 48 46 C That was really nice all right.

06 48 50 C Just the way it should have been.

06 48 51 P Just exactly!

06 48 52 C How far out do you think we were when we first saw it? I think we must have been at least 500 feet out when we first got around.

06 48 57 P Oh, we were closer than that.

06 48 58 C Do you think so?

06 48 59 P Oh yes. I'd say we were in the neighborhood of.....

06 49 02 C Remember, it's only .....

[REDACTED]

~~CONFIDENTIAL~~

06 49 04 C It's 130 feet long - the whole thing, I mean. Just as a reference, from the pad to our spacecraft was only about 130 feet long.

06 49 13 P Yes.

06 49 14 C Okay.

06 49 18 P I'd estimate we were out about a little over 200 feet.

06 49 20 C Think so?

06 49 21 P Yes.

06 49 22 C Okay, I would estimate .....

06 49 22 P Boy, it was sitting right out there!

06 49 23 C ..... between five and six hundred feet, but certainly close enough where you could see it in all its clarity.

06 49 28 P Going away and the tumbling was starting.

06 49 30 C Right. It didn't take long for that tumbling to get going.

06 49 35 P Interesting thing, though. The tumbling, really, as I could see, never appreciably picked up. It stayed there. It started out.....

06 49 42 C You know what it looked like to me?

06 49 44 P What?

06 49 45 C It looked like it was tumbling in an oscillatory manner. It would tumble for a while and then it looked like, as it burped or the fuel came out or something, it would change its orientation and pull over in another way.

06 49 56 P Yes, but it never seemed to go .....

06 49 59 C The rates..... Yes, the total rate never really seemed to pick up good in whatever it was. What was it? Eight seconds/rev?

06 50 05 P Eight seconds/revolution. I timed them.

06 50 06 C Okay. Let me write that down so we don't forget it.

06 50 10 C Starting over the United States, actually Ed started unstowing things just as soon as we got into orbit. I think that we could unstow without jeopardizing the possibility of a safe 2-1 reentry.

~~CONFIDENTIAL~~

[REDACTED]

06 51 01 P What's that down there below us? Over there.

06 51 06 C Looks like a city or something.

06 51 11 P Are we upside-down?

06 51 13 C I think we're pointing right down at the ground.

06 51 18 C Ed started on unstowing stuff and as soon as we got to the position where it became no longer feasible to fool with the booster, I started full-time helping him - at least holding the things and stowing them away and trying to keep them from disappearing. The faster we worked the farther behind we got. Not because we weren't putting things the way they were supposed to, it just took a lot longer than we had anticipated. It really wasn't much easier at zero g than it was in the simulator, if as easy. So we worked all the way around. By the time we got to Carnarvon, I had made up my mind that we couldn't make it, but I thought we'd forge on a little longer. By the time we got to - or just before we even left Carnarvon it was clear to me that we could not make the depressurization. I called for a slip to the next orbit. We then.... caught our breath for about 20 minutes and tried to sort out the junk I had laying around in the cockpit. Then I got the checklist out and we went through the checklist again in detail to make sure that we hadn't skipped anything in the rush. Started the extravehicular - got the GO over Carnarvon. We were all set to go and we were standing by for the GO to start depressurizing. We got it. Went through the depressurization cycle. As we left Carnarvon, we were cleared for the full EVA. We got to Canton or Hawaii, and at that time were given - I believe it was Canton or Hawaii that gave us the GO to actually exit the spacecraft and start the extravehicular maneuvers. We accomplished this as indicated on our tape recorder that we recorded before and on the VOX position. We went ahead and Ed got out and we started to take pictures as we - how we would....I initially held the spacecraft fixed for him. Then as he got out and seemed to be floating around in such a manner that I couldn't track him - initially, we decided that it was better to let the thing drift. Is that right?

06 54 23 P That's right.

[REDACTED]

**[REDACTED]**

06 54 25 C He was having difficulty maintaining his orientation, and it looked to me from then on he oriented off the spacecraft without regard to which direction it was pointing. He could actually impart quite high rates to it, as high as 2° per second. I intended to keep them below that level. As he got back into the spacecraft, we had a considerable amount of difficulty with the hatch. First we lifted the ratchet portion of the hatch to engage. After we got that engaged, we couldn't get the hatch down closed far enough. Actually, we started pulling down on the locking handles to get the dogs out. So, we had a rather exciting time and I think it was on tape, wasn't it Ed? I had the tape recorder on, I believe.

06 55 24 P The tape recorder was on, but the red light lit there sometime. I don't know.

06 55 26 C Okay. So it may be on tape and it may not. It went on for - I think we were 44 minutes after we started EVA. I was looking at my event timer which I had started when Ed exited the spacecraft. At 44 minutes we still didn't have the hatch closed. We were trying to take things calm, cool, and collected so we didn't get things all screwed up. And finally, by my pulling as hard as I could to get the hatch closing device, and Ed pulling down as best as he could, we were able to force him down into the seat and get the hatch closed fully. Ed seemed to be up much higher today than he had been in any of our zero-g EVA in the airplane.

06 56 13 P Jim. I don't think it was the.....

06 56 17 C Go ahead. Say what you said.

06 56 20 P Yes. I don't believe we were actually having difficulty with the head clearance. I felt like I had plenty of head clearance and I could actually ..... down and manipulate the dogs. We just seemed to have a little more effort in closing than we had ever experienced before and.....

06 56 40 C It was difficult to swing shut because of all the washers that we have in the pyro lines.

**[REDACTED]**

~~CONFIDENTIAL~~

- 06 56 00 P Right. I was having to actually manipulate the main dog on the hatch each time that I stroked it, so that I wasn't able to pull as hard as I usually had been able to. So we had to coordinate ourselves and when I would stroke down on it, Jim would - I would instruct him to pull hard at that time and I know he was. In that manner we were able to get it started. Once these dogs started dogging down I had no trouble with the gain anymore, but I had to actually engage the gain as we had been instructed on the first several strokes to get it started down.
- 06 57 30 C One thing that I don't know if we got on tape before, but both Ed and I mentioned that we were quite thankful for all the training that we'd done in the altitude chamber, in the zero-g airplane, and the crew procedures trainer there at Houston.
- 06 57 43 P You're not kidding! I'll second that. The things that occurred were not things that we hadn't done before and things that we hadn't worked out procedures for before. The things that we did, I think, paid very heavy dividends today. I was very thankful for all the training that we had and the work the people had done with us.
- 06 58 01 C Yes. I was thankful that we didn't have to make a reentry with the hatch open.
- 06 58 06 P And another thing, I was glad Jim had been working with the dumbbells a little bit to build up those muscles.
- 07 00 46 P On the books, I think we want to be sure we put a little more care into the kind of rings we use. We've had difficulty in opening two or three different times now, and also pages are tearing out so that they are not staying in the book. We ought to look into some kind of reinforcement for the holes, where the rings attach. On the water gun, the little teat that sticks out the end of it to allow the water to flow out sticks in the OUT position, just like it did on the simulator, and allows water to flow after you take the trigger off. You have to, actually, from time to time reseal it back up in there to keep the water from flowing out of the capsule when you pull the gun out of the food package. Another thing, on the drinking hose, it's very easy to turn the hose in such an angle when you're drinking from it to keep the water from flowing through the hose. Actually, you crimp the hose right at the end, right where the rubber attaches to the drinking nozzle gun.
- ~~CONFIDENTIAL~~

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QUANTAL GEMINI CHECKS

07 22 49 CC Gemini ., CSQ.

07 22 57 CC Gemini ., CSQ. Turn your computer on for 18-1 update.

07 22 59 CC Gemini, CSQ. If you monitor, turn your computer on for 18-1 update.

07 23 05 C Roger. Gemini - here. Read you loud and clear, CSQ. Want my computer on?

07 23 09 CC .....

07 23 19 C CSQ, Gemini ., How do you read?

07 23 21 CC Roger. Read you loud and clear. Turn computer on.

07 23 25 C I've got my computer on. I don't have the running light on yet.

07 23 27 CC Roger.

07 23 29 C Come right-side up for this lead?

07 23 32 CC Say again.

07 23 33 C I say I'm upside down. Should I come right-side up here?

07 23 41 CC Roger. You should be heads-up. We've got tape dump, also.

07 23 45 C Okay.

07 23 47 CC And also get your Quantity Read Switch for about 15 seconds.

07 24 03 CC What is your status for 18-1?

07 24 06 C 18-1 is fine. We've got both RCS rings, two left secondary O<sub>2</sub> bottles.

07 24 14 CC Roger. Are you going to Main batteries?

07 24 17 C Roger. Stand by one.

07 24 31 CC We have you GO on the ground here. Have you unstowed your bungee cord?

07 24 39 C We just got it out now. We just tried to get all of our stuff unstowed, and we're not really prepared to do an Aero-Med Pass if we have to.

07 24 45 C .....we're getting squared away here. We're not really prepared to do an Aero-Med Pass unless we have to.

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[REDACTED]

07 24 00 CC Okay. And we did not get a valid oral temp AOC  
anyway, so will scrub you up Aero-Med Pass.

07 24 05 C We've got a major housekeeping problem here with  
all this equipment onboard that we'd expected to  
get rid of.

07 24 08 CC Roger. Can you give us a blood pressure?

07 24 09 P The main batteries are reading 9 amps and 23 volts.

07 24 09 C All the main batteries are reading 9 amps and  
23 volts, and the Pilot still has his blood pressure  
bulb in. Do you want one from him?

07 24 16 CC Negative, just the Command Pilot.

07 24 18 C Okay. Just a second and I'll give you one.

07 25 27 P Do you want our adapter readings? Gemini 4.

07 25 30 CC Roger, go ahead.

07 25 33 P Roger. 1A is 3-24, 1D is 3 1/2 and 24, 1C is  
3 1/2 and 24 1/2; 2A is 2 1/2 and 25, 2D is 2 1/2  
and 25, and 2C is 2 1/2 and 25.

07 25 56 CC Roger. I copied them all.

07 26 01 CC Roger. We got a good blood pressure, also.

07 26 07 CC I've updated your TR clock with the 18-1 time; it's  
in and valid.

07 26 11 C Stand by one. I didn't get my computer on.

07 26 18 C We have to get the .....

07 26 27 CC Turn off the .....

07 26 37 C Roger, CSQ. This is Gemini 4. Give me another  
update. I didn't have my computer all the way on.

07 26 51 CC Have you got a running light now?

07 26 57 C Running light now. Roger.

07 26 58 CC Roger. Transmitting Gemini load.

07 26 06 C Okay. We didn't get the DCS light. We're still not  
right-side up yet.

07 27 13 CC Roger. I got indications when I transmitted the  
18-1 TR time that it did not go in valid.

07 27 19 C Okay. We didn't get the DCS light.

07 27 23 CC Okay. Then you did not get the 6-4 load. The 18-1  
GMTRC if you are prepared to copy.

[REDACTED]

~~CONFIDENTIAL~~

07 27 55 C Stand by.  
07 28 01 CC Gemini 4, CSQ. Turn your Quantity Control Switch to OFF.  
07 28 01 C It's off.  
07 28 06 CC Roger.  
07 28 09 CC ..... 17 56 03. This is without OAMS. 7+47, 15+36.  
07 28 24 P Your first part was blocked out. Start over, please.  
07 28 27 CC Roger. 18-1 without OAMS: 17 56 03. 7+47. 15+36.  
07 28 41 P You were blocked out part way. Would you try again, please?  
07 28 45 CC Roger. GMTRC 17 56 03. 7+47. 15+36.  
07 29 01 C CSQ, Gemini 4. You're cutting out in the middle of your transmissions. We're receiving the first numbers and the last numbers, but not the middle.  
07 29 09 CC Roger. You got the GMTRC then. We'll get this up to you later.

HAWAII

07 33 31 CC Gemini 4, Hawaii CAP COM. Standing by. We have you GO on the ground. Do you copy, Gemini 4?  
07 34 20 CC Gemini 4, Hawaii CAP COM.  
07 34 22 C Hawaii, Gemini 4.  
07 34 24 CC Roger. We have your T/M solid. Hawaii standing by.  
07 34 28 C For your information we're perfectly upside-down. I guess maybe, you pick up T/M even when I'm not right-side up.  
07 34 33 CC Roger. I just sent your T/M command, real time on, and got it in. We're receiving your T/M very well.  
07 34 42 C ..... CSQ, back on the computer. We never got a DCS light anyway.  
07 34 50 CC Roger.  
07 34 52 C We got a DCS light the first time, but I didn't have the IGS power on. And the second time, we didn't get the DCS light.  
07 35 13 CC You look very good on the ground, Gemini 4.

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[REDACTED]

07 30 17 C Say again.  
07 30 18 CC You look very good on the ground.  
07 30 21 C We look good on the ground?  
07 30 22 CC Affirmative. You look good on the ground.  
07 30 24 C Okay, we've got everything going fine for us up here, except for all this junk we have inside.  
07 30 28 CC Roger, I understand.  
07 30 31 C Be advised Ed is going to start trying to go to sleep at this time.  
07 30 34 CC Roger.  
07 30 40 P Bacon and egg bites, toast and orange juice, and I'm about to go to sleep.  
07 30 45 CC Roger from Hawaii.  
07 36 03 CC Gemini 4, Hawaii.  
07 36 08 CC Gemini 4, Hawaii.  
07 36 30 C This is Gemini 4. Be advised that I just got a DCS update.  
07 36 35 CC Roger. I just sent a T<sub>X</sub>.  
(Cal remotes)  
07 41 54 CC Gemini 4, Houston CAP COM. Over.  
07 41 58 CC Gemini 4, I'm reading you weak. I have a new 6-4 without OAMS update for you. It's 01 days, 00 09 30, 8+18. 16+10. Over.  
07 42 25 C .....  
07 42 36 CC 16+10.  
07 42 53 CC Gemini 4, this is Houston. Did you copy that 16+10?  
07 43 07 CC Gemini 4, this is Houston. I say again, reverse bank to 16+10.  
07 43 48 CC Gemini 4, this is Houston CAP COM. Over.  
(GYM remoted)  
07 44 09 C Hello Houston, Gemini 4. Do you read?  
07 44 12 CC Gemini 4, this is Houston CAP COM. Loud and clear. How me?

[REDACTED]

[REDACTED]

07 44 11 C Loud and clear now. I understand that the 6-4 up-  
date is 00 09 30, 8+18. And I did not get the last  
quantity.

07 44 27 CC 16+10.

07 44 39 CC Gemini 4, this is Houston. I say it is 16+10. Did  
you copy?

07 45 01 C Hello, Houston, Gemini 4. Do you read?

07 45 06 CC Roger. Loud and clear. You seem to be cutting in  
and out. What UHF are you on?  
(Texas remoted)

07 45 45 CC Gemini 4, this is Houston CAP COM. Over.

07 45 53 C Hello Houston, Hello Houston, Gemini 4.

07 45 55 CC Gemini 4, this is Houston. You're very intermittent.  
If you're reading, we are going to update your 6-4  
over Texas. Leave your computer on. After Texas  
LOS, power down the computer. Did you copy?

07 46 11 C Hello Houston, Hello Houston, Gemini 4.

07 46 15 CC Gemini 4, I'm reading you loud and clear. How me?

07 46 35 CC Gemini 4, Houston CAP COM. How do you read? Over.

07 46 47 C Hello Houston, Hello Houston, Gemini 4.

07 47 03 CC Gemini 4, this is Houston CAP COM. Do you read?  
Over.

07 47 15 C Roger, Houston CAP COM. Gemini 4, I read you loud  
and clear. Go ahead.

07 47 18 CC Roger. Your RETRB is 16+10. Your other readbacks  
were correct.

07 47 30 CC Do you copy?

07 47 36 C Houston, Gemini 4. Do you read me?

07 47 39 CC Roger. Read loud and clear. If you hear me, go HF.  
Go HF.

07 48 02 CC Gemini 4, Houston CAP COM on HF. Do you read? Over.

07 48 17 CC Gemini 4, Houston CAP COM. Do you read? Over.

07 48 21 C Roger, Houston.

07 48 24 CC Roger. You are weak. If you are reading me, your  
RETRB is 16+10. Over.

07 48 31 C 16+10. Roger.

[REDACTED]

[REDACTED]

07 48 33 CC Roger. Your other readbacks were correct. You have a valid 6-4 load in your computer.

07 48 40 C Roger. I have a valid 6-4 load in my computer. Thank you.

07 48 43 CC That's affirmative. You can power down your computer.

07 48 47 C Roger. When is the next time you want me to power it up?

07 48 51 CC It'll be quite a while. We have a long dry spell here. And we'll try to leave you alone and let you rest. You have a D-8 update. D-8 will be performed. Nominal time is 02+30 G.m.t.

07 49 07 C Roger. I'm afraid that Ed will be asleep by that time, but give me that time again.

07 49 13 CC Greenwich Mean Time 00. Excuse me, that's 02 30 00.

04 49 21 C Roger. 02:30.

07 49 24 CC Roger. And if it is at all possible, we'd like to have you put the EVA glove in a plastic bag and seal it as best as you can.

07 49 34 C You want me to seal something up? I'm going to seal up the film that we just took. Is that what you want?

07 49 40 CC Put the EVA glove in a plastic bag and stow it away if possible.

07 49 46 C .....

07 49 50 CC We would like to analyze what came off the window. .

07 49 55 C You want to analyze what came off the window.

07 50 05 C This is Gemini 4. I'm going to go off HF. Okay?

07 50 11 CC Gemini 4, this is Houston. We have nothing else. You can power down your computer. I'll be standing by.

07 50 17 C Roger, going off HF ..... UHF again.

07 50 20 CC Roger. Going back to UHF.

COASTAL SENTRY QUEBEC

08 57 56 CC Gemini, CSQ. Be advised to stand by to receive a Flight Plan update over RKV this revolution.

[REDACTED]

[REDACTED]

08 58 09. C Roger, we'll stand by to receive a flight plan update over REV.

08 58 08 CC Roger. Have you got your computer on?

08 58 12 C Roger. I just got the IGS power on and the computers on.

08 58 16 CC Roger.

08 58 24 CC Roger. You have a Gemini load for area 18-1.

08 58 31 C Roger. Understand I have a load for 18-1.

08 58 33 CC Affirmative. Are you prepared to copy your 18-1 back-up flight quantities?

08 58 43 C Stand by. Okay, go ahead.

08 58 47 CC GMTRC 17 56 03. 7+47. 15+36.

08 59 05 C Roger. Understand 18-1 load is 17 56 03. 7+47. 15+36.

08 59 18 CC Roger, and I also have an area 7-DELTA for you when you are ready to copy.

08 59 22 C Go ahead.

08 59 23 CC Roger. 104. 2+15. GMTRC 01 days, 00 hours, 52 minutes, 14 seconds. 13+48. And there is no RETRB available at this time.

08 59 47 C Roger. You are going to have to say that all over. You were breaking up badly.

08 59 51 CC Roger. Area 7-DELTA: 104. 2+15. 01 days 00 hours 52 minutes 14 seconds. RET 400 K: 13+48. Do you copy?

09 00 14 C Roger, CSQ. You broke up on that, but you came through with a 104. 2+15..... 400 52 14..... +15.

09 00 31 CC Negative. RET 400 K is 13+48. Do you copy?

09 00 39 C We copy.

09 00 52 CC Did you copy the RET 400 K?

09 00 57 C CSQ, I'm only getting about every fifth transmission of yours.

09 00 59 CC Roger, I say again RET 400 K: 13+48. Do you copy?

09 01 24 CC Okay, turn your computer off. Turn your computer off.

09 01 29 C Roger. All I got was "computer off," and I'm turning my computer off.

[REDACTED]



09 01 33 CC Roger. PET 400 K for 7-DELTA is 13+48.  
 09 01 50 CC I say again PET 400 K: 13+48. The Area 7-DELTA.  
 09 02 11 CC Gemini 4, CSQ.  
 09 02 21 CC Gemini 4, CSQ.  
 09 25 24 C Weather photography ..... at about 24 - 00:41 on the first day. A whole series of ..... clouds in a very peculiar pattern down on the ground. The light wasn't very good so I used an f stop of f/11.....  
 09 25 48 P We're just going into the twilight.

ROSE KNOT VICTOR

09 29 47 CC Gemini 4, Gemini 4, this is RKV CAP COM.  
 09 29 56 CC Gemini 4, Gemini 4, this is RKV CAP COM on UHF.  
 09 30 09 CC Gemini 4, Gemini 4, this is RKV CAP COM on UHF.  
 09 30 15 C Gemini 4, read you loud and clear. Go ahead.  
 09 30 20 CC Gemini 4, this is RKV CAP COM on HF. Do you read?  
 09 30 28 C .....  
 09 30 29 CC Roger. Are you on HF?  
 09 31 39 CC RKV Medical Data Pass no. 1 at G.m.t. 02 17 43 for the Pilot. Request that the Pilot have the temperature probe in his mouth 3 minutes before acquisition. Also have the voice update for recovery area 9-3 through 13-2 and 8-Charlie through 12-BRAVO. D-8 experiment at G.m.t. 02 30 59. Command Pilot sleeping period begins at the same time. MSC Experiment -2 and -3 at 03 00 00. Do you copy?  
 09 33 03 CC Gemini 4, RKV CAP COM. Did you copy?  
 09 33 12 CC Gemini 4, RKV CAP COM. Did you copy?  
 09 33 17 C Negative RKV, Gemini 4. All I got was my ascending node. I missed all the other information.  
 09 33 25 C Do you read me?  
 09 33 26 CC Roger, loud and clear, Gemini 4. Read you loud and clear.  
 09 33 31 C Okay. What were you trying to give me that time?



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09 33 34 CC Roger, I have a Command Pilot eating period starting at 00:17:00 until 01:00:00. Do you copy-

09 33 41 C You have a Command Pilot eating period from 00:17 to 01:00. Is that correct?

09 33 58 CC Affirmative. I have an RKV Medical Data Pass no. 1 on the Pilot at 02 17 43. Do you copy?

09 34 19 C RKV Medical Data Pass no. 1 on the Pilot at 02 17 43.

09 34 26 CC Roger. D-8 experiment at 02 30 59.

09 34 38 C Roger. What's the name for that 02 30 59?

09 34 42 CC DELTA-8 experiment.

09 34 46 C Roger. Be advised that the Pilot went to sleep or tried to go to sleep a few hours ago. He'll be getting up about that time.

09 34 56 CC Roger.

09 34 58 CC The Command Pilot sleeping period begins at that time.

09 35 03 C At 02 30 59?

09 35 05 CC Affirmative. ....

09 35 22 C RKV, Gemini 4. ....

09 35 31 CC Roger. MSC No. 2 and 3 experiments, OFF at 03:00 hours.

09 35 42 C Roger. MSC-2 and -3, OFF at 03:00.

09 35 46 CC Roger. You will also receive a voice update for 9 through 13 recovery areas during the RKV pass at 02:17.

09 36 06 C RKV, say all after MSC-2 and -3.

09 36 10 CC Roger. Voice update recovery areas during RKV pass 02:17.

09 36 21 C Okay..... RKV pass 02:17.

09 36 28 CC Affirmative. Affirmative.

HAWAII

10 40 05 CC Gemini 4, Hawaii CAP COM.

10 40 09 CC Gemini 4, Hawaii CAP COM. Do you copy?

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[REDACTED]

10 40 14 CC Gemini 4, Hawaii CAP COM. Do you copy?

10 40 21 C Yes, Hawaii, Gemini 4. Reading you loud and clear.

10 40 24 CC Roger. During your pass we would like to perform a UHF check. I would like to stress - use minimum fuel, minimum fuel. Place your UHF Antenna Select Switch to REENTRY. Give me a short count.

10 40 45 C Roger. I'll give you a short count here on the adapter. 1,2,3,4,5 - Now I am going to Antenna Select, REENTRY.

10 40 54 CC Give me a short count on REENTRY.

10 40 57 C Roger, I'm on REENTRY now. 1,2,3,4,5 - 5,4,3,2,1. Are you reading?

10 41 02 CC Roger, reading you loud and clear. Now I would like for you to roll heads-up. Suggest using Pulse. Use minimum fuel. While you are rolling, perform another voice check on REENTRY.

10 41 20 C Roger, stand by. I've got to get my ac power ON.

10 41 27 CC Roger. Also would like for you to build up cabin pressure to 5.4 psi using O<sub>2</sub> High Rate.

10 41 38 C Roger, you want us to build cabin up to 5.4 using O<sub>2</sub> High Rate?

10 41 43 CC Affirm.

10 41 44 C About 5.3. I'm going to O<sub>2</sub> High Rate now.

10 42 09 CC Gemini 4, Hawaii CAP COM.

10 42 11 C Go ahead Hawaii CAP.

10 42 12 CC Can you position your Real Time T/M Switch to READ-TIME and ACQ-AID?

10 42 18 C Roger. We're REAL-TIME and ACQ-AID. It looks like I'm pointed just about straight up at the sun right now. I'll try to roll around so I can see the horizon. I'll talk as I'm doing this. How do you read me?

10 42 42 CC Roger. Reading you loud and clear. When you get heads-up, place your UHF Antenna Switch to ADAPTER and give me a short count.

10 42 53 C Roger, I will do.

10 43 17 C I have my cabin up to 5.4 at this time.

[REDACTED]



10 43 20 CC Roger, I understand that you are up to 100.

10 43 23 C Roger. It just vented and I'm back down to about 5.3.

10 43 27 CC Roger, understand. Go off of High Rate.

10 43 30 C Roger, I'm off of High Rate already.

10 43 45 C Okay. I'm just about upside-down now. About 120° bank I'll start rolling around.

10 43 53 CC Roger, give me a count as you roll.

10 43 55 C Roger. 1,2,3,4,5 - 5,4,3,2,1.

10 43 59 CC Roger, read you loud and clear. Use minimum fuel, Gemini 4.

10 44 15 C Were you supposed to get some retrofire times from RKV before?

10 44 20 CC Roger, I will pass up 8-C to you when we finish the Com Check.

10 44 25 C Again, please.

10 44 26 CC I will relay Area 8-C to you when we finish the Com Check.

10 44 32 CC Roger.

10 44 52 C I'm in about 90° right now and I'm starting to come out.

10 44 56 CC Roger. Still reading you loud and clear.

10 44 59 C Okay, I'm reading you loud and clear, too. I'm reading you much better than I've read anyone else in a long time.

10 45 03 CC Roger.

10 45 05 C Nice to talk to somebody, again.

10 45 07 CC Yes, you broke up on a couple of passes over.

10 45 10 C Ed was sleeping. I didn't have anyone on the ground to talk to and it was kind of quiet. I should say Ed was trying to sleep.

10 45 21 CC Roger. Has he been sleeping?

10 45 24 C Speak for yourself, Edward. Okay, I'm coming up to level flight at this time. 1,2,3,4,5 - 5,4,3,2,1.

10 45 36 CC Roger. We would like for you to switch to ADAPTER and give us a short count.





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10 45 42 C Roger, I'm on ADAPTER. 1,2,3,4,5 - 5,4,3,2,1. How do you read me?

10 45 46 CC I read you a little broken up but readable.

10 45 51 C Okay, I'm reading you loud and clear also.

10 45 54 CC Roger. I think this is about the best we've had - right?

10 46 16 CC Gemini 4, Hawaii CAP COM. Be advised to switch back to REENTRY. Did you copy, Gemini 4?

10 46 23 C Roger. We're on REENTRY now.

10 46 25 CC Roger, understand

10 46 38 CC Gemini 4, Hawaii CAP COM. Will you position your REAL-TIME ACQ-AID to COMMAND.

10 46 43 C It is on COMMAND.

10 46 45 CC Roger. Roger. Now are you ready to copy your CLA 8-C?

10 46 57 C Roger, we are.

10 47 01 CC 166, 3+35. 01 02 06 51. 11+18. Did you copy, Gemini 4?

10 47 25 P Roger. Reading back 8-C. ΔV 166. 3+35. 01 02 06 51. Say the last two.

10 47 42 CC 11+18. RET 400 K. Did you copy?

10 47 49 P Hawaii, Gemini 4. Say the last two again, please.

10 47 52 CC Roger. GMTRC 01 02 06 51. RET 400 K. 11+18. Did you copy?

10 48 13 CC Gemini 4, Hawaii CAP COM.

ROSE KNOT VICTOR

11 01 48 CC Gemini 4, Gemini 4, this is RKV CAP COM.

11 02 06 CC Gemini 4, Gemini 4, this is RKV CAP COM.

11 02 10 C RKV CAP COM, this is Gemini 4. How do you read?

11 02 15 CC Roger. I read you loud and clear. How me?

11 02 19 C Loud and clear.

11 02 20 CC Roger. Be advised that the oral temp is complete.

11 02 27 C Roger, the oral temp is complete.

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11 02 29 CC Roger. We'd like a blood pressure on the Pilot for an Aero-Med Type 1 Pass.

11 02 39 C Roger. He's getting ready to do that now.

11 02 42 CC Roger.

11 02 45 P We have another sighting on the booster. It's right on the horizon at this time. We're going approximately blunt-end-forward.

11 03 03 S Gemini 4, RKV Surgeon. The cuff is full-scale.

11 03 34 CC Gemini 4, CAP COM. The cuff is full-scale. Did you copy?

11 03 39 C Roger.

11 03 40 S Gemini 4, RKV Surgeon. We have a good blood pressure. Give me a mark when you begin your exercise. Over.

11 03 51 C MARK now.

11 03 55 CC Stand by. We have a small problem here.

11 04 18 C ..... right now.

11 04 19 C MARK!

11 04 47 C We're complete.

11 04 50 C Blood pressure has come up.

11 05 23 S Gemini 4, RKV Surgeon. We have another blood pressure. Standing by for your food, water, and sleep report.

11 05 31 P Roger, this is Gemini 4. Pilot got up about 20 minutes ago and had about 3 and a 1/2 hours of rest. It wasn't deep sleep. It was an on-and-off type sleeping, but there was some sleep associated with it. I had for breakfast, small cereal, orange juice, bacon and egg bites, and calcified ..... bits. I've had 12 mouthfuls of water in just a few moments.

11 06 14 CC Gemini 4, this is RKV CAP COM. Are you prepared to copy some preretro updates?

11 06 23 C Stand by just a moment.

11 06 24 CC Roger.

11 06 37 C Roger, go ahead.

11 06 39 CC Roger. 9-Charlie: 137. 2+02. 01 days 03 hours 40 minutes 03 seconds. (13 (o-three)+05. 93 00 00. CMTRC 01 days, 04 36 18. 7+59. RETRB 15+26. Do you copy?

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11 07 30 C Roger. 9-Charlie: 137. 2+01. 01 days 03 40 03.  
13+05.

11 07 45 CC Roger. I have a 10-Charlie: 123. 1+45. 01 days  
05 13 47. 13+37. 11 DELTA: 087. 1+54. 01 days  
07 10 46. 08+42. GMTRB 12+35. 103. ΔV 0, 01 days  
06 08 44. 09+06. 17+59. Do you copy?

11 08 54 C Roger. 9-3 was 04 36 18. 7+59. 15+26. 10-Charlie:  
123. 1+45. 05 13 47. 13+37. 11 DELTA: 087.  
1+54. 07 10 46. 8+42. 12+35. 103. 06 08 44.  
9+06. 17+59.

11 09 35 CC Roger. Roger. Roger.

11 15 01 P Starting D-8 experiment. Starting it over the chest  
at 59.

11 15 08 C 02 30 59.

11 15 10 P Yes. 02 30 59. Holding it there for one minute.

11 15 38 P Why don't you, between each one of these, turn it  
off, Jim. When we start going to bed.....

11 15 58 P Going into the crotch area.

11 16 02 C Okay?

11 16 03 P Yes .....

11 16 09 C Wonder if I should put my gloves on?

11 16 14 P ..... not as comfortable. I'll tell you that.

11 16 17 C .....

11 16 19 P I say, it's not uncomfortable with all your gloves  
and jazz on. I don't know. Maybe you'll be, but  
.....

11 16 23 C Do you want me to help you take ..... a little bit.

11 16 25 P The what?

11 16 26 C The top.

11 16 29 P Yes, why don't you, and I'll stow it while you're in  
bed. Going to delay, you know, though.

11 17 07 P Going up to the armpit.

11 17 49 C Coming on back here.

(Time not available)

P Front of the window.

P Front of the instrument panel.

[REDACTED]

P Going to the floor.  
C If there's an experiment that comes up where you need me .....

P D-8 is OFF at this time. This run is completed.

11 45 21 P I took an S-5 picture of a cloud formation over the Pacific coming on the Coastal Sentry Quebec area at 03:00 using f/11 at 150. It was frame no. 28. I'm taking several pictures for S-5. I'm right in the area of the tropical storm Carla. It's very heavily overcast right now. I'll take a few of the cloud formations. They have some very interesting formations interlaced on the top of them. Perhaps the camera will pick them up. It's so bright I'm going to shoot 250 at 16. Those will be frames 28, 29, and I'll be shooting at least two more. Those will be 30 and 31. I should be passing right over the area of the storm.

12 02 23 P The Greenwich time is 03:18 and 25 seconds.

12 03 01 P I'm shooting back at 250 at 11 now.

12 03 28 P The Hasselblad hung up on that one. I don't believe it was a good one.

12 03 35 P That was a good one.

12 04 54 P The shutter to the Hasselblad seems to be delayed in dropping. I hope it's not ruining - occluding the pictures.

12 05 29 P Looks like we're pretty well out of the typhoon area. I'll wait until I get out just a little further and try to get a broad over-all shot that covers the whole area.

COASTAL SENTRY QUEBEC

12 09 12 CC Gemini 4, CSQ. I got cut up by Goddard loop. You say you didn't get a time of the hatch closure. Do you have some kind of an estimate?

12 09 22 P Roger. I'll call you down one. Stand by. We've got it marked up.

12 09 25 CC Well, don't look for it if it's out of place.

12 09 30 P Roger. It was considerably later than we had planned.

[REDACTED]

[REDACTED]

12 09 35 CC Roger.

12 09 36 P Everything's going quite well now, up here now. Jim's gone on to sleep. .... four hours of sleep. I had a good rest, also and I'm preparing to have a dinner of roast beef and cream corn.

12 09 51 CC Roger. Roast beef and cream corn.

12 09 54 P Roger. .... over the hurricane, or typhoon area .... there right over Carla and .... which ones they were. I believe I got some good Hasselblad pictures of them down there, though. It was quite extensive cloud coverage from above and quite a few interesting formations.

12 10 14 CC Roger.

12 10 18 P Will you pass on also, that we're delaying D-9 as our flight plan calls for because we feel that we both should be up for it. It requires coordination.

12 10 27 CC Roger. Will do.

12 10 33 P Right now the pressure in the cabin is holding about 5.4. It seems to hold up there. That's where she went at lift-off. It seemed to hold there for a while and then it gradually drained down to about 4.9.

12 10 46 CC Okay. Okay, everything here on the ground looks real good.

12 10 54 P Rog.

12 11 02 P It was really quite a view out there during the EVA.

12 11 07 CC I imagine. Real good show.

12 11 12 CC How long did you stay out?

12 11 15 P Must have been out -- I came out just as soon as we got the GO. Before Hawaii, actually, I came out .... following the camera and installing the umbilical cord. It took a little bit of effort to get them in .....

12 11 50 CC Gemini 4, CSQ. We've got LOS.

12 18 59 P Took another picture of the cloud formation at 03:35..... a long drawn-out type formation.

12 27 28 P One of the food bags has leaked at the inflow lid where you put the water gun.

[REDACTED]

- [REDACTED]
- 12 28 42 P I'm looking out at the stars now. It's not as - it's light, not fully dark. It appears that the window gives you a filter that cuts down the smaller magnitude stars. I'm looking out right now at the Big Dipper and right on down to Arcturus and ....., and it appears to me that what I'm seeing right now are primarily the second and down to third order stars. The smaller ones are cut pretty well out of the picture at the present time. As you get deeper into night, I think more of them will come out, but you definitely don't see as many stars as you do flying at 40 000 feet in an airplane on a good clear night.
- 12 30 59 P The stars of Corvus is right out in view right now. It seems to be in pretty full view. I'm picking up probably down to about fourth order stars right now.
- 12 33 45 P As we get deeper into the night, the other stars are coming out. I can see them - I believe I can see down to about fifth magnitude now. It's still not as brilliant a display of stars as you'd see on a clear night at 20 000 feet out of the canopy of an aircraft. I've got my lights dimmed way down and it makes a much more spectacular view out. As a matter of fact, the stars seem to be coming out as my eyes adapt further. I'm looking right now at the Southern Cross and the stars around it. There seems to be a somewhat of a lighted area around it.
- 12 35 11 P I've got a very clear horizon now. It's rather light and I've got a horizon comprised mainly of clouds. I can see the clouds - the stars as they start to go down into the main air glow, but the clouds seem to give a more light horizon. It doesn't seem that we - earlier in the flight we've seen a horizon without clouds and it was much more - it was a rather thick layer of air glow and you could see the stars as they went down through it. In this cloud-type horizon though, the stars are more difficult to see; although I do note that some of the brighter ones are visible through it as they set.
- 12 36 17 P I'm looking out now at Gruss, and its stars are quite clear, even the small fourth and fifth order magnitude stars in the ....., This time of evening and at night, the skies are quite black and the stars are quite visible. I can see at least fifth order.
- [REDACTED]

ROSE KNOT VICTOR

12 37 22 CC Gemini 4, RKV CAP COM.

12 37 39 P Roger RKV, Gemini 4.

12 37 41 CC Roger. Request that you monitor primary O<sub>2</sub> source pressure, and go to O<sub>2</sub> High Rate to hold source pressure between 930 and 960 psi. Do you copy?

12 38 00 P Roger, understand go to O<sub>2</sub> High Rate to control the O<sub>2</sub> source between 930 and 960 psi.

12 39 25 CC Gemini 4, RKV CAP COM.

12 39 27 P Roger. Go ahead RKV, Gemini 4.

12 39 30 CC Roger. I have a 9-3 update for you.

12 39 33 P Stand by, please.

12 39 45 P Ready to copy.

12 39 47 CC Roger. 9-3: 04 36 19. 07+59. 15+47. Do you copy?

12 40 06 P Roger. 9-3: 04 36 19. 07+59. 15+47.

12 40 18 CC That's affirmative.

12 40 21 P Would you relay to Houston that we were out over ..... but we were able to see the coast of Texas quite clearly and actually picked up ..... outside you could see considerably more ..... coastline of Texas on up around into Louisiana ..... coming on down over the southern part of Florida, I could see the whole state of Florida, and we went ..... and about that time we had the command to start back in.

12 41 04 CC Sounds real good.

12 41 07 P Quite a view!

12 41 13 P Also relay down that control with the gun was ..... very good in yaw, very good in pitch. Roll control wasn't as good but when I had the gun, I was able to pick a spot on the spacecraft and return to it. I was able to maneuver in translation and also in my attitude control .....

12 41 39 CC Roger. Understand.

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12 41 41 P ..... I didn't have the gun though, using the lanyard was a little more difficult due to the position on the spacecraft door at which it was attached. It tended to - like a tether will do, it tended to bring me back and rebound me off the ..... door back toward the adapter quite a bit of the time, and I spent a lot of time trying to get out of that area.

12 42 05 CC Roger.

12 42 22 P ..... I finished the dinner of roast beef .....

12 42 35 CC Roger, very good. Flight has been copying your transmissions.

12 42 41 P Roger. Understand.

12 42 57 P Looking at it now, right now. It's a ..... triangle. I can see all three constellations, I think, clearly. The ..... and Vega. In fact, I can see down .....

12 43 37 CC Roger, sounds real good.

12 43 44 P ..... pictures.

12 46 44 P I've seen quite a display of stars ..... I've seen the southern hemisphere stars. I've seen the Summer Triangle, ....., Vega, the Northern Cross. Looks like now I'm coming up - I can see ..... I can see the .....

12 52 12 P I believe that I miscalled a little earlier on the - that I had a cloud-deck horizon. I definitely don't have a ground-deck horizon. I can see down below thunderstorm activity and the stars sinking down through the air glow. So it's definitely an air glow horizon. And I estimate it to be approximately 11 to 12° angle, pie section, from my view. There's quite a display of thunderstorms down below right now.

12 52 46 P It's starting to get light and I can still see quite a few stars. I'm going to try to see just what change I have of seeing stars on the sunlit side of this pass.

12 57 36 P Well, I'm back around now to the Southern Cross with the light splotchy area of - I guess lots of very light ..... stars. I don't recall quite seeing the same display in the planetarium. Alpha Centuri and Beta are quite clear. I'm still at this time - it's starting to get light and I can still see quite a few stars. I believe they go down to about at least

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the sixth order now. I started up about the fourth and I'm down to sixth. There's really a lot of stars out in that .....

- 12 59 00 P The light band of stars seem to - the stars right around the Southern Cross and the rather dark void area and the right - on the sign of the Cross and that as you get back toward Alpha and Beta Centuri the light area continues. It just looks ..... a big patch of - oh, it looks like we're going to be late.
- 12 59 32 P It looks just as ..... It looks just like ..... As a matter of fact, it probably is. It certainly is clearly defined, though. You can see the dark voids - a dark void area, ..... in it.
- 13 00 58 P There's the little Corona Australis, that we decided to use as a calibration. It's out in front of me right now, and they go down to fifth order stars and I can see stars that are distinctly of a less magnitude than the stars in the Corona Auscerias.
- 13 03 31 P MSC-2 and -3 are being turned OFF at 04 19 40. I'm afraid I was watching the stars so much I forgot to turn it off at the proper time.
- 13 05 30 P Right now it's daylight over on Jim's side, and looking out my side I can still make out some of the stars. It appears that you can keep the spacecraft oriented so that one side is dark. On the dark side you can see stars, but the other side is in daylight. Jim's side is definitely in the daylight right now and mine is in the dark. This is one of the things that surprised me the most earlier in the flight when I was looking out at all the little fireflies from the booster, and remarking how dark it was and how it looked. I looked over at Jim and he was looking out of the perfectly daylight window. That's actually the way it's supposed to be but was a quite interesting thing - the first time you see it.
- 13 15 02 P I just took an S-5 picture. I'm just coming over the Sahara Desert. It's really a beautiful view. I'll take several more pictures.
- 13 17 05 P I took two pictures - 45 and 46. I'm passing over Africa now, looking down at the Sahara Desert.
- 13 20 09 P Passing over the east side of Africa now. I see quite a few .....
- [REDACTED]

COASTAL SENTRY QUEBEC

13 38 56 CC Gemini 4, CSQ CAP COM.

13 39 15 P Go ahead CSQ, Gemini 4.

13 39 18 CC Roger. Read you loud and clear. I have the retro information for you. Are you prepared to copy?

13 39 26 P Stand by one, please.

13 39 27 CC Roger.

13 39 40 P Ready to copy.

13 39 43 CC Roger. Area 11-DELTA:  $\Delta T$  zero. GMTFC 01 days 07 48 58. RET 400 K, 15+26. Area 12-DELTA:  $\Delta V$  96.  $\Delta T$  2+05. GMTFC 01 days, 08 hours, 46 minutes, 55 seconds. RET 400 K 07 +30. RET reverse bank 13+31. Are you copying?

13 40 44 P Roger, the last part of your first message and the front part of it were blocked out. Say again the first one. Repeating the second - Area 12-D: 96. 2+05. 01 08 46 55. 07+30. 13+31.

13 41 03 CC Roger, I'll go back to 11-BRAVO. 11-BRAVO:  $\Delta V$  zero.  $\Delta T$  zero. GMTFC 01 days, 07 48 58.

13 41 17 P Roger. 11-B: 0. 0. 01 07 48 58, and I didn't get the last two .....

13 41 25 CC Roger. RET 400 K is 15+26. There is no RETRB.

13 41 34 P Roger. 15+26. Understand. Thank you.

13 41 37 CC Roger. I have also 12-BRAVO:  $\Delta V$  160. 3+37. 01 day, 09 31 18. 10+39. There is no RETRB.

13 42 02 P Roger. 12-BRAVO: 160. 01 09 31 18. 10+39.

12 42 14 CC Roger. And also Area 13-2: 120. 2+33. 01 days, 10 10 25. 04+21. 9+08.

13 42 37 P Roger. 13-2: 120. 2+33. 01 10 10 25. 04+21. 9+08.

13 42 48 CC Roger, you got it.

13 42 51 P Roger.

13 43 01 P Be advised, my  $O_2$  pressure is holding just a little past 960. I'm not going to  $O_2$  High Rate at this time because the Command Pilot is sleeping pretty well and I'll let him sleep.

[REDACTED]

13 43 16 CC Roger.

13 43 18 P I'll keep my eye on it and not let it go much higher.

13 43 21 CC Say again.

13 43 23 P I'll be watching it and not let it go much higher, but I prefer to let him go ahead and sleep now that he's asleep.

13 43 27 CC Okay.

13 43 32 P Can you give me a new up-date for my orbital plot up here?

13 43 38 CC For the orbital what?

13 43 40 P For the orbital plot. I need the ascending mode of the orbit crossing the equator.

13 43 44 CC Roger. I'll check with Houston. Stand by.

13 47 12 P It looks like I just passed over some of the Marshall Islands down there. They were quite clear and you can see the atolls and stuff around the islands themselves. I tried to get a picture of them, but I caught them just a little too late. They were very clear and quite easy to pick out.

13 50 05 CC Gemini 4, Gemini 4, this is Houston CAP COM. Over.

13 50 18 CC Gemini 4, Gemini 4, this is Houston CAP COM. Over.

13 50 32 CC Gemini 4, Gemini 4, this is Houston CAP COM. Over.

13 50 47 CC Gemini 4, Gemini 4, this is Houston CAP COM. Over.

13 50 51 P This is Gemini 4.

13 50 53 CC Roger, Gemini 4, Houston CAP COM. Reading you loud and clear. I'd like to update your Flight Plan and following I will update your orbital map. Over.

13 51 06 P You cut out. Say again, Houston CAP COM. Understand update Flight Plan. Standing by for your update.

13 51 12 CC Gemini 4, this is Houston CAP COM. I would like to update your Flight Plan for the next 4 hours. Are you ready to copy? Over.

13 51 23 P You're cutting in and out. Go ahead.

13 51 27 CC Say again, Gemini 4.

13 51 32 P Cutting in and out, go ahead with the update.

13 51 32 CC Roger, I understand. You're ready to copy the update on the Flight Plan?

[REDACTED]

[REDACTED]

13 51 39 I Houston CAP COM, Gemini 4. Go ahead with the update.

13 51 42 CC Roger, Gemini 4. This is Houston CAP COM. Your Flight Plan update. Greenwich Mean Time all times. 05:46 .....

13 51 51 P Roger, go ahead.

13 51 52 CC .....Ascension C-band track, 05:56 to 06:16. Try your Orbital Nav Check, if possible, without using attitude fuel.

13 52 20 CC Gemini 4, Houston CAP COM. Did you receive my last?

13 52 24 P You were all blocked out after .....

13 52 30 CC Gemini 4, this is Houston CAP COM. I say again, 05:56 to 06:16. Orbital Nav Check using no attitude fuel. Over.

13 53 07 CC Gemini 4, Gemini 4, Houston CAP COM.....

13 53 09 P Houston CAP COM, Houston CAP COM, Gemini 4.

13 53 14 CC Roger, I say again. 05:56 to 06:16, Orbital Nav Check, using no attitude fuel. Over.

13 53 32 CC Gemini 4, Houston CAP COM. Over.

13 53 35 P Go ahead, this is Gemini 4. Standing by.

13 53 40 C Roger. 06:15, Command Pilot awake. Over.

13 53 54 P Roger. 06:15, Command Pilot awake.

13 53 57 CC Roger. 07:02 RKV tape playback. Medical Data Type 1 Command Pilot.

13 54 34 C Gemini 4, Houston CAP COM. Do you read? Over.

13 54 47 CC Gemini 4, Gemini 4, Houston CAP COM. Over.

13 55 02 CC Gemini 4, Gemini 4, Houston CAP COM. Over.

13 55 09 CC Gemini 4, this is Houston CAP COM. I'm not receiving you. I'll broadcast the last two items of the Flight Plan in the blind. Command Pilot eat 07:15 to 11:15. Pilot sleeps 07:15 to 11:15. This is Houston CAP COM broadcasting in the blind, Flight Plan 08:35 RKV .....

13 57 07 P I took S-5 picture just as I got contact with Houston and I wasn't able to log it. It was of a cloud formation at approximately 05:06. It was frame 44.

14 03 04 P Our power-down condition is down running just a tad over 12 amps. Looks like a real good power-down.

[REDACTED]

ROSE KNOT VICTOR

14 12 42 CC Gemini 4, Gemini 4, this is RKV CAP COM.

14 12 57 CC Gemini 4, Gemini 4, this is RKV CAP COM.

14 13 05 P Go ahead RKV, Gemini 4.

14 13 08 CC Roger, how do you read?

14 13 10 P Read you loud and clear. About the best that we've had for a while.

14 13 14 CC Roger. I have flight plan updates for you. How much did you copy over the CSQ?

14 13 21 P Roger. 07:15 Command Pilot awakes. 07:02 RKV tape dump. Medical Type 1 for Command Pilot 08:15. Command Pilot eats 08 o'clock. We didn't get anymore.

14 13 36 CC Roger. 07:15 to 11:15 Pilot sleeps. 08:33 RKV will update you with PLA's and CLA's and an RKV tape dump. I have orbital navigation update information for you.

14 14 03 P Roger. Understand. 07:15 to 11:15 Pilot sleeps. 08:35 PLA and CLA update, and I am standing by for the orbit update.

14 14 25 CC Roger. There will also be a tape dump at 08:35.

14 14 31 P Roger. I'd like to know the quality of the tape dump we've been giving now. Be advised we have ..... attitude holding for you.

14 14 38 CC Roger. We have had two dumps here and they have been extremely good. .... site has reported the tape dumps have been good.

14 14 48 P Roger. Understand. ....request orbit update.

14 14 54 CC Roger. Ascending node longitude 3° West. G.m.t. 05:53.

14 15 09 P Roger. Understand ascending node longitude 03° West at 05:53 G.m.t.

14 15 16 CC That's affirmative. The Cape is also going to try air-to-ground remoting over Ascension.

14 15 22 P Roger. We'll be standing by for ..... at the present time.

14 15 33 CC Roger, we gave you a T<sub>X</sub>.

14 15 35 P Roger.

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14 15 52 P Will you relay to Houston that we have apparently a burned-out bulb in aft window of the sextant, and if they might have any further instructions for us. Perhaps we have an extra bulb onboard ..... battery ..... the bulb.

14 16 17 P RKV, Gemini 4. Did you hear me?

14 16 21 CC Roger, Gemini 4.

14 16 23 P Roger.

14 16 37 P ..... is staying comparatively low. We're setting dew point spread of about 13 or 14°.

14 16 51 CC Say again, please, Gemini 4.

14 16 53 P We're getting dew point spread on the order of 65° wet bulb and about 73° dry bulb. It looks good. It looks pretty good from here so far.

14 17 06 CC Roger, real good.

14 17 08 P ..... sleeping with face-plate closed.

14 17 23 CC Roger.

14 30 44 CC Gemini 4, Gemini 4, this is Houston CAP COM. Over.

14 30 54 CC Gemini 4, Gemini 4, this is Houston CAP COM. Over.

14 31 00 P .....

14 31 04 CC Gemini 4, Houston CAP COM. I can hear you transmitting but you are unreadable. Over.

14 31 10 P Houston, Gemini 4. You're breaking up. You're breaking up, Gemini 4.

14 31 15 CC Roger, Gemini 4. This is Houston CAP COM. I'm reading you now very, very weak. There is no spare bulb for your sextant. Suggest fingertip lighting only. Over.

14 31 29 P Roger. You're coming through five-square. ....

14 31 36 CC Roger. You're barely readable. We'd like to recommend that you advise us as to your sleep periods, whether or not you feel you're getting enough. And we'll attempt to real time the flight plan around your sleep period. Over.

14 31 55 P ..... 25 minutes ..... not wake him up at that time if he's still sleeping soundly and let him go ahead and sleep it out.

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[REDACTED]

14 32 11 CC Ed, this is Houston CAP COM. I can't read you - can't understand what you're talking about. Apparently you can read me. We're concerned about your O<sub>2</sub> source pressure. Did you say it was 973? 973?

14 32 34 CC Gemini 4, this is Houston CAP COM. We're concerned about your O<sub>2</sub> source pressure getting to the limit. Over.

14 32 43 P Roger. Be advised the O<sub>2</sub> is at .....

14 33 05 P Houston CAP COM, Gemini 4.

14 33 09 CC Go Gemini 4. Houston CAP COM.

14 33 11 P Roger. Be advised the O<sub>2</sub> is at about 970 at the present time.

14 33 24 CC Gemini 4, Houston CAP COM. Say again your last, please. Say again.

14 33 30 P .....O<sub>2</sub> .....

14 33 45 CC Gemini 4, Houston CAP COM. Understand your O<sub>2</sub> source pressure is holding at 970. Is that affirm?

14 33 56 P .....

14 34 15 CC Gemini 4, Houston CAP COM. You are unreadable. apparently you are reading us okay. I'll just be standing by. Over.

14 34 36 P Jim's starting to come out on the day side on his side again, and again I have quite good stars on my side. I have Arguella right out in front of me right now. Looks like I'm reading - seeing magnitudes now down to the fifth order, and Jim's got daylight on his side.

14 40 47 CC Gemini 4, Houston CAP COM.

14 40 51 P Go ahead Houston, Gemini 4.

14 40 54 CC Roger. We received negative C-band track over Ascension. Can you tell us what your attitudes were, please?

14 41 03 P Roger. Say again, please.

14 41 07 CC Roger. We received negative C- band track over Ascension. We would like to know what your attitudes were.

[REDACTED]

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14 41 16 C Roger. Pitch at that time was - the small end was pointing up at the stars primarily, and we were in free drift. The blunt end .....

14 41 34 CC Roger. We got it. That explains the negative C-band track.

14 41 38 C Roger.

14 41 42 P It'll go 360° around when it's pointing small-end-forward, but when it's pointing up it's not too good, I guess.

14 47 40 P Put a new tape cartridge at 06:00. I just took another S-6 picture. It was over the desert area showing the long longitudinal trim lines in the sand.

14 48 15 P Took a second picture as I crossed the east coast of Africa.

14 48 22 P Looks like I am coming right - I might be able to see the city of Mecca. It should be in my area. Might cross over it. The Arabian Peninsula -

14 48 36 P ..... goes by, I'll take another picture of the Arabian Peninsula area.

14 48 50 P My attitudes on the last shot were about 90° down and about 30 or 40°.....

14 50 19 P I took another picture of the Arabian Peninsula area. Looks like it goes right up along a dry river bed. The erosion is up where the water sometimes comes.

14 52 50 P I took another S-6 photo, no. 51.

14 59 41 P We're passing over the Himalayas, I believe. Very close to the pictures that Gordo took on his orbital flight. I believe Jim is looking out through his window at it now.

15 23 55 CC Gemini 4, Gemini 4, Houston CAP COM. Over.

15 24 11 CC Gemini 4, Gemini 4, Houston CAP COM. Over.

15 24 26 C Go ahead Houston, Gemini 4.

15 24 29 CC Roger Gemini 4, Houston CAP COM. I have an 11-BRAVO update. Are you ready to copy?

15 24 37 C Stand by one, please.

15 24 41 CC Understand you're ready to copy 11-BRAVO. Over.

15 24 55 CC Gemini 4, this is Houston CAP COM following with 11-BRAVO update.

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[REDACTED]

15 25 03 CC 183. 3+57. 07 08 55. 09+30. Reverse bank angle is not applicable. Over.

15 25 34 C Houston, Gemini 4.

15 25 40 CC Gemini 4, Houston CAP COM. Did you copy 11-BRAVO update?

15 25 56 CC Gemini 4, Gemini 4, Houston CAP COM. Did you copy 11-BRAVO update? Over

15 26 21 CC Gemini 4, Gemini 4, Houston CAP COM. Did you copy 11-BRAVO?

15 26 53 CC Gemini 4, this is Houston CAP COM. I'm not reading you. I will read 11-BRAVO once more in the blind. 11-BRAVO: 183. 3+57. 07 08 55. 9+30. Reverse bank angle not applicable.

15 27 26 C Houston CAP COM, Gemini 4 .....

15 27 36 CC Gemini 4, Houston CAP COM. You're still unreadable.

15 28 55 CC Gemini 4, Gemini 4, Houston CAP COM. How do you read me? Over.

15 47 30 S Gemini 4, RKV Surgeon. Understand blood pressure. Give me a mark on your exercise.

15 47 36 C Roger.

15 47 44 C MARK!

15 48 14 C Blood pressure is coming.

15 48 30 S Full scale.

15 49 14 S ..... blood pressure standing by for your food, water .....

15 49 20 C Roger.

15 50 00 C I feel quite rested now, although I wasn't really able to get any good sleep. I had two meals. I had breakfast right after we got through with our EVA exercise and while Ed was sleeping. Then I had another meal, meal B. In the first meal I didn't eat the bacon and egg bites. In the second meal I think I've eaten all of it. After I woke up I had 10 swallows of water.

15 50 30 C Roger. I've had 10 swallows of water since I woke up probably ..... before I went to sleep.

15 50 45 S Roger. Any other comments?

[REDACTED]

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15 50 49 C We managed to get the urine system, urine bags dumped, and we're in pretty good shape.....

15 50 58 S Roger.

15 51 00 C Roger, be advised that so far we've had to avoid ..... any water floating around the cabin. I think that we're doing pretty well where we are.

15 51 12 CC Roger. This is RKV CAP COM. I have an update for photographic purposes on the eleventh revolution.

15 51 20 C Roger. Stand by one.

15 51 27 C Okay, go ahead with your update.

15 51 29 CC Roger. Typhoon Babe, G.m.t. 07:56, south of Hong Kong. It will be north of the ground track.

15 51 49 C Roger, 07:56 we will see north of the ground track, Typhoon Babe.

15 51 57 C Is that correct?

15 52 00 CC Roger. That's affirmative. This will be south of Hong Kong.

15 52 05 C Roger. South of Hong Kong.

15 52 06 CC Roger, also have 11-BRAVO update for you.

15 52 11 C Stand by a minute.

15 52 17 C Okay, go ahead.

15 52 19 CC 11-BRAVO: 183. 3+57. 07 58 55. 09+30. GMTRB N/A.

15 52 40 C Roger. Give us our  $\Delta V$  again. We missed that.

15 52 43 CC Roger. 183.

15 52 50 C RKV, Gemini 4. Give us our  $\Delta V$  again. Say it again.

15 53 00 CC 183.

15 53 05 C Okay, Gemini 4, reading back 11-BRAVO: 183. 3+57. 07 58 55. 09+30.

15 53 15 CC Roger, roger, roger.

16 21 20 C ..... over Africa I took one picture..... I think that was exposure no. 53 in the Hasselblad magazine.

16 22 08 C Now we're over the Mediterranean. It is very easy to recognize. I see a couple of very large ships. They start off from Beirut. We should be passing just south of Beirut.

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[REDACTED]

16 30 06 C I just took a picture. Frame no. 14 on the Contarex the same film pack we used for the EVA. There's the start of a long area of clouds. It appears to be cut-off between the desert area and the mountainous area that extends over China.

16 39 28 F Now it's 07:55 and 1/2. I shot off the Contarex, trying to get Hurricane Babe. It wasn't very successful. The hurricane itself isn't very prevalent. Looks like another group of clouds.

17 20 35 C Gemini 4. How do you read?

17 20 37 CC Roger, I read you loud and clear. How me?

17 20 40 C Loud and clear.

17 20 41 CC Roger, it's the clearest it's been.

17 20 45 C Yes. It's very nice talking to people I can understand. It doesn't happen very often.

17 20 49 CC Roger.

17 20 50 CC I have a Flight Plan update for you, for ground elapsed time of 19 hours going on to 22 hours.

17 21 00 C Roger. Go ahead.

17 21 01 CC Roger, on Rev 12 RKV will update your PLA and CIA time; Rev 13 Canary Islands will have a C-band track. And also there will be astro-orbital nav check-run. No propellant usage for ATTITUDE control. This is a g.e.t. of ..... or a G.m.t. time of 12 hours 16 minutes 00 seconds. Rev 13 tape dump over Carnarvon. After Carnarvon pass go to normal Flight Plan except when changes are required. Did you copy?

17 22 02 C Roger, understand, at hours 18 to 22. On Rev 12 over RKV I will be updated with my PLA and CIA. Rev 13 over Canary will have a C-band track. At a G.m.t. of 12 16 00, I can do some orbit nav providing it requires no fuel. On Rev 13 I will have a tape dump over Carnarvon and I'll begin a normal Flight Plan after that time. Is that correct?

17 22 35 CC Roger. That is correct. Everything still looks real good to us on the ground.

17 22 41 C Roger, it looks pretty good up here, too.

17 22 44 CC Roger, it would.

17 22 45 C I think I've looked at the earth from every conceivable angle over the last 6 or 8 hours.

[REDACTED]

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17 22 50 CC Yes, I can imagine.

17 22 53 C Do you have some updates for us as far as PLA and CIA at this time?

17 22 58 CC Negative. We won't get that until the next rev.

17 23 01 C Okay, fine.

17 23 03 C It is really good to talk to somebody that I can understand and somebody that can hear me.

17 23 08 CC Roger, we are kind of in the same shape, here, sitting out in this boat. We have a little trouble getting communications with the rest of the world.

17 23 16 C Okay, we'll get around to talking to each other for a minute because I can't talk to them either.

17 23 22 CC Roger.

17 23 27 CC How's the sleeping going up there, floating around?

17 23 31 C Actually it doesn't go too well because unfortunately we don't have any way of shutting off the radio. So that when we are talking like this, Ed can hear you and I; although he has his volume down, I'm sure he hears us right now. And it's awfully cramped. We got all this extra equipment on board that we'd hoped to dump out and it is really crowded.

17 23 51 CC Yeah, man!

17 23 55 CC It seems like it would be kind of soft sleeping, without any weight or anything.

17 23 59 C It is, but you still are restricted to a certain position, just like sitting in a bus seat. Although you don't sit on your fanny, you still have to sit in the same shape.

17 24 10 CC Yes, I can imagine.

17 24 35 CC Gemini 4, Flight asks how are you doing as far as getting things stowed away and if you are getting a little crowded up there.

17 24 43 C Yes, indeed. We are crowded. We have most of that junk down in our foot well, and I guess we are going to have to hold some of it during reentry.

17 24 53 CC Oh boy! That sounds like a lot of fun.

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[REDACTED]

17 25 00 C So far our major problem aside from the hatch and a few other exciting moments is trying to figure out what to do with all the stuff we've got.

17 25 09 CC Yes. Well, let's see, there's a lot of empty space out there around you.

17 25 19 C Yes, and I sure wish I could get to it.

17 25 20 CC Yes, I imagine.

17 25 39 CC Flight advises that they have very good communications on this air-to-ground remoting and would like you to go over the problem you had with the hatch closure.

17 25 48 C Roger. There are two gears that we have that go around when you pull the handle back and forth. One of them is the gear that sort of acts as a ratchet, a little cylinder with a piston in it and a spike behind it that engages the ratchet. And we were having a little trouble with that before we got it open and after we got it open we had difficulty getting this ratchet to work. Also, we had a great deal of difficulty getting the hatch closed far enough so that we could even start latching it. Then, Ed had to push the ratchet in with his hand on every go until we got the thing started. And I was pulling on the thing until I thought probably I was going to break a lug right out of the hatch. And we finally got it going, and it finally came forward. So I don't think we ought to try opening it up anymore.

17 26 43 CC Yes, Roger. Sounds like a good idea to keep it closed.

17 26 47 C Rog. I'm not sure what the trouble was when we got down close but I tell you one thing, I'm glad that we spent so much time training in closing - opening and closing hatches.

17 26 58 CC Yes, all that extra training sure pays off at times.

17 27 17 CC Roger, Gemini 4. We're coming up on IOS here shortly. Anything else?

17 27 37 CC Gemini 4, RKV.

17 40 50 P I just took a picture on the Hasselblad, Frame 54. A picture of cloud streaks over the South Atlantic  
.....

[REDACTED]

[REDACTED]

17 43 42 P Frame 55 on the Hasselblad just as we came on to Africa. We had a very good high altitude cloud streak, it looked like - so I took another picture of the high altitude ones.

17 45 04 P Over Africa now. I just took Frame 56 on the Hasselblad. It was a topographic feature. It looked like it had been an old volcano at one time and you could see the concentric circles on the top of where it had erupted a number of times or the way it eroded. 09:01.

17 48 20 P ..... Film Pack no. 11 on the Hasselblad and no. 7 on the .....

18 00 21 C I just saw the booster in the sunlight, at a distance I would estimate of 50 miles or so. Time is 09:16 and 1/2.

18 01 10 C I don't know which way I was pointing when I saw the booster. Can't see the ground at the present time.

18 54 49 CC Gemini 4, Gemini 4, RKV CAP COM.

18 54 58 CC Gemini 4, Gemini 4, RKV CAP COM.

18 55 04 P RKV, Gemini 4. How do you read?

18 55 07 CC Roger, reading you fairly clear, a little background noise. How me?

18 55 18 CC Gemini 4, RKV CAP COM.

18 55 21 C Roger RKV, you broke up. I only got the first part and the last part of your message here.

18 55 25 CC Roger. I read you loud and clear now.

18 55 28 C Same here.

18 55 29 CC Roger, I've got a whole lot of things to pass up to you.

18 55 33 C Okay, go ahead.

18 55 34 CC Roger, I've got a map update. It'll be G.m.t. 10 17 49. Ascending mode 73° West. You copy?

18 55 52 C Roger. 10 17 49. 73° West.

18 55 57 CC Roger, I have a correction to the Flight Plan. You will be tape dumped on the 13th Rev over Canary Island and the tape dump for Carnarvon will be changed to the 14th Rev.

[REDACTED]

[REDACTED]

18 56 11 C Okay, tape dump over Canary on the 13th and Carnarvon on the 14th.

18 56 16 CC Roger, stand by for retro updates. Are you reading?

18 56 28 C Roger, go ahead.

18 56 29 CC Roger, 13-BRAVO; 146, 03+32. 11 01 48. 12+09, 14-2: 121. 03 27 11. 56 46. 3+17, 8+36. 14-BRAVO: 130, 02+46. 12 35 16. 12+59. 15-1, 121, 2+34, 13 21 00, 04+07, 09+03. 15-BRAVO: 121, 02+34, 14 10 30, 12+22. 16-1: 140, 3+26, 14 54 40. 3+14, 8+35, 16-BRAVO: 096, 02+03, 15 50 26. 11+28. 17-1: 158, 3+48, 16 28 28, 2+39, 08+22. 17-BRAVO: 087, 01+51, 17 26 03, 10+03. All right, do you copy?

18 59 41 CC Gemini 4, RKV CAP COM.

18 59 45 C RKV, Gemini 4.

18 59 47 CC Roger, did you copy those?

18 59 49 C I got right down to 17-1 and then you started breaking up. I got 17-1: 138, 3+48 .....

18 59 57 CC Roger, we're coming up on the LOS. That's all I'll be able to give you.

19 00 04 C I can't read you, RKV.

19 00 05 CC Roger, we're coming up on LOS so that's it.

19 00 09 C Okay, give me a G.m.t. time hack if you can.

19 00 12 CC Roger, 10 16 20. 2,1.

19 00 20 MARK! 10 16 20.

19 00 24 C Roger, thank you.

19 00 25 CC Roger.

19 15 34 CC Gemini 4, Canary CAP COM.

19 15 37 C Go ahead, Canary, Gemini 4.

19 15 38 CC Roger, give me your Read Switch on for 10 seconds.

19 16 01 C Read Switch coming off.

19 16 03 CC Roger.

19 16 12 CC Gemini 4, Canary CAP COM. I have more retrofire data for you. Stand by to copy.

19 16 17 C Roger, standing by.

[REDACTED]

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19 16 21 CC 17-BRAVO: 87, 01+51. 01 17 26 03. 10+03. 18-1:  
04+14. 18 02 42. 02+44. 08+57. 18-BRAVO: 85.  
01+48. 18 57 42. 09+19. 19-4: 137, 03+3 -  
correction, correction, 03+22. 20 50 11. 03+10,

19 17 41 CC 08+40. That's it. Do you have it?

19 17 53 C Roger, I had those, but I never did get 17-1 before.  
Could you give me - I got 158.3+48. And I never got  
the GMTRC.

19 18 01 CC Roger. GMTRC 16 28 28. 02+39. 08+22.

19 18 17 C Roger, I have them. Thank you.

19 18 39 C Canary, what's my current orbit? Do you know?

19 18 43 CC Say again.

19 18 44 C What's my current apogee and perigee?

19 18 46 CC Stand by.

19 19 09 CC Apogee is 155.7. Perigee is 88. They will give you  
better data after they get our radar track.

19 19 19 C Okay.

19 51 29 CC Gemini 4, Carnarvon CAP COM.

19 51 37 CC Gemini 4, Carnarvon CAP COM. Over.

19 51 45 C Carnarvon, this is Gemini 4. How do you read?

19 51 47 CC Roger, read you loud and clear. How me? Over.

19 51 49 C Loud and clear.

19 51 50 CC Roger, will you turn your Quantity Read Switch ON,  
please?

19 52 01 C Okay, we've got it.

19 52 14 CC Have you completed your M-3 exercise experiment?

19 52 20 C That's just a medical pass.

19 52 23 CC All right. I'd like to read out this Primary O<sub>2</sub>  
pressure and quantity from you, please.

19 52 36 C Roger, primary - primary O<sub>2</sub> pressure is 970 psi.  
Quantity is about 39 1/2 percent.

19 52 46 CC Roger, I copied. Thank you.

19 53 18 CC Gemini 4, I've got some times for you. Ready to  
copy? These are some changes to your Flight Plan.

19 53 26 C Okay, go ahead.

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[REDACTED]

19 53 28 CC We would like you to switch your ADAPTER C-band beacon switch to the CONTINUOUS position at 11 52 43.

19 53 44 C Roger, C-band ADAPTER SWITCH to CONTINUOUS at 11 52 43.

19 53 54 CC That's affirmative. We would like you to come back to COMMAND at 11 59 23.

19 54 07 C Roger, back to COMMAND at 11 59 23.

19 54 11 CC Affirmative.

19 54 21 C I have a question, Carnarvon, it looks like we're getting back on the fuel line and then we are going to do the rest of the Flight Plan as originally scheduled. Is that correct?

19 54 29 CC Roger, that's affirmative.

19 54 32 C Okay, my Flight Plan shows me going to sleep then at the elapsed time of about 20:30 or so. Does that still hold true?

19 54 42 CC That is affirmative.

19 54 43 C Okay.

19 54 59 C At the elapsed time of 22 hours we will take up the Flight Plan again. We will be back on the fuel curve at that time. Correct?

19 55 07 CC Affirmative.

19 55 08 C Okay.

20 25 56 P Oh, and I was also - can you hear me?

20 25 60 C Yes.

20 26 20 P Okay, I am switching the biomed recorders now from no. 1 - OFF to no. 1 - ON and no. 2 - OFF. The Command Pilot is going to sleep at this time. The time is 11:43.

20 27 03 P Is the sextant back in the box?

20 27 05 C What?

20 27 08 P Where is the sextant?

20 27 10 C Where is the what?

20 27 12 P Sextant.

20 27 14 C It's right down here. Do you want it?

20 27 15 P Yes. Did we ever make the light work?

[REDACTED]

[REDACTED]

20 27 20 C No.

21 23 24 CC Gemini 4, Carnarvon CAP COM.

21 23 31 CC Gemini 4, Carnarvon CAP COM. Over.

21 23 35 CC Gemini 4, Carnarvon. If you read, will the Pilot please put the oral thermometer in his mouth.

21 23 53 CC Gemini 4, Carnarvon.

21 23 57 P Go ahead, Carnarvon. Gemini 4.

21 23 59 S Roger. Will the pilot please put the oral thermometer in his mouth?

21 24 03 P Roger. Affirmative. I have the oral thermometer in the mouth. Do you want me to keep it closed for a few minutes so you can get a temperature?

21 24 23 CC Okay. You can start pumping up the Pilot's blood pressure, and leave the thermometer in your mouth. Don't acknowledge.

21 25 34 CC Cuff's full-scale. Okay Gemini 4, we have enough oral temp. Stand by for the Aero-Med.

21 25 50 S This is Carnarvon Surgeon. Your blood pressure is coming .....

21 26 56 P Gemini 4. Be advised the exerciser is over on the Command Pilot's side right now. I believe he's in a pretty good sleep. I'd prefer not to disturb him. Could I swap you this off and give you one when he wakes up?

21 27 13 S This is the Surgeon. Say again. Is this the Pilot speaking?

21 27 17 P Roger. That's affirmative..... The exerciser is over on the Command Pilot's side and he's asleep, I believe .....

21 27 26 S Understand. Disregard the exercise at this time. Would you tell me what you've had to eat, sleep, and drink.

21 27 36 P Say again, please.

21 27 38 S How about an eat, water, and sleep report, please?

21 27 41 P I had a very deep sleep and I woke up when the ..... changed from two to one and then I switched it back to two and I went back to sleep again for at least 2 and 1/2 hours. I did not..... Jim had to actually blow reveille for me to get up.

[REDACTED]

[REDACTED]

21 28 10 S You say you woke up an hour ago. What time did you go to sleep, please?

21 28 20 P I was asleep 1 hour and I woke up at 11:30.

21 28 25 S Was that 4 hours sleep at 11:30?

21 28 30 P That's affirmative. .... that was 11:30 and I'd been asleep for approximately 4 hours.

21 28 40 S Have you had anything to eat?

21 28 41 P No, I haven't eaten since I went to bed - just before I went on to sleep. I have had about 6 swallows of water since I got up and I drank .....

21 28 57 S You haven't eaten Meal D? Meal D?

21 28 59 P That's affirmative, I haven't eaten that yet.

21 29 01 S Okay, fine. That's all I have. Thank you.

21 29 02 P Roger .....

21 29 05 CC Gemini 4, Carnarvon CAP COM.

21 29 07 P Go ahead, Carnarvon, Gemini 4.

21 29 08 CC Okay, do you have your gloves off?

21 29 10 P That's affirmative. I've had my gloves off since ..... I took my sleeves off after the first 4-hour sleep period that I had.

21 29 18 CC Roger, understand. I've got your Apollo Landmark Run One. Ready to copy?

21 29 23 P Stand by one, please.

21 29 41 P Go ahead, ready to copy.

21 29 43 CC Roger, Apollo Run One: 13 54 08, northeast of track, 92 miles, and ..... constraint on attitude control.

21 30 08 CC Roger, does the Command Pilot have his gloves off, also?

21 30 16 CC Are the Command Pilot's gloves off?

21 30 18 P Neg - he put them on to go back to sleep.

21 30 21 CC Roger. Your Biomed no. 2 recorder should be on and your no. 1 OFF at this time.

21 30 26 P Negative, we got a switch on that Pressure Regulator ..... switch ..... break switch has ..... so that no. 1 ..... and this is what the configuration is now, no. 1 is ON and no. 2 is OFF.

[REDACTED]

~~CONFIDENTIAL~~

21 30 38 CC Roger.

21 30 40 P You might check that for us but that seems to be a rather late change and that's the configuration that we've been running in.

21 30 46 CC All right. I'll check.

21 31 09 CC We want your recorders in the position you are in right now.

21 31 12 P Roger, understand. We're in the configuration with no. 1 ON and no. 2 OFF.

21 31 15 CC That's affirmative. Very good.

21 31 17 P Roger.

22 08 20 CC Gemini 4, Houston CAP COM.

22 08 55 CC Gemini 4, Houston CAP COM.

22 09 44 CC Gemini 4, Houston CAP COM.

22 09 56 CC Gemini 4, Houston CAP COM.

22 10 00 P Go ahead Houston, Gemini 4.

22 10 06 CC Roger, Ed. I got a little information to pass along to you here - are you reading okay?

22 10 17 CC Gemini 4, Houston CAP COM.

22 10 20 P Go ahead, Houston. Gemini 4 is reading you five square.

22 10 24 CC Roger, Ed. We want you to resume your normal Flight Plan. We base this on the fact that we feel that you have 203 ft/sec  $\Delta V$  left and 63 revolutions you'll still be in a 81, 125.7 orbit. That will leave us enough for OAMS retro which we think will be 113 ft/sec at that time - are you getting this?

22 11 05 P Roger. Understand we expect at the 63 rev to be 81, 125. We'll be required 113 OAMS approximately that time and we're prepared to go into our normal Flight Plan.

22 17 17 CC Roger. Your orbit isn't decaying as fast as we had expected, has a decay factor of approximately 0.8. So we are very happy with your orbit and we don't feel you're going to need an orbit adjust.

22 11 32 P That's right, it sounds good. That's this streamlined Gemini capsule.

~~CONFIDENTIAL~~

[REDACTED]

22 11 37 CC Also, this is based on the amount of fuel used up in your first orbit. We're using that as a basis.

22 11 44 P Roger.

22 11 46 CC Go ahead and try your Apollo Landmark Identification, but remember, the thing is 92 miles away so don't use very much fuel looking for it. I recommend that you reduce your use of fuel from now on.

22 12 06 CC Okay.

22 12 08 P You're starting to get broken up, Houston ..... Houston do you read Gemini 4?

22 12 15 CC Roger, read you.

22 12 18 CC You're starting breakup; you seem to have a loud background noise.

22 12 23 CC Roger, I'll get these for you when we pick up Bermuda, then.

22 12 27 P Roger.

22 12 49 CC Gemini 4, Houston.

22 12 58 CC Gemini 4, Houston.

22 13 09 CC Gemini 4, Houston CAP COM.

22 13 13 P Go ahead, Houston, Gemini 4.

22 13 16 CC Roger. What is the condition of your fan there? Are you on one fan or two fans?

22 13 23 P We are on one fan, we have been on one fan for the last 2 hours.

22 13 28 CC Roger, how's your comfort?

22 13 30 P It's not bad. It gets a little warm in here. It seems to get warm when I go to sleep. I don't know why. It should get cold then, but seems to warm up then and we put them on for about 3 hours, two fans while I was asleep.

22 13 43 CC Roger.

22 13 45 P It seems to get a little warmer in this bunny suit.

22 13 47 CC Yes, I'm not surprised.

22 13 49 P Roger.

[REDACTED]

~~CONFIDENTIAL~~

22 13 52 CC Okay, the last thing I tried to get to you before I lost you a few seconds ago was the judicious use of fuel. They think you have enough to complete the whole Flight Plan now.

22 14 05 P Understand. Why don't you give us a call on these landmark sightings?

22 14 09 CC Roger, don't worry about that one in Africa because that is some 19 miles away and you are only 11<sup>4</sup> miles high at this time.

22 14 19 P Roger, we will be looking for it. That's a real good one; we'll look for it but we won't use as much fuel. Looks like Jim's corked off pretty well. He hasn't stirred the last hour and a half.

22 14 31 CC Okay, I had a news release for him here, about Mike's baseball team. You want to take it and pass it on to him?

22 14 36 P Rog, pass it up.

22 14 38 CC Okay, the Hawks won their Peewee League 3-2. They beat the Falcons. The Hawks got 3 runs on 2 hits, the Falcons got 2 runs on 3 hits.

22 14 50 P Roger, understand, Hawks won 3-2.

22 14 56 CC Roger. Hey, here's the headline of the Post today; you might pass along also, sounds pretty good. The big headlines are "Aw, Ed, Please Get Back In the Spaceship."

22 15 10 P What was that? Say it again.

22 15 14 CC The headlines are: "Aw, Ed, Please Get Back In the Spaceship."

22 15 18 P I'll give them to him when he gets up.

22 15 21 CC Say again.

22 15 23 P Come in, Gus, I'll tell you. It was a little tough to get in.

22 15 29 CC I can't read you now, say again.

22 15 31 P It was tough to come in and it was a little tough to get back in, too. But it sure was something out there!

CC Yes, I bet! I envy you.

22 15 41 P Roger, it was really great. Were ya'll reading us? We never knew when you were reading us or not.

~~CONFIDENTIAL~~

[REDACTED]

22 15 48 CC Yes, your VOX was keyed all the time and we couldn't get in or try to tell you that your time was up and to get back in. We could never get through to you at all.

22 15 55 P Oh, is that right? I'm glad you didn't.

22 15 58 CC I could tell that.

22 16 02 P It was difficult to take pictures out there with that rig, ..... was fine. We tried to get some pictures there ..... but we never did get with my still camera pictures to my satisfaction.

22 16 13 CC Say.

22 16 19 P Reel on the outdoor 16-mm. We should be getting something with that.

22 16 21 CC Yes, I hope you get some good ones. Could you give us Quantity Read for about 10 seconds?

22 16 24 P Quantity is coming for 10 seconds.

22 16 30 CC Have you had anything to eat yet?

22 16 32 P I am in the middle of my first course of soup and I'm expected to get a little chicken salad and finish off with a fruit salad and orange juice.

22 16 46 CC Okay, we got your Quantity, so we will leave you alone and let you eat.

22 16 50 P Say again.

22 16 52 CC I said you can turn your Quantity Read OFF and we will leave you alone and let you eat.

22 16 56 P Well, it was nice to talk to you and get all the news from the home front. As we went over Houston, I could actually see. When I was outside, I could see the Gulf and Galveston Bay and I could see right on up into Clear Lake.

22 17 10 CC Could you see the Domed Stadium?

22 17 13 P I was looking for it but I couldn't pick it out. I didn't see it. Say, if I could have spent time looking down I could have seen a lot. I can see a heck of a lot more from outside the spacecraft than inside. Things are very much clearer.

22 17 27 CC Yes, I bet.

[REDACTED]

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22 17 30 P Really, one of the prettiest sights I saw was when I looked down and saw the southern tip of Florida and the island of Cuba and Puerto Rico and Santa Domingo. It was really quite a view. The colors of the blue and the blues as the water deepened out there, with the island was quite a view.

22 17 59 CC Hey, Ed, when you came over on the night pass could you actually see the buildings?

22 18 06 P On the night pass?

22 18 08 CC Yes, you said at night view you could see .....

22 18 10 P No, I couldn't. You might have misunderstood me. I couldn't see any buildings. And you might relay to the Australians that they're sure running up the electricity bill. I could see as we came over on this last pass. I could see the lights of Sydney loud and clear and the usual thunderstorms up north.

22 18 30 CC Very good. Hey, Ed, you were talking about walking on the spacecraft. Were you actually walking on it?

22 18 44 P Yes, I was. I was using the tether to pull myself down toward the spacecraft and I was right on top of it, as a matter of fact. The next time I get into this type of tether operation - it looks pretty good but it still is hard to get any traction on the top, but if you pull yourself down you can get a little bit.

22 19 09 CC You forgot your magnets, I guess.

22 19 12 P Yes. It looks like it will be pretty good on the adapter, too, so that might help a lot.

22 19 20 CC Yes.

22 19 22 P .....

22 19 26 CC We are losing you.

CANARY

22 26 35 CC Gemini 4, Canary CAP COM.

22 26 39 P Go ahead, Canary, Gemini 4.

22 26 41 CC Roger, just wanted to let you know all your systems look green.

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[REDACTED]

22 26 45 P Roger. They look good from up here also. The  $O_2$  is staying down around 940, 947.

22 28 37 CC Gemini 4, Canary CAP COM. LOS-1. Do you have anything for us?

22 28 51 CC Gemini 4, Canary CAP COM.

22 28 53 P Roger, Canary. Gemini 4.

22 28 54 CC We're coming up on LOS. Do you have anything else for us?

22 28 57 P Negative, you just caught me with a mouthful.

22 28 59 CC I'm sorry.

22 29 01 P No sweat. I'm just kidding you. Everything's fine up here.

CARNARVON

22 57 51 CC Gemini 4, Carnarvon CAP COM.

22 58 00 CC Gemini 4, Carnarvon CAP COM, over.

22 58 06 P Go ahead Carnarvon, Gemini 4.

22 58 08 CC We'll let you know when we're done here. We're reading you loud and clear and you look real good from here on the ground.

22 58 15 P Roger, everything's going smooth up here. We delay a little bit when we answer you because we turned our UHF transmitter on at that time and we need a little time to warm up.

22 58 25 CC Roger, ..... the rest of the flight.

22 58 27 P Roger, we are down at a minimum power-down configuration most of the time now, and whenever you call us, there's usually a little bit of a delay between our answer.

22 58 37 CC Roger, understand. If you have anything else, we'll be down here waiting.

22 58 42 P You might ask..... if they can work up some settings for inside-the-spacecraft pictures; we have 200 feet of film. I have taken a few in here already, but I thought they might give us a suggested light meter reading.

[REDACTED]

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22 59 01 CC Roger. We'll see if we can get it for you.

22 59 02 P Also get a movie camera 16-mm setting for inside the spacecraft. We have a large but eye, and we thought that we'd take some pictures with in inside if we had a little film left over.

22 59 17 CC Roger.

22 59 37 P Carnarvon, Gemini 4.

22 59 40 CC Gemini 4, go ahead.

22 59 41 P Roger, you might relay that we saw the lights of Sydney. I don't know whether they turned them on or not, but if they did they sure ran up the electrical bill. I saw them on the last orbit. We went right over the town of Sydney and they were really loud and clear.

22 59 56 CC Okay, the people appreciate that.

22 59 58 P ..... big electrical bill .....

22 00 03 CC .....

23 00 05 P Okay.

23 45 36 CC Gemini 4, CAP COM.

23 45 39 P Go ahead, CAP COM. This is Gemini 4.

23 45 47 CC I'd like to give you your map update.

23 45 50 P Roger. Go ahead.

23 45 51 CC Okay, Revolution 16, use 161 West, at a G.m.t. of 16 14 30.

23 46 03 P Roger. Understand 161° West and 16 14 30.

23 46 09 CC Roger, and we'd like to know what was the status of the experiments MSC-1, -2, and -3. Recall?

23 46 18 P Roger, we have been doing them as per Flight Plan. We left MSC-2 and -3 on after our thrusting a little longer than planned. We turned it off at about 4:20, if I recall right. We were planning to turn it off around 3:00.

23 46 35 CC Roger.

23 46 39 P .....

23 46 42 CC Roger.

23 46 47 CC Jim still asleep?

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23 46 48 P Say again, please.

23 46 51 CC Is Jim still asleep?

23 46 54 P Roger. He's still asleep.

23 46 58 CC What's the housekeeping like in there? Have you got junk all over?

23 47 01 P No, it's not too bad. We've got the bulk of all the extra stuff stored underneath our legs behind our heels, it's stuff you don't use very much anyhow so it's not much of a discomfort. But we've got the cameras and bags and refuse bags pretty well stuck all around on the Velcro.

23 47 20 CC Okay. Have you tried getting any of that stuff back into the AFT food boxes?

23 47 25 P No, the refuse will be - we're planning to have a big dump back there into the right food box.

23 47 33 CC Roger.

23 47 35 P Actually, it's not too bad.

23 57 37 CC Okay.

23 47 45 CC Tried to put that cable back, Ed?

23 47 50 CC Gemini 4, CAP COM.

23 47 53 P Go ahead, CAP COM. Gemini 4.

23 47 55 CC Have you actually tried to put that cable back in the AFT food box?

23 48 02 P Negative. I haven't planned to put it back there. I have no plans for it.

23 48 15 CC Roger. I understand you haven't tried but you have a place for it. Is that right?

23 48 20 P That's affirmative.

23 48 21 CC Okay.

23 49 23 CC Where do you have it?

23 48 25 P I'm going to hold it in my lap during reentry.

23 48 30 CC In your lap?

23 48 31 P Roger.

23 48 35 P When you stow it in the back box there, it will take up just about the whole box and we would have to put garbage all over the place.

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23 48 43 CC Okay.

23 49 01 CC After sleeping it over, do you feel any different about opening the hatch?

23 49 09 P No, we're very definite about not doing that.

23 49 11 CC You think you can live with all that stuff in there?

23 49 15 P That's affirmative.

23 49 16 CC Okay.

23 49 55 CC Ed.

23 50 00 CC Gemini 4, CAP COM.

23 50 01 P Go ahead CAP COM, Gemini 4.

23 50 02 CC Have you had any waste management problems?

23 50 05 P Negative. We've dumped some bags. We've had a couple of other urine dumps - hasn't failed to dump.

23 50 12 CC Roger.

23 50 16 P We haven't tried the bag yet.

23 50 19 CC Roger, understand.

23 50 52 CC Gemini 4.

23 50 54 P Roger, go ahead CAP COM.

23 50 56 CC Do I understand - you have ..... You have the umbilical under your feet now and you're going to hold it in your lap for reentry. Is that correct?

23 51 03 P That's affirmative. We figured that's the best way as far as the ejection envelope is concerned.

23 51 08 CC Okay, but you feel it's pretty well out of your way under your feet now?

23 51 11 P Yes it is. It's fine. It's under my feet, ..... under there also.

23 51 17 CC Well, can you stretch it out, get comfortable or do you feel pretty cramped?

23 51 22 P No, that's no sweat. I'm - I can stretch out.

23 51 25 CC Okay, good.

23 51 27 P I've also taken my sleeves off and Jim's got those under his feet.

23 51 42 CC Roger.

23 51 45 CC We're very happy down here.

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[REDACTED]

23 51 47 P Roger, it's very nice up here, Gus. Everything's running right along.

23 51 57 CC Have you noticed any moisture problems?

23 51 59 P No. As a matter of fact, I've been running face-plate open for quite a while just to take a look around and see if we are picking up any. In fact, the relative humidity has dropped a little bit in here and we have no apparent moisture anywhere in the spacecraft.

23 52 12 CC Roger.

CANARY ISLANDS

23 57 24 P Houston CAP COM. Gemini 4.

23 57 27 CC Gemini 4, Canary CAP COM. Go ahead.

23 57 30 P Roger, Canary. Gemini. We're back on our regular Flight Plan, but at this time our Flight Plan goes in with not much detail as far as specific times. Would you relay to Houston that we'd like to have our Flight Plan updated with good, specific times as we go along to aid us in getting started on our experiments. They have the same flight plan we have. We'd like to have a bit of updating and bring the times up to date.

23 58 01 CC Roger, Wilco.

23 58 19 CC Gemini 4, Canary CAP COM. You look good from the ground.

23 58 23 P Roger, she's all in good shape up here.

24 00 05 CC Gemini 4, Canary CAP COM.

24 00 08 P Go ahead, Canary.

24 00 12 CC Our congratulations! How does it feel to have been flying for 24 hours?

24 00 15 P That's affirmative, I was just looking at my clock up here now - just right on the second, isn't it?

24 00 51 P Canary, Gemini 4.

24 00 53 CC Go ahead.

24 00 55 P Roger, we got three more ..... three more to go.

24 00 59 CC Roger.

[REDACTED]

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CARNARVON

24 32 15 CC Gemini 4, Carnarvon CAP COM.

24 32 28 P Roger, go ahead, Carnarvon. Gemini 4.

24 32 31 CC Roger, read you loud and clear. How do you look up there?

24 32 34 P Roger, ..... looking good - everything is looking good - I got .....GO-NO-GO report?

24 32 40 CC That's negative at this time.

24 32 43 P Roger, that's all we can find.

24 32 44 CC Okay. You look real good down here.

24 32 48 P Roger, I'm powered down - all the lights - looks like I'm pulling about 13 to 14 amps and everything is down. The lights are down, I'm observing the stars right now, and the Command Pilot is still asleep.

24 33 05 CC Okay, what did you say about the lights?

24 33 07 P I have the lights all the way down and everything is normal in the spacecraft.

24 33 11 CC Roger, understand.

24 33 18 CC They don't have much of a change right now in the Flight Plan. They'll update you over the States.

24 33 21 P All right, that sounds fine. I guess they got the message to keep the event times updated?

24 33 29 CC Roger.

24 33 34 P I can't see down at this time. I'm oriented to look at the stars.

24 33 37 CC Say again.

24 33 39 P I say, I can't see down toward Australia, this time - she's oriented up toward the stars - I've got your update.

24 33 47 CC Roger. I gave you a T<sub>X</sub>.

24 33 49 P Roger.

24 34 01 CC You said the Command Pilot is asleep. He doesn't happen to have that oral probe in his mouth, does he, for a temperature?

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24 34 10 P No, I'm afraid he's not that cooperative.  
 24 34 14 CC Okay, we're getting a reading down here.

CANTON

24 53 44 CC Gemini 4, Houston CAP COM. Over.  
 24 53 51 CC Gemini 4, Houston CAP COM. Over.  
 24 54 04 CC Gemini 4, Houston CAP COM.  
 24 54 14 CC Gemini 4, Houston CAP COM, Houston CAP.COM.  
 24 54 54 CC Gemini 4, Houston CAP COM.  
 24 54 57 P Go ahead Houston, Gemini 4.  
 24 55 01 CC Roger, Ed. Will you go to O<sub>2</sub> High Rate and bring  
 your cabin pressure back up -- if you haven't al-  
 ready done so?  
 24 55 23 CC Gemini 4, Houston. Did you read that?  
 24 55 35 P Hello Houston CAP COM, Gemini 4.  
 24 55 39 CC Gemini 4, Houston CAP COM. If you read, use your  
 O<sub>2</sub> High Rate to bring your cabin pressure back up.  
 24 56 36 CC Gemini 4, Houston CAP COM.  
 24 56 39 P ..... Gemini 4.  
 24 56 44 CC Roger. Use your O<sub>2</sub> High Rate to bring your cabin  
 pressure, if you haven't done so.  
 24 56 51 P Roger. It's going up now. It's been holding in  
 that vicinity, though, for some time.  
 24 56 57 CC Roger. How are you getting this relay?  
 24 57 02 P I'm not reading you very well, but right now I'm  
 pointed small end .....  
 24 57 20 CC We'll talk to you over the States.  
 24 57 28 P Houston CAP COM, Gemini 4 .....  
 24 57 34 CC Gemini 4, this is Canton. You are coming in very,  
 very weak.  
 24 57 41 P I'm small-end-forward with the small end pointed  
 straight up. I think that's part of the problem.

130



24 57 54 CC Gemini 4, this is Canton. I was unable to understand your last. Can you repeat?

24 58 03 P Gemini 4, ..... I'm pointed small end up; therefore you probably can't read me very well.

24 58 28 CC Roger, Gemini 4.

GUAYMAS

25 10 11 CC Gemini 4, Guaymas CAP COM.

25 10 27 CC Gemini 4, Guaymas CAP COM.

25 10 29 P Go ahead, Guaymas, Gemini 4.

25 10 32 CC Roger. We've got you green here. How are you doing?

25 10 34 P Roger. fine here. Do you want the GO-NO-GO data?

25 10 41 CC Negative. Cape advises you are going to be live over the States. Do you have anything you want to pass on maybe, before we put you on radio and TV?

25 10 51 P ..... please.

25 10 54 CC Gemini 4, do you read?

25 10 56 P Negative. You were blocked out. Say it again, please.

25 10 59 CC I say, do you have anything to pass on to me before we put you live on TV and radio over the States?

25 11 05 P Roger, I understand. Negative. Is there anything in particular that they were looking for?

25 11 11 CC Negative. I guess they just want to make you famous.

25 11 13 P Oh yeah!

25 15 13 CC Gemini 4, Houston CAP COM.

25 15 16 P Go ahead, Houston. Gemini 4.

25 15 20 CC Roger. We're giving you GO for 21-4, and we're ready to give you your 18-1 time if you are ready to copy.

25 15 27 P Stand by one.

25 15 36 P We're ready to copy. Go ahead.

25 15 39 CC Okay. ΔV 180. 4+15. 18 02 57. 3+06. 9+08.





25 15 56 P Roger. Understand. 180. 4+15. 18 02 57. 3+06.  
 5+08.

25 16 08 CC Negative on the last. It's 9+08.

25 16 12 P Roger. 9+08.

25 16 16 CC Roger. And 18-1 without burn is 17 56 11. 8+00.  
 15+41.

25 17 00 P .....17 56 11. 8+00. 15+41.

CC .....

25 17 26 P Roger. 21- is 23 58 11.

CC ..... (not available)

25 17 41 P Roger, ready to copy. Go ahead.

CC ..... (not available)

25 18 13 P Roger. Understand sunset start time is 18+13, AOS  
 start is 18+20. HF/DF is 18, HF/DF is 18+32.

CC ..... (not available)

25 18 54 P ..... computer is coming up.

CC ..... (not available)

25 19 17 P Affirmative. Sunrise is 19:07.

CC ..... (not available)

25 21 03 CC Gemini 4, CAP COM.

25 21 09 C Go ahead, Gemini 4.

25 21 11 CC Hey, it sounds like a new voice.

25 21 12 C Roger, I'm awake.

25 21 15 CC You've been asleep for days.

25 21 17 C You are right. What were those last four times for?

25 21 23 CC Say again.

25 21 23 C What were those last four times for - 17:31, 38,  
 48 and 16:58?

25 21 32 CC Okay. Your Night Check is to start at 17:31. Your  
 HF/DF Check at night is 17:38 on and on at 17:48.

25 21 54 CC You get that?

25 21 55 C Roger. We got it. I thought you said that my night  
 start time was 18:20.

25 22 04 CC Say again.

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25 22 05 C Roger. You gave us a time earlier of 18:20 as the AOS start time for night.

25 22 12 CC No. 18:20 is the start time for your day check.

25 22 17 C Oh. Okay.

25 22 19 CC Let me run down your day column and make sure we got it right.

25 22 27 C Okay.

25 22 28 CC Okay. Start time is 18:13. Okay, then we go down to AOS times for HF/DF - 18:20 on the day. And then the HF - next time in that column on the HF - G.m.t. start time is 19:07. Still with me?

25 23 00 C Roger.

25 23 02 CC Okay, then we take the night column - it's 17:31, 17:38, 17:48, and your HF - your sunset HF/DF start time is 16:58.

25 23 21 C Roger, we've got them.

25 23 26 CC Okay. We'd like to know which light burned out in your sextant.

25 23 31 P The light that burned out is on the readout area.

25 23 36 CC On the what?

25 23 37 P ..... you read out the angle in.

25 23 42 CC Roger.

25 23 58 CC Hey, Jim. Did you sleep well?

25 24 02 C Not particularly. I just rest, and I've been dozing on and off, but I really haven't had a sound sleep this last time.

25 24 10 CC Does the radio awake you?

25 24 14 C Yes, as a matter of fact, it does. We ought to be able to turn it off completely.

25 24 18 CC Roger. Have you tried your fingertip lights in that sextant? Will that help?

25 24 26 C No. We can find some other light. It just means that the operation is going to be slowed down, and I'm sure we can really do it as it was designed.

25 24 35 CC Okay.

25 25 06 CC Jim?

~~CONFIDENTIAL~~

[REDACTED]

25 25 09 C Go ahead.

25 25 10 CC Have you had anything to eat or drink since you've been awake, or haven't you been awake long enough?

25 25 15 C Roger. I did not get all of that question. As soon as I woke up I had about 5 swallows of water, and I woke up in the middle of my nap and took about 5 swallows, also.

25 25 24 CC Okay. The sawbones advises you ought to go ahead and get something to eat now.

25 25 29 C Roger.

25 25 40 CC You can turn your computer off now.

25 25 43 C Okay, it's off.

25 25 45 CC Roger.

25 25 46 C Did you give us a good load?

25 25 49 CC Stand by. Roger, we got you a good load.

25 26 00 C Okay.

25 26 30 CC Gemini 4.

25 26 33 C Go ahead.

25 27 35 CC We also got the 21-4 TR time in.

25 26 39 C Roger. 21-4 TR time. Thank you.

CANARY ISLANDS

25 32 01 CC Gemini 4, Canary CAP COM.

25 32 04 C Go ahead.

25 32 05 CC Roger. What is the status on your ACME or IGS power supply?

25 32 12 C It's on right now.

25 32 14 CC Roger.

25 32 17 C Okay. It's off now.

25 32 18 CC Roger. It's off.

25 32 20 C Roger. We're going to have to put the ACME back on. We've got to go out HF/DF. Got to be right side up.

25 32 25 CC Roger. Understand.

[REDACTED]

**[REDACTED]**

25 32 31 CC A Flight Plan change. You will contact the Command Pilot Type 2 Medical Pass at Carnarvon this revolution.

25 32 41 C Okay. Command Pilot Type ..... at Carnarvon.

25 32 46 CC Roger. You were garbled. That's a Type Two Medical Pass at Carnarvon.

25 32 52 C Roger. Understand.

25 33 41 CC Gemini, Canary CAP COM.

25 33 43 C Go ahead.

25 33 44 CC Have you tried unplugging your headset at the neck since you can't get your volume all the way down with the knob?

25 33 52 C No, I haven't done that. We'd like to continue to have communications procedures ..... I don't think we want to do that.

25 34 02 CC Roger.

25 34 31 CC Everything looks good on the ground.

25 34 33 C Roger, thank you.

26 04 30 C It is now 17:21 G.m.t. and I don't know exactly which way I'm pointing, but there's a bunch of rays, all extending up from the earth toward the sky. It looks like it's probably the sunrise. The rays are actually sticking up vertically and I'm taking two pictures of them with the Contarex. It looks a lot like the Northern Lights. ....

26 05 13 C It looks like a rain storm with rain hanging out except that it's .....

26 05 17 P How about yawing a couple .....

26 05 20 C ..... the other way?

26 05 22 P .....

26 05 39 C .....

26 05 51 P How far around do we have to come yet?

26 05 53 C Can you see it?

26 05 55 P What?

26 05 59 C ..... parallel.

26 06 01 P ..... to come around to the side?

**[REDACTED]**

[REDACTED]

26 06 03 C Yes.  
26 06 04 P .....  
26 06 06 C .....  
26 06 10 P Those are the lights we saw the other night.  
26 06 12 C Was it like that, Ed?  
26 06 13 P Huh?  
26 06 14 C It wasn't like that.  
26 06 17 P ..... horizon.  
26 06 22 C ..... California.

CARNARVON

26 06 25 CC Gemini 4, Carnarvon CAP COM. If you read, will the Command Pilot please insert the oral temp probe into his mouth. Do not acknowledge.  
26 06 27 C ..... a mass of lights.  
26 06 36 P Where is it, Jim?  
26 06 41 C We passed right over it. We ought to be able to see it. It think it's just a bunch of lights.  
26 06 49 P I'll bet that's it. I'll bet that's the sun coming up through the clouds.  
26 06 51 C .....  
26 06 53 P What?  
26 06 56 C .....  
26 06 58 P ..... all over the place ..... and everytime I came through here I could see some ..... lights.  
26 07 05 P What?  
26 07 10 C .....  
26 07 15 P .....  
26 07 27 CC Gemini 4, Carnarvon. If you read, start pumping up your blood pressure. Do not acknowledge.  
26 07 50 CC A little bit higher on your blood pressure. A little more. Cut. Full-scale.

[REDACTED]

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26 08 13 P The unusual display of night airglow looks like night airglow combined with some horizontal lights type effect occurring on 15, 26, and 27.

26 08 35 P The whole airglow layer looks lit up way out on the horizon.

26 08 58 CC Gemini 4, Carnarvon. We have a valid oral temp on the probe. How do you read? Over.

26 09 01 P I read you five square.

26 09 11 CC Gemini 4, Carnarvon. How do you read?

26 09 21 P CAP COM Carnarvon, Gemini 4. Read you five square.

26 09 24 CC Roger, looks good on the ground. What's your status up there?

26 09 29 P Our status is GO.

26 09 30 CC Okay. Stand by for Surgeon.

26 09 35 S Gemini 4, this is the Surgeon. Can you give me some information on your food and water consumption?

26 09 37 C Roger. This is Command Pilot. I woke up about 30 minutes ago. Then I had lunch.

26 09 46 S Gemini 4, Gemini 4, this is the Surgeon. Do you read? Over.

26 09 52 CC Gemini 4, Carnarvon CAP COM. Give me a readout on your food and water consumption.....

26 09 56 C Roger, this is Gemini 4. How do you read?

26 09 58 CC Loud and clear. How me?

26 10 00 C Loud and clear. I woke up about 30 or 40 minutes ago and then - actually I didn't wake up right then - just sort of sitting there resting. I really haven't been having much luck sleeping. I had a drink of water when I first woke up, about 5 gulps. Then I had another one there about halfway through my sleeping period, about 5 gulps. I plan on eating something as soon as I get through with my HF tests.

26 10 24 CC Roger, understand.

26 10 28 C So far I've been through three meals. I'm going to eat meal 4 on the first day.

26 10 34 CC Roger. Understand.

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26 10 36 C Doctor, be advised, I'm having a lot of trouble with this blood pressure cuff. I can't get it to stay in my suit and when I do get it in it doesn't want to bleed down. So if you see some erratic pump-ups, it's because I'm not having much luck with it.

26 10 50 CC Okay.

26 11 00 S Gemini 4, this is the Surgeon.

26 11 03 C Go ahead, Surgeon.

26 11 05 S Could you repeat again what you ate out of meal 3 or meal C? Meal Charlie.

26 11 11 C Roger. I ate everything out of it except the orange juice and I lost that some place. I don't know where it went.

26 11 16 S Okay. Is that all you have had to eat since you ate meal Baker?

26 11 20 C Roger. Oh yes, that's right, I didn't eat the toast either. That toast is the crumbly toast that we agreed not to eat.

26 11 28 S Okay. So you ate the other items. Thank you.

26 11 32 S Can you explain a little about this blood pressure problem? Are you sure you didn't have your thumb over the holes where the air comes out?

26 11 38 C I have had the same problem ever since lift-off. I can't get the darn thing to stay in my suit. It keeps popping out of my suit, and then I have quite a difficult time getting it to bleed down sometimes.

26 11 49 S We got a valid blood pressure but the temperature seems - the pressure seemed to hold up for quite a while before it began to bleed off.

26 11 55 C That's right. Most of the time it seems to bleed out around where I plug it in rather than through the hole it's supposed to bleed from.

26 12 02 S Okay, this is the Surgeon out.

26 12 04 C Roger.

26 12 05 CC Gemini 4, Carnarvon CAP COM. I updated your TR. they did not get a valid time in at the Cape. You now have a valid time for the 21-4. Same GMIRC relayed to you by Houston CAP COM.

27 12 18 C Okay. I've got a good load for the 21-4. Right?

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26 12 20 CC A good load and a good time.  
26 12 23 C Okay. I've got a good spacecraft so I probably won't need it.  
26 12 26 CC That's the way we want to go.  
26 13 04 CC Okay. Be advised the load in your computer is 18-1, with maneuver load. Your TR time is a 21-4 with maneuver time.  
26 13 10 C Okay, we got a 18-1 load and a 21-4 time. Right?  
26 13 00 CC That's affirmative.

HAWAII

26 35 58 CC Gemini 4, Hawaii CAP COM.  
26 36 02 C Come in, Hawaii. Gemini 4.  
26 36 04 CC Roger. Be advised your two wives are at Houston and when you get best reception over the States they will be in communications with you.  
26 36 17 C Very good.  
26 36 22 CC All systems look good on the ground.  
26 36 49 P Roger. Be advised, we just conducted an HF test starting at 17:31 and had no returns from any stations on the range. Do you know whether any of the stations are reading us?  
26 37 16 CC Roger. We monitored you real weak on HF just now.  
26 37 24 P Roger. I understand. You didn't read us when we made our test then obviously because you gave us no response.  
26 37 31 CC Roger. We were copying till you gave your test. We did not copy then.  
26 37 36 C Roger. I understand you did not copy us while we gave our test.  
26 37 38 CC Affirmative. That is affirmative.  
26 37 41 P Roger. I guess Canton didn't either. We were just about right over them.

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CALIFORNIA

26 42 00 CC Gemini 4, Houston CAP COM.  
26 42 11 CC Gemini 4, Houston CAP COM.  
26 42 22 CC Gemini 4, Houston CAP COM.  
26 42 31 CC Gemini 4, Houston CAP COM.  
26 42 34 C Roger Houston, Gemini 4. Read you loud and clear.  
How me?  
26 42 38 CC Roger, you're a little weak but clear. I've got  
some updated Flight Plan information for you.  
26 42 46 C Stand by one.  
26 42 47 CC Roger.  
26 43 06 C Okay. Gemini 4 here. Go ahead.  
26 43 08 CC Okay. Delete the Apollo Landmark Runs 2 and 3.  
That area is cloudy and to help you on your Flight  
Plan there - Run 2 was to be at 28:30 elapsed time  
and Run 3 was to be at 30:05 elapsed time. Okay.  
The D-9 Experiment? do it in drifting flight if  
you do it. We don't feel that you should waste any  
fuel doing this one.  
26 43 48 C Let's see - D-9 around 20 hours and 30 or 40 minutes.  
26 43 45 CC Roger.  
26 43 46 C .....  
26 43 56 CC Okay. I've got a little news to pass on to you if  
you want it. PAO just handed me a news release to  
give you.  
26 44 04 C Yes, pass it on.  
26 44 06 CC You want to know what's going on in the world?  
Well, the Astros beat Cincinatti 8 to 3. Rusty Staub  
hit a homer. And in your boys' team, the Hawks beat  
the Falcons 3 to 2. Mike walked twice, was left on  
base once, and was forced out - forced to second the  
other time.  
26 44 27 C Roger. He had a good night.  
26 44 29 CC Yes. Okay, then. There were five air crewmen killed  
at Walker Air Force Base last night when a KC-135  
crashed on landing. Most of the rest of the news is  
concerned with the flight, and you know pretty well  
what's going on there so I won't repeat that to you.

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26 44 49 C .....  
 26 44 52 CC Say again.  
 26 44 54 C I think we know what's going on.  
 26 44 58 CC Don't admit it if you don't.

GUAYMAS

26 46 06 CC Gemini 4, Houston CAP COM. How do you read me now?  
 26 46 09 C Roger. You're loud and clear now, Houston.  
 26 46 13 CC Okay. We've got your wives here, so we'll put  
 Mrs. McDivitt on now.  
 26 46 20 C Roger.  
 26 46 21 CC Jim? Jim?  
 26 46 25 C What?  
 26 46 29 CC Do you hear me?  
 26 46 31 C Roger. I can hear you loud and clear.  
 26 46 34 CC Boy, you're doing great!  
 26 46 36 C Yes, we seem to be covering a lot of territory up  
 here. How are you?  
 26 46 42 CC For me?  
 26 46 45 C I say, how are you?  
 26 46 46 CC I'm fine, and how are you?  
 26 46 48 C Pretty good. I'm over California right now.  
 26 46 52 CC Get yourself over Texas.  
 26 46 55 C I'll be over Texas in about 3 minutes.  
 26 46 57 CC Hurry it up.  
 26 47 00 C How are the kids making out?  
 26 47 01 CC Fine. They think you're at the Cape.  
 26 47 05 C They think I'm at Cocoa Beach, huh?  
 26 47 08 CC That's where they think.  
 26 47 13 C Is everything going okay?  
 26 47 14 CC Yes, beautifully. Beautifully.  
 26 47 20 C Are you behaving yourself?

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[REDACTED]

26 47 23 CC I'm always good. Are you being good?

26 47 29 C I don't have much choice. All I can do is eat, sleep, and look out the window.

26 47 34 CC No room to move around?

26 47 36 C What?

26 47 38 CC No room to move around?

26 47 39 C Not too much.

26 47 40 C Ed's cluttering up the place.

26 47 48 CC Turn the computer on.

26 47 51 C Turn my computer on. Yes, ma'am.

26 47 54 CC Okay, sir.

26 48 04 C Computer's ON.

26 48 07 CC Roger.

26 48 15 CC Is Ed awake?

26 48 17 C Yes, he's here.

26 48 19 CC Be a good boy now, kid.

26 48 22 CC We're going to switch headsets.

26 48 28 C Sounds like you've got your hands full, Gus.

26 48 31 CC Say again.

26 48 33 P Are you on top of the situation? Keeping things straight?

26 48 37 CC Is this Ed?

26 48 42 CC We'll put your pad on here in a second.

26 48 44 CC Good morning.

26 49 48 P You've got to push the button, honey.

26 48 51 CC Good morning.

26 48 53 P How are you doing?

26 48 54 CC Fine!

26 48 57 P You have to push the button when you talk and let it go so I can talk.

26 49 03 CC You're really looking good.

[REDACTED]

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26 49 06 P Roger. It's looking pretty good from up here. We're passing over - coming up on the West Texas area. We'll be over Houston in a minute or so.

26 49 13 CC Good.

26 49 15 P .....

26 49 18 CC Didn't hear you.

26 49 25 P Patty, repeat it.

26 49 27 CC It looks like you were having a wonderful time yesterday.

26 49 32 P Quite a time we had. It was quite a time.

26 49 35 CC I can't wait to talk to you about it.

26 49 39 P How are Eddie and Bonnie, honey?

26 49 41 CC Fine.

26 49 48 P Okay, honey. I'll see you later.

26 49 50 CC Okay. Have a good flight.

26 49 53 P Thank you, honey. Bye-bye.

26 49 55 CC Bye.

(missing some recording here)

26 52 01 CC ..... fuel and  $\Delta V$  situation. Did Ed explain it all to you?

26 53 07 C Roger. I had it pretty well figured out, I think, before you called up. I've been plotting it on the board up here, and it looks like if we get to the end with about 135 or so, we ought to make the grade. Is that it?

26 53 18 CC Yes. That's about the way we have it here. Just be careful on your use of it, and we may cut a few things out of the Flight Plan, but most of them you can go ahead and do as planned.

26 53 28 C Okay.

26 53 34 CC Will you be ready for your HF check in about 3 minutes or so?

26 53 38 C Roger. We're all set.

26 53 39 CC Okay. Did you receive any HF at all?

26 53 45 C Negative.

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BERMUDA

26 56 26 C Houston, did you call Gemini 4?

26 56 29 CC Gemini 4, Houston. Go ahead.

26 56 31 C Roger. You called me?

26 56 32 CC Negative. That was a mistake.

26 56 35 C Okay. We're going to start the HF Test.

26 56 37 CC Roger. We'll be listening.

26 59 32 CC This is Kano on air-ground on HF. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 - 9, 8, 7, 6, 5, 4, 3, 2, 1. Kano out

27 00 07 CC This is Tananarive on HF. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 - 9, 8, 7, 6, 5, 4, 4, 3, 2, 1. Tananarive out.

27 19 41 C This is Jim. I just took two pictures on the Hasselblad Back no. 7 and Frame nos. 11 and 12. Took two pictures of a sunset that just came up and we were approaching .....

27 20 17 P .....

27 20 22 C At 36 1/2 .....

27 20 34 C How much longer have we got on the .....

27 20 40 P 20 seconds.

27 21 07 P Oh, there's the Gegenschein! Forward, Jim. Put the nose down. The Gegenschein should be right up there.

27 21 15 C Where?

27 21 17 P Toward the .....

27 21 20 C .....

27 21 24 P It should be pretty close to .....

27 21 27 C .....

27 21 31 P No, that's the .....

27 21 34 C It looks like we're passing .....

27 21 36 P ..... you're on that .....

27 21 43 C .....

27 21 51 P Yes, just put it back.

C .....

[REDACTED]

27 22 05 P Well, I'll take the food out, and I'll go to work  
and start stowing the garbage.

27 22 07 C Okay. Let me .....

27 22 12 P I don't know, but I think I might have to break  
down and defecate.

27 22 18 C Let me put the ..... in the .....

27 22 20 P Okay.

27 22 27 C .....

27 23 00 P ..... 07.

27 24 00 C .....

27 24 07 C .....

27 24 10 C .....

27 24 12 P No, I think they're coming out.

27 24 17 P No, I think they're coming out straight.

27 24 24 P Let's ..... just for kicks.

27 24 26 C .....

27 24 30 P Yes. .... okay.

27 24 41 C .....

27 24 46 P No feces yet, huh?

27 24 50 C .....

27 24 59 P Your behind needs that extra space.

27 25 08 P .....

27 25 14 P 77.

27 25 32 P 66.

27 25 34 C .....

27 25 35 P No, I was just watching the pointer, I wasn't sure.

27 25 38 P .....

27 25 41 C .....

27 25 43 P One more over here .....

27 25 50 P 77.

27 26 05 P .....

27 26 22 P Okay, I've got lots of stuff to go in.

[REDACTED]

27 26 46 P It looks like it would be a good time to take my helmet off while I do this. .... take it off.

27 26 53 C Are you going to take it off?

27 26 55 P I have got to clean my visor.

27 28 00 C ..... yes ..... My nose is so dry.

27 28 58 C ..... Ha! Ha!

27 29 34 C What?

27 29 37 C I can't hear you either.

27 31 56 C Was it up in there?

27 32 00 P .....

27 32 02 C Don't you think if we could get ..... we could get something done .....

27 32 05 C Oh, yeah? ..... way back there now?

27 32 29 C .....

27 32 32 C Push all that stuff over .....

CARNARVON

27 39 51 CC Gemini 4, Carnarvon CAP COM.

27 40 04 CC Gemini 4, Carnarvon CAP COM.

27 40 21 C Gemini 4 here, Carnarvon.

27 40 24 CC Roger. Loud and clear. How me?

27 40 30 CC Gemini 4, Carnarvon. How do you read?

27 40 32 C Loud and clear, Carnarvon. Gemini 4. How me?

27 40 35 CC Roger. Loud and clear. What's your status?

27 40 44 CC How do you look up there?

27 40 54 CC How do you look up there, Gemini 4?

27 40 56 C Roger. Say it again. I didn't read anything.

27 40 59 CC Roger. How do you read me now?

27 41 00 C Sounds better.

27 41 02 CC Okay. You look good here on the ground. Are you ready to copy a block of updates?

27 41 09 C Stand by just one.

**[REDACTED]**

27 41 11. CC Roger.

27 41 50 C Carnarvon, Gemini 4. We're ready to copy.

27 41 53 CC Okay. This will be a little bit different. When I read you  $\Delta V$ , the first two numbers will be forward. The second two numbers will be aft. The same thing with  $\Delta T$ . The first group will be forward, and the second group will be aft. Do you understand that?

27 42 09 C Roger. We understand.

27 42 12 CC 20-4: 83 74. 2+18. 1+35. 22 24 30. 2+53 8+40.  
 21-4: 83 93. 2+18. 1+58. 23 58 09. 2+53. 8+52.  
 22-3: 83 54. 2+18. 1+08. 01 16 49. 3+30. 8+52.  
 23-3: 83 70. 2+18. 1+29. 02 50 39. 2+52. 8+40.  
 24-3: 83 88. 2+18. 1+51. 04 24 20. 2+47. 8+49.  
 19-DELTA: 83 72. 2+18. 1+33. 19 53 19. 11+01.  
 20-DELTA: 83 57. 2+18. 1+12. 21 26 47. 12+25.  
 21-DELTA: 83 43. 2+18. 1+12. 21 26 47. 12+25.  
 22-DELTA: 113.  $\Delta T$  is 2+24. 00 34 23. 13+00.  
 23-COCO: 83 73. 2+18. 1+32. 01 48 49. 10+48.  
 Over.

27 46 27 P Roger. Reading back. 20-4: 83 75. 2+18. 1+35.  
 22 24 30. 2+53. 8+40. -

27 47 00 CC Roger. You don't have to read all those back.

27 47 03 P Roger. You want .....

27 47 06 CC As you so desire, but we don't need it.

27 47 12 P I believe I got them all.

27 47 13 CC Okay, very good.

27 47 16 P There was one thing - that one you gave me, that was for 20 - it was the seventh one. Is that 20-1?

27 47 29 CC Was that 22-Delta 113 ft/sec?

27 47 33 P No. It was the seventh one you gave me, and it was for Area 20, and what was the area on it?

27 47 44 CC 20-DELTA.

27 47 46 P Roger, Delta. I got them all.

27 47 48 CC Okay. Very good.

27 47 50 P Carnarvon, can you give me a G.m.t. hack?

27 47 54 CC Roger. On my mark it will be 19:04. 3,2,1 -

27 48 00 CC MARK!

27 48 01 C Roger.

**[REDACTED]**



HAWAII

28 09 02 CC Gemini 4, Hawaii.

28 09 15 CC Gemini 4, Hawaii.

28 09 37 CC Gemini 4, Hawaii CAP COM.

28 09 50 CC Gemini 4, Hawaii CAP COM. Do you copy?

28 09 55 C Roger, Hawaii. Gemini 4. Go ahead.

28 09 57 CC Roger. Be advised the Command Pilot has a Type 1 Medical Pass over Guaymas.

28 10 05 C Roger, Type 1 over Guaymas. What's my AOS at Guaymas?

28 10 11 CC Wait one. 19 33 36.

28 10 16 C 33, Roger.

NOTE: Guaymas contact with S/C not on tape.

28 21 31 S We have received the good blood pressure. We're standing by for your food report. Have you eaten since your Carnarvon Aero-Med Pass?

28 21 38 C Negative, this is the Command Pilot. I just got the chow out, and I'm just about to set to it.

28 21 44 S Say again, Gemini.

28 21 45 C Negative, I have not eaten since my Carnarvon Aero-Med Pass, but I have the food out, and I'm just about to start.

28 21 52 S Roger, understand. Have you had any water?

28 21 55 C One very small drink, but I plan to have some water with my food later.

28 22 01 S Is the Pilot asleep?

28 22 07 S Gemini, Guaymas SIR JOHN.

28 22 10 C Roger, Guaymas. This is Gemini 4 here. The Pilot is still awake. He's getting something to eat now too. As soon as he finishes, he's going to sleep.

28 22 22 S Roger, Gemini 4. Guaymas SIR JOHN out.

28 22 40 P Guaymas, Gemini 4.

28 22 46 CC Go ahead, Gemini 4.

28 24 09 CC Gemini 4, Houston CAP COM.

[REDACTED]

28 30 11 CC Gemini 4, how do you read Houston CAP COM now?  
(No time) C ..... make it work.

28 35 50 P It seems like on the last roll, that the red light didn't come on at the end of the roll. We were running at the end of the roll when I noticed it, so we might have lost the tape dump between the last tape, 8, and the present tape, 6.

28 38 36 P The O<sub>2</sub> pressure gage is unsatisfactory in many respects. Not only does it not have enough scale, but, in our case now the ..... is set down low enough so that it is setting in the normal operating range. We're causing it to go to O<sub>2</sub> High Rate all the time to bring it down.

28 38 55 C Actually it's not the gage itself. It's the fact that the vent pressure is set lower .....

28 39 00 P That's right. .... bottles.

28 39 04 P ..... vent ground -

28 39 05 C It vents low in our cabin also. The cabin holds about 4.8 or 9 - normal.

28 39 33 C And the cabin vents at about 5.3.

28 39 48 P I can see them working on McDonnell now on this gain. I imagine there's fur flying. It's going to be when we get back. I'm going to hit them hard on it. I want to know just when they cleaned that. Remember? They were instructed to do it the day before the flight.

28 40 12 C The trouble is, it wasn't only that, but just getting your whole hatch closed. It never ever took that kind of pulling on it before. That rubber must have gotten real hard or something.

28 40 19 P Oh! You know one thing - see, I was giving you no help here at all.

28 40 26 C You never needed to give me any help - before.

28 40 28 P All I was doing was working this, and with the handle - I was fooling with the handle.

28 40 31 C Yes, but you have never given any help before though, really.

[REDACTED]

[REDACTED]

[REDACTED]

28 40 36 P In fact, you were saying, "Don't break the handle  
off!" Remember that?

28 40 37 C Was I?

28 40 38 P Yes.

28 40 40 C On this one?

28 40 43 P No, this one. You were telling me not to break that  
handle off?

28 40 48 C I don't remember that, but sounds like good advice.

28 40 50 P I was sitting in there. Heave! Heave! Ha! Ha! Ha!  
You remember that?

28 40 57 C I remember the "heave" part. Too bad that wasn't  
all on tape.

28 41 02 P If it is, it'd be tremendous, wouldn't it?

28 41 03 C Yes.

28 41 04 P That's what it took? It took both of us together  
to get it down.

28 41 12 P Well, I was down low enough, so that the hatch had  
come all the way down and stopped.

28 41 16 C I thought it actually stopped on your .....

28 41 21 P On the head?

28 41 24 C On your helmet.

28 41 26 P I don't think .....

28 41 28 C I pulled and you'd go down lower. Every time I'd  
pull, you would come down lower.

28 41 31 P I was doing this; every time I came down lower, my  
legs went "boink."

28 41 33 C Oh, yes.

28 41 35 P There at the end, though, they were all right.

28 41 43 C Not like in that zero-g airplane, is it? .....

"Aw hell. Well, pull the hatch."

28 41 48 P Yes.

28 41 50 P Well, we'll try another parabola.

28 41 57 P I think Tom better take a close look at it, too -  
with that chest pack.

28 42 02 C He's a lot bigger than you are.

[REDACTED]

[REDACTED]

28 42 04 P He's a lot less agile.

28 42 07 C I wonder if we ought to .....

28 42 14 P Yes, I know. You know how it is with that - that chest pack in there is tough in the zero-g airplane.

28 42 24 C Yes. Well, you tend to always overrate our own abilities, too.

28 42 28 P Yes.

28 42 38 P Now I can see the stars.

28 42 48 P No, but it's broad daylight over there, isn't it? Are we starting to go in?

28 42 52 C Broad daylight over here.

28 43 00 C We better vent one more time. That ought to get .....

28 43 07 P I hate to see us using up our oxygen that way.

28 43 09 C Yes. Well, we're going to use it up anyway. We don't .....

28 43 16 P Want me to get it?

28 43 52 P I'm going to start eating.

28 44 07 C I don't know what happened. I got a head start, and you get the first meal.

28 44 14 P It's the same meal.

28 44 16 C The first one .....

28 44 26 P Actually, we are behind.

28 44 28 C Yes, we are ..... 4 hours .....

28 44 38 P ..... try to eat.

28 44 43 C If you eat more, Ed, you wouldn't be able to do anything else. Isn't that the truth?

28 44 52 P We are not permitted to do a whole heck of a lot. Actually though, our Flight Plan is fairly leisurely. We're not really .....

28 45 07 C ..... S-5. ..... Hello, Houston. This is Gemini 4.

28 45 18 C You're broken up a little bit, but I can read you. Be advised we vented our ECS pressure down to about 910, 920.

28 45 40 P .....

28 45 52 C We really ought to be keeping better track where we are and where our retrofire points are.

[REDACTED]

[REDACTED]

28 46 03 P Yes.

28 46 09 P I don't know, there is not anything very difficult about it, though. There are just the times.

28 46 48 C Did I hear somebody call Gemini 4?

28 47 07 P Where is the Contarex? See it lately?

28 47 14 C It used to be over here. I don't know where it is now.

28 47 19 P I see it.

28 47 24 P You want it?

28 47 26 C Yes.

28 47 31 P Let me put this over here for a minute, Jim.

28 47 33 C Yes, why don't we just put it there?

28 47 36 P I've got to lean forward a minute to get to this umbilical.

28 47 48 P Here's your Contarex.

28 47 52 P Oh. The settings for the Contarex in the cabin - I wrote down and I'll get them and show you where they are.

28 48 33 P Okay. The 16-mm is f/11, if it's right in front of you, and f/28 if it's otherwise. The 35 is - with the ASA 200, which we have two rolls of - is 1/250 f/11 and .....

28 50 24 C Okay. Which Biomed recorder is on now?

28 50 26 P Right now mine is on.

28 50 28 C And yours is off.

28 50 30 P Mine is on. I turned yours off as you got up.

28 50 36 C You're wearing yours out. You're using yours too much .....

28 50 38 P All right.

28 50 43 C As soon as you wake up turn it off for quite a while.

28 50 50 P Doggone it .....

28 50 52 C Couldn't hear you.

28 51 31 P ..... boy. You know, the food you can get is your whole .....

28 51 33 C .....

[REDACTED]

[REDACTED]

28 51 36 P You notice tha

28 51 48 P You know this is a lot of trouble, but still you end up getting a lot of moisture and stuff with it, too.

28 51 55 C .....

28 52 07 P I highly recommend it on the long flight.

28 52 12 C Something to do.

28 52 14 P Yes, and I don't know what in the world, - where they can fit all this stuff.

28 52 42 C What do you want to do? Just ..... on your and ..... drink?

28 52 45 P Yes .....

28 53 21 P This isn't recommended with ..... gloves on, at all.

28 53 28 C Are you going to sleep a little while, or are you going to .....

28 53 31 P Yes, I think I will sleep. Go ahead and move around a little bit if you want to.

28 53 40 P I tell you, I like it better in here with the visor open.

28 53 48 C You know what?

28 53 50 P What?

28 53 51 C I think that i'll take a little more of that .....

28 53 52 P Eye stuff?

28 54 00 C Yes, with my helmet visor closed .....

28 54 02 P .....

C .....

28 54 45 P You know, maybe that's why we sleep decently for a while and then - CRUSH!

28 54 55 P Let's see what I can rig up with my faceplate open.

28 55 04 C ..... water.

28 55 11 P I wonder. Our relative humidity is fine, Jim.

28 55 19 P We've been ..... around with our faceplates open a lot.

28 55 31 P Actually, this relative humidity gage is kind of nice. It allows you to keep a tab on what's going on.

[REDACTED]

[REDACTED]

28 55 59 P Yes. This padded stuff might have bought us a little protection on the water problem and another problem with it though.

28 56 08 C What's that?

28 56 10 P The ammonia stuff.

28 56 25 C ..... anything ..... ammonia .....

28 56 33 P That's the way it was explained, anyhow.

28 56 45 C Do you want to try closing the faceplates and .....?

28 56 52 P You know, it doesn't bother me. I feel lousy every time I wake up. It takes you a while to get feeling good again.

28 57 11 P Here's the data book.

28 58 43 C ..... bag, but I don't know what I'm going to do with it.

28 58 45 P Which one? Oh, those .....

28 58 50 C Aw shoot!

28 59 04 C I wonder if we should dismantle the ..... what did you do with it?

28 59 06 P It's up in a bag behind my shoulder.

28 59 14 C Where's the lens?

28 59 16 P You don't have to dismantle it, Jim. The lens is right here.

28 59 19 C I know. I said, "Where is it?"

28 59 21 P The lens is right here.

28 59 23 C There's no need to really dismantle the other one if it works.

28 59 26 P No, that will fit that lens.

28 59 28 C No, I wasn't worried about the lens. I was worried about the camera.

28 59 31 P Oh.

28 59 38 P We've got a lot of movie film we might as well take.

28 59 40 C We've got a lot of other kinds of film we better take .....

28 59 50 P The only thing, we're not keeping good books on it right now.

[REDACTED]

[REDACTED]

28 59 52 C You're telling me! It's lousy!  
28 59 59 P You keep books and then you miss other things.  
29 00 04 C We've been using the blank paper .....  
29 00 07 P I think we've missed a section, though.

CARNARVON

29 15 00 CC Gemini 4, Carnarvon CAP COM. Over.  
29 15 09 C Go ahead, Carnarvon. This is Gemini 4.  
29 15 11 CC Roger. Read you loud and clear. You're looking good here on the ground. How are you up there?  
29 15 15 C Everything is fine.  
29 15 19 CC Pilot still asleep?  
29 15 22 C Went to sleep about 15 or 20 minutes ago.  
29 15 25 CC Roger. Can you give me the attitudes you were holding when you went past Ascension?  
29 15 31 C How long ago did I go past Ascension?  
29 15 35 CC Oh, let me figure it out here. Hold a second.  
29 15 50 CC About 20 minutes ago.  
29 15 54 C I can't tell you.  
29 15 56 CC Okay. Did you hear Cape CAP COM talking - Houston CAP COM to you on air-ground transfer over Ascension?  
29 16 03 C Roger. I did. He came in for about two or three transmissions, and then that was all I got.  
29 16 09 CC Roger, was he pretty garbled?  
29 16 11 C Yes, he was. And as a matter of fact, now that you mention it, I wasn't parallel to the ground. I was, I think, maybe pointing just about straight up.  
29 16 20 CC Roger. Your nose was straight up.  
29 16 22 C Just about like that. However, right now I'm pointing about straight down so we're in pretty good shape.  
29 16 27 CC Roger. I'm receiving you now, better than we have on almost any pass.

[REDACTED]



[REDACTED]

29 16 32 C Okay. Stand by. I think we're also on the adapter antenna here.

29 16 36 CC Roger.

29 16 38 C Yes, we went to adapter when we started playing with the HF check, and we just left it there. And it seems to be working just as well as the reentry does.

29 16 48 CC Roger. Seems a little bit better here.

29 16 51 C Yes, we sure had a lot of radio trouble to start with, but it seems to have all smoothed out.

29 16 56 CC That's the way we want to go.

29 16 59 C Hope things get better, and not worse, huh?

29 17 01 CC Say again.

29 17 03 C As long as things get better, instead of worse.

29 17 11 CC Let's give that stub antenna a try. If you don't read me in about 10 seconds, come back to this frequency on this antenna.

29 17 25 C Gemini 4 here, how do you read me on my nose?

29 17 28 CC Okay, I read you just slightly garbled. How me? Over.

29 17 31 C Loud and clear.

29 17 33 CC Okay. Let's go back to the antenna again.

29 17 35 CC The adapter.

29 17 37 C Roger. On the adapter. How do you read me now?

29 17 39 CC It's just about the same.

29 17 45 C How do you read Gemini 4 now?

29 17 52 CC Okay. We'd like you to go back to the nose stub antenna.

29 17 59 C Carnarvon, Gemini 4. You're all broken up now.

29 18 02 CC Roger. Will you switch back to your nose stub antenna.

29 18 12 CC How do you read me?

29 18 14 C I read you loud and clear. I'm back on the nose antenna.

29 18 19 CC Okay. Will you remain on that antenna, please?

[REDACTED]

[REDACTED]

29 18 19 C Okee-doke.  
 29 18 20 CC Okay.  
 29 18 26 CC Okay. We don't have anything else for you. We'll  
 be standing by if you have anything you want to say.  
 29 18 30 C Okay. Fine.  
 29 40 33 C .....

HAWAII

29 40 45 C ..... Hawaii .....  
 29 52 09 CC Gemini 4, Guaymas CAP COM.  
 29 52 12 C Go ahead, Guaymas. Gemini 4.  
 29 52 14 CC Roger. We've got you green, how are you doing up  
 there?  
 29 52 17 C Fine. I just saw something else up here with me,  
 but just as I was getting close enough to it to take  
 a good picture, the sun got in the way and I lost it.  
 29 52 26 CC Roger. We got some flight plan changes for you.  
 Want to stand by to copy?  
 29 52 29 C Yes. Stand by and let me see if I can find this  
 thing again.  
 29 52 45 C ..... and there are a great number of thunderstorms  
 around at the present time. Lightning is actually  
 lighting up the interior of the spacecraft. ....  
 activity ..... thunderstorms .....  
 29 53 35 C Okay. Go ahead. It doesn't look like I'm going to  
 see him again.  
 29 53 39 CC Roger. First item, delete D-8 at 23 hrs G.m.t.  
 29 53 49 C What is its elapsed time?  
 29 53 53 CC It's 31:45, elapsed time.  
 29 53 58 C What is it in G.m.t.?  
 29 54 02 CC 23:00 G.m.t.  
 29 54 06 C Okay. Got that?  
 29 54 08 CC Perform the D-8 that was scheduled for 33:20 elapsed  
 time - perform that at G.m.t. 40:00.

[REDACTED]

[REDACTED]

29 54 22 C Okay. Delete D-8 at 33:20 and perform it at 40:00. Is that right?

29 54 30 CC That's 00:40.

29 54 34 CC My fault. Did you copy that?

29 54 40 CC Okay. Third item scheduled do D-8, start time of 02:15 G.m.t.

29 54 52 C Okay. We'll have a new D-8 at 02:15 G.m.t. How many D-8's did we delete?

29 55 00 CC We deleted one; the one at 23:00 G.m.t.

29 55 06 C Roger. Thank you.

29 55 10 C You deleted that one and then put in the new one at 02:15?

29 55 13 CC That's affirmative.

29 55 14 CC Perform S-6 at 00:15 G.m.t.

29 55 22 C That was S-6 at what time?

29 55 24 CC 00:15 G.m.t.

29 55 30 CC We want you to use minimum fuel on that one.

29 55 33 C Roger. Use minimum fuel on all of them.

29 55 36 CC Roger. Roger.

29 55 38 CC ..... at 22:35 G.m.t.

29 55 48 C ..... you want S-6, one at 00:15 and one at 22:35. Is that correct?

29 55 55 CC That's affirmative.

29 55 57 C Okay.

29 56 04 CC Roger. S-6 is a cellular cloud formation.

29 56 11 C Roger.

29 56 13 CC That's the one at 00:15 G.m.t.

29 56 28 CC Okay. MSC Experiments 2 and 3 at a G.m.t. of 30.

29 56 39 C A G.m.t. of what?

29 56 41 CC 30 minutes.

29 56 44 C How many hours? I've got the 20 minutes; how many hours?

29 56 47 CC 00 30 00.

29 56 50 C 00:30.

[REDACTED]

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29 56 51 CC Roger. Go BFT on - BEF, rather, on Experiment 1 and 3.

29 57 02 C Okay. On MSC-2 and -3, G.m.t. is 00 30 00. Will be BEF at that time.

29 57 09 CC That's affirm - you still looking at that thing up there?

29 57 12 C No, I've lost it. It had big arms sticking out of it, it looked like. I only had it for just a minute. I got a couple of pictures with a movie camera and one with the Hasselblad; but I was in free drift, and before I could get the control back I drifted and lost it.

29 57 29 CC Good show.

29 58 17 CC Gemini 4, Houston CAP COM.

29 59 06 CC Gemini 4, Houston CAP COM.

29 59 17 CC Gemini 4, this is Houston CAP COM. Over.

31 04 37 CC Gemini 4, CSQ. Would you turn your computer on for a 21-4 update?

31 05 04 CC Gemini 4, CSQ. Be advised that this pass is live on the TV networks back home.

31 05 19 CC Could you give me your quantity read on?

31 05 31 CC I have got your 21-4 backup guidance quantities. Are you prepared to copy?

31 05 59 CC Gemini 4, CSQ. Do you copy?

31 06 10 CC Gemini, CSQ, do you copy?

31 06 14 C CSQ, Gemini 4. I read you.

31 06 17 CC Roger.

31 06 19 CC Are you, - what's your status for 33-1?

31 06 23 C We're good.

31 06 26 CC Okay. We're GO on the ground. I've got your 21-4 load prepared to transmit. Am transmitting now.

31 06 35 C Roger.

31 06 37 CC Roger. Your load is in. I've got your 21-4 backup guidance quantity. Are you prepared to copy?

31 06 49 C Go ahead. I'm ready.

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**[REDACTED]**

31 06 50 CC Roger. 21-4: Your  $\Delta V$  will be split between forward and aft. 56 feet forward at 1 minute 32 seconds. 120 ft/sec aft at 2+30. 01 days, 23 hours, 53 minutes, 23 seconds. 2+42. 8+46.

31 07 30 C Roger. 21-4: 56. 1+32. 120. 2+30.  
CC Gemini 4, Hawaii CAP COM.  
CC Gemini 4, Hawaii CAP COM.  
CC Gemini 4, Hawaii CAP COM. Do you copy?

31 09 42 C I'm getting the .....out..... and I'm pointing toward the south and somewhat more towards the rear than toward the sun.

31 10 00 C See any clouds up there to take pictures of?

31 10 03 P .....

31 10 49 P I guess I'll turn the computer off.

31 10 51 P ..... go back to ACME.

31 10 59 C Yes, what did you say?

31 11 01 P .....

31 11 01 C Oh, okay.

31 11 08 P I'm going to try to check the tape. Okay. I'm going down to ACME.

31 15 06 C ..... clouds. They look like stratus, but they certainly have a moderate effect to it. I wonder if all this weather is going to be in the Hawaiian land area?

31 15 13 P It looks like there are several layers to it. A very high cirrus layer ..... a little less cirrus ..... take some pictures of a series of clouds. It looks like we've got a high cirrus layer with fair weather cumulus below it.

CC I read it when you are ready to copy.  
C Roger. I have 3 53 23. Is that it?  
CC That is negative. It is 23 58 23.

31 16 42 C Roger, 23 58 23.

31 16 45 CC Roger.

31 16 50 C Thank you.

**[REDACTED]**

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31 16 58 CC Also, S-5 Experiment. MCC requests crew take terrain photos of any clear areas along the ground track and not wait until last day. Crew should identify which areas they are. Did you copy?

31 17 37 C Roger. Understand they want us to take areas of terrain wherever it is visible, and not to wait until the last day. Be advised we would like to save some film, though, until we get the opportunity to make a pass across the Southwestern United States tomorrow, and take a bunch of sequence photos along there, if it is okay.

31 18 00 CC Roger. That's fine with us. Roger. That's fine with us. Go ahead.

31 18 32 CC Gemini 4, Hawaii CAP COM.

31 18 35 C Go.

31 18 36 CC Can you give us your battery read-out if you did not give it to CSQ?

31 18 41 C Roger. We didn't give them to CSQ. We'll give them to you in just a minute.

31 18 45 CC Roger.

31 19 15 CC Gemini 4, Hawaii.

31 22 49 C Taking some pictures of clouds at 22:39. .... down here right - right now .....

31 23 06 C You know, we ought to count up our film .....

31 23 30 P You've got the Hasselblad over .....

GUAYMAS

31 25 33 CC Gemini 4, Guaymas CAP COM.

31 25 46 CC Gemini 4, Guaymas CAP COM.

31 25 50 C Go ahead, Guaymas. Gemini 4.

31 25 52 CC Roger. You look good from the ground. Would you turn off your Quantity Read Switch?

31 25 57 C It's off.

31 25 58 CC Roger. I'm standing by for battery read-outs.

31 26 03 P Roger, Gemini 4. You ready to copy?

31 26 05 CC Go ahead.

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31 26 07 C Roger. The adapter batteries are all reading 2 on the amps and 24 volts. The PCS rings are holding up well. The Secondary O<sub>2</sub> bottles are holding up well. The main batteries are reading 9 and about 22.5 to 23 volts. The control bus is 26.5 at 26, S2 is 26, and the main is 23.5.

31 26 36 CC Roger. You might look for a tropical storm over the west coast of Mexico. You should be right on top of it about 22:43 Zulu, which is right about now.

31 26 50 C Understand. We'll be looking. We're over some pretty good weather right now .....

31 30 10 C Just took a frame of some thunderstorm buildups .....

31 31 01 C Okay, I guess we can .....

31 31 15 P You know, it's not too light in here right now, is it?

31 31 20 C No, it isn't. ....

31 31 37 P Smile! You're on Candid Camera.

31 31 42 C .....

31 31 44 P Yes, it takes about 4 inches. No, wait a minute, I don't feel it moving.

31 31 49 P I think I know why.

31 31 50 C Did you have it on?

31 31 54 P Didn't have the other thing on.

31 31 57 C Oh, no. I know why! .... isn't enough to make that thing run.

31 32 03 P No, I didn't have the auxiliary switch on. I'll feel it run. It's running.

31 32 08 C .....

31 32 15 P .....

31 32 34 C .....

31 33 01 C Okay. I just took a picture of two thunderstorms that look like big pancakes, with a lot of cirrus running out around to the side of them, but different tops.

31 33 13 P You're ..... take a picture just looking out the window.

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[REDACTED]

31 33 30 P ..... picture.

31 33 37 C ..... over here, Ed?

31 33 37 P Yes.

31 33 42 C I have got a good view of the line .....

31 33 44 P Yes, but you're not going to get anything .....

31 33 46 C What?

31 33 51 P ..... the .....

31 33 52 C Yes, I know it. That's what I want.

31 33 54 P Let me know. Got it on?

31 33 55 C Yes, it's on.

31 34 10 P Okay. What I want to do, Jim, is get out these other lenses. I think we can take some excellent movies with four lenses.

31 34 20 P Hold the sextant box?

31 34 35 C Is that where the sextant is?

31 34 27 P The sextant's between my legs.

31 34 31 P It's catching on the top, too.

31 34 39 C ..... get it, Ed. Just don't break it.

31 35 42 P We really want to use it on the telephoto shots.

31 35 44 C Yes. Where is the data book?

31 35 56 C Why don't you go back to sleep?

31 36 01 P No, I'm all fired up now. ....

31 36 40 P Start over on that, Jim.

31 36 44 C .....

31 36 54 C .....

31 38 20 P Magazine here is 619.

31 38 32 P We're on RECORD now.

32 05 01 C ..... the stars.

32 05 13 P I'm coming down on the horizon now, and you can certainly see the definite two layers to the air glow, the one that is quite thick at the top, and you can see the stars as they drop through it.

32 05 27 C You mean the one that's dim?

[REDACTED]



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- 32 05 29 P Yes. Yes, and as the stars drop through it, they occult a little bit; then they pop out on the left-hand part and you can actually see them go out all the way out as they hit the true horizon down at the bottom. It looks like to me - what would you estimate if you took the included angle. I would include that angle at about 7 or 8° say, from here.
- 32 05 49 C .....
- 32 05 51 P I estimated it higher before.
- 32 05 56 C The dense layer at the top is about a third .....
- 32 05 58 P Yes, I'd estimated it about a third or sixth.
- 32 06 05 P I used the green filter on the sextant, and the green filter does make a clearer and more defined horizon than no filter at all. Would you like to take a look at the sextant?
- 32 06 20 C Yes. .... horizon.
- 32 06 27 P You've got a good one now, don't you?
- 32 06 32 P I'm unwinding it out .... the umbilical right now. Here it comes.
- 32 06 34 P Okay. There it comes.
- 32 06 39 P Sure is easy to move things around, isn't it? That 8-pound sextant, you just handle it like it weighs an ounce.
- 32 06 46 C .....
- 32 06 49 P Try the green filter. See if you don't feel it makes a more defined horizon.
- 32 07 15 P Now we've got what I would consider darn near perfect star-seeing conditions with the moon effect as small as it is. As we were saying before, the magnitude of the stars - it looks like we can go right down to seventh order or maybe just a hair below, using our calibration, the Corona Australis. I have a little flash right out in front of me out there.
- 32 07 41 P Yes.
- 32 07 53 C .....
- 32 07 56 P You saw all kinds of what?
- 32 08 01 P Yes. Oh.
- 32 08 05 C .....

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[REDACTED]

32 08 15 P Jim, I'm going to take a check on the tape recorder. I don't trust it since the bulb didn't work on it the last time. Will the lights bother you?

32 09 20 P It looks like the tape's still running through and I haven't gotten the red light yet. That is sure unsatisfactory - the location of the tape recorder light. The whole tape recorder - that's right, the whole tape recorder operation is wrong. It ought to be something you can have on in continuous so that you can talk over the radios, also. Particularly on launch - you end up not getting any of that on tape.

32 10 01 C Okay. I just started my .....

32 10 15 C .....

32 10 20 P Is that right?

32 10 22 C .....

32 11 08 C .....

32 11 34 P I'm going to go ahead and time a star coming up through it.

32 11 37 C Okay.

32 11 44 P See how long it takes.

32 12 03 P Right now it's entering the dim part.

32 12 17 P And, out it comes.

32 12 25 P It took 49 1/2 seconds to come up through. Let's see if I can duplicate that. Get another measurement.

32 12 44 C .....

32 12 46 P A degree and a half. Boy, that sure is deceiving.

32 14 08 P Okay. Now I've got a good star. I started it early. You know, down below the air glow it kind of peters out to just about nothing, where the stars start coming out, and then they start moving into the air glow. I see a star very clearly and now it's starting to come into the air glow.

32 14 32 P On that first measurement I made I really didn't - I think the air glow starts down below - a little bit below, where, looking at it from here, it looks like it really starts.

[REDACTED]

[REDACTED]

32 15 10 P Oh! Did you see that flash? Huh? Yes. A very bright flash right on the air glow. It was on your side. A very bright flash and went out.

32 15 25 C No, I didn't see it. Is the recorder on now?

32 15 29 P Yes.

32 15 34 C 2°, 25 minutes.

32 15 41 P How many, Jim?

32 15 44 C 2°, 25 minutes.

32 15 45 P Okay.

32 15 49 P Shucks! Now keep a bright eye out your window, because the area I saw is in your window now - where I saw the flash. It was right at the top of the air glow.

32 16 05 P Boy, are the stars good now!

32 16 20 C It sure looks funny right down below us .....

32 16 23 P Yes.

32 16 25 C The lights of the city and then on the horizon out there are the blinking lights ..... upside down ..... side-up.

32 16 34 P There! See it again? Out your side?

32 16 41 C You're not kidding. That was on the earth.

32 16 44 P It was shooting down toward the - that one was much lower.

32 16 46 C Oh, it's shooting down into the earth.

32 16 49 P Yes.

32 16 50 P Wonder what that was?

32 16 52 C Maybe it was a falling star.

32 16 53 P I don't know.

32 16 58 C ..... wearing that big bulky suit to protect you from those falling stars.

32 17 01 P Yes, I checked my suit very closely, and I saw no meteorite holes, much to my delight.

32 17 15 P Okay. I tracked a bright star, and I believe that's out there in Aquila. In fact, I'm quite sure. I can see the two target stars. I've tracked it all the way up. It's almost to the top. It's going to

[REDACTED]

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go out of my view right now. I had him all the way from the bottom, and it took 3 minutes 23 seconds to come all the way up. That was tracking a big star like Altair.

32 17 46 C .....  
 32 17 51 P No. No. Come right up from the bottom of the horizon, up through the air glow layer. From the first time, I saw it till it reached what I consider the top of the air glow layer, it took 3 minutes and 23 seconds.  
 32 18 03 C Long time, isn't it?  
 32 18 05 P Much longer than I thought, and it started way down ..... That's why I was looking for a bright one like that.  
 32 18 25 P Yes. Look out and see if you don't see Altair out your side. See Aquila, the two ..... stars?  
 32 18 37 P Drifted down to the bottom of your window, if you see it at all.  
 32 18 46 P It may never come up to your view.  
 32 18 58 P Corona Australis came up.  
 32 19 05 P What? I know. I tried to make a measurement that way. Sure doesn't work very well, does it?  
 32 19 22 C Yes, it just doesn't work when the world is upside down.  
 32 20 20 C I think we are about to have a sunrise.  
 32 20 29 P .....  
 32 20 46 C .....  
 32 20 55 P Okay.  
 32 21 17 C .....  
 32 21 22 P Yes. .... burning up ..... and what I saw went right into the air glow. There goes another one! See it?  
 32 21 47 P ..... is deceptive as far as the altitude .....  
 32 21 58 P ..... the fireflies .....  
 32 22 29 P I think the ..... the red light ..... ought to change it.  
 32 23 13 P What?

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32 23 14 C .....  
 32 23 15 P No. I was going to catch it as it came out so I could catch the strange effect of one side in sunlight and the other side in night. I'm going to start turning it on now at 19 and see what I get. Should be pretty dark .....

32 23 55 P You're in the daylight over there, aren't you?  
 32 24 01 P ..... right kind of film.  
 32 34 17 P Okay, we're starting Film Tape Pack no. 11. We just finished with no. 9. It looked like the light came on that pack. We'd better check to see if no. 8 has some way of turning the light on. It might be the film tape magazine that causes the light not to come on.

COASTAL SENTRY QUEBEC

32 38 26 CC Gemini 4, CSQ. Turn your computer ON for a 33-1 retro load.  
 32 39 03 P At this time, I'm switching the medical recorder from 1 OFF to 1 ON and 2 OFF. Jim's to go to bed.  
 32 39 13 CC Gemini 4, CSQ transmitting 33-1 load.  
 32 39 15 P Roger. We got the update light.  
 32 39 36 C .....  
 32 39 39 P You're not kidding.  
 32 39 55 P Let me know when you want to do the .....  
 32 40 17 P I'll get it. Don't be over confident now.  
 32 40 35 P Okay.  
 32 40 47 CC Gemini 4, CSQ. Houston would like to know what your relative bearing was when you sighted the satellite.  
 32 40 51 P Roger. Stand by one, please. Do you have a relative bearing for them?  
 32 41 00 P Yes, I'm pulling it, but I'm not getting anything. Just the same way as it was when you were doing it for me.  
 32 41 10 P Is this valve screwed up here in any way?

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32 41 14 P Yes, I'm pulling.

32 41 24 C Roger, CSQ. .... and the satellite was up near the sun. My small end started drifting up on us, drifting slightly. And I saw the thing over the small end which I think was pointed toward the east.

32 41 38 C .... I saw it over the small end, which I think was pointed toward the east.

32 41 52 CC Gemini 4, CSQ. You were not up on the first part of your transmission. I got, "Saw it over small end and you believe were pointed east." What was the first part of your transmission?

32 42 02 C Roger. My small end was up above the horizon so I couldn't see the horizon. As it came around toward the sun I saw the - this other satellite, but then as the sun came in through the window I lost it because the sun was so bright.

32 42 17 CC Roger. You were looking into the sun then, when you saw it?

32 42 20 C That's affirmative.

32 42 22 C Okay. Pull harder.

32 42 27 CC Okay. I got your 33-1 load up. I've got your 33-1 backup guidance quantities when you're prepared to copy. We had a little problem last pass. We had a complete power failure about two-thirds the way through the pass.

32 42 32 C Give it a big tug?

32 42 34 P I'm pulling, Jim. I'm pulling, Jim.

32 42 44 P It's the same thing that happened to me .....

32 42 48 C I'm not being too successful.

32 42 51 P I wasn't either.

32 42 53 C I'm getting it all over me as a matter of fact.

32 42 56 C Pull on it some more.

32 42 58 P I'm afraid I'm going to .....

32 42 59 C Okay.

32 43 00 P .... collapse the bellows.

32 43 01 CC Gemini 4, CSQ. You can turn your computer OFF.

32 43 05 P Roger. Computer is going OFF.

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[REDACTED]

32 43 08 C Okay. Try pulling now.

32 43 10 P Okay, all the way out.

32 43 15 P I haven't got any left. You're going to have to dump it. End up doing the same thing I did.

32 43 20 C Yes. Shoot! I got it all over. Maybe we're getting it on there too tight, Ed. You know that old - oh, boy! .....

32 43 32 CC Are you prepared to copy your 33-1 data?

32 43 38 P Stand by one, please.

32 43 39 CC Roger.

32 43 50 P Roger. Go ahead.

32 43 51 CC Roger. 33-1: 39 forward at 1+04. 120 aft at 2+30. GMRC 02 days 17 42 47. 2+30. 8+39.

32 44 17 C Roger. Understand 33-1: 39 forward at 1+04. 120 aft at 2+30. 02 17 42 47. 2+30. 8+39.

32 44 35 CC Affirmative.

32 44 46 CC Everything looks very good here on the ground. We are standing by.

32 44 49 P Roger. We're in good shape up. We got a good .....

32 45 04 CC Gemini 4, CSQ. You are fading away.

32 46 20 P I'm taking some general - normal lens on the 16-mm photographs of the water and the clouds at the present time. We've been having a lot of trouble with the ON/OFF button on this camera. It goes only about every third or fourth actuation. This might explain some of the reason why Jim didn't get as much film on that first - in our EVA work.

32 48 08 P For analyzing these films - we're taking them at 00:04. We're taking them of the ocean and the cloud background. They look like they have fair the weather cumulus with the characteristic cirrus above. I'm taking quite a lot of them on the flight.

32 56 41 P I'm taking the S-6 photographs on the second pass through the Pacific cloud area. We're taking the first picture now.

32 57 24 P We're starting with Frame no. 33, Film Pack no. 7. Using the same old setting - 250 at 11 .....

[REDACTED]

~~CONFIDENTIAL~~

32 58 00 P I'm also taking some pictures with the 16-mm camera of the same area, with the normal lens.

33 01 17 P Feels like the shutter is sticking on at the Hasselblad at the present time on some of these pictures. This is the second series of the S-6 pictures over the Atlantic. The film-advance mechanism is definitely causing erratic operation of the Hasselblad. I'll be operating it manually from here on.

33 04 12 P This next one I'll be shooting into the sun, and I do have a reflection on the window. Let's see how it comes out. It'll be shot no. 43 on the Film Pack 7.

33 05 10 P I'm in a very good blind-end position now for MSC-2 and -3 run through the South Atlantic anomaly. I'm shooting right into the sun now ..... 500 and f/6.

33 10 33 CC Gemini 4, Gemini 4. This is RKV CAP COM.

33 10 50 CC Gemini 4, Gemini 4. This is RKV CAP COM.

33 10 55 P RKV, this Gemini 4.

33 10 56 CC Roger. We were expecting an Aero-Med Type 1 pass. Would you insert the oral temperature probe on the Pilot?

33 11 14 P ..... Gemini 4.

33 11 15 CC Gemini 4, negative on the oral temperature. Negative on the oral temperature. Go ahead on the blood pressure.

33 11 23 P Roger.

33 12 24 S Gemini 4, Gemini 4, RKV SIR JOHN. We are not receiving your blood pressure. Over.

33 12 32 P Roger, it's coming up.

33 12 36 P The cuff is full-scale.

33 13 15 S Gemini 4, RKV Surgeon. We have a good blood pressure. Give me a mark on your exercisor.

33 13 53 P ..... coming on at this time. That at 00:30 .....

33 14 09 S Gemini 4, Gemini 4, RKV SIR JOHN. Are you completing your exercises?

33 14 16 C Stand by one, please, RKV.

33 14 19 S Standing by.

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33 16 01 CC Gemini 4, RKV CAP COM.  
33 16 11 CC Gemini 4, RKV CAP COM.  
33 16 26 CC Gemini 4, RKV CAP COM.  
33 16 32 CC Gemini 4, RKV CAP COM.  
33 16 35 P RKV, Gemini 4, .....  
33 17 02 CC Gemini 4, RKV CAP COM.  
33 17 11 CC Gemini 4, RKV CAP COM.  
33 17 21 CC Gemini 4, RKV CAP COM. Discontinue the Aero-Med Pass.  
33 17 31 CC Gemini 4, RKV CAP COM. Do you copy?  
33 17 42 CC Gemini 4, RKV CAP COM. Do you read?  
33 17 57 CC Gemini 4, RKV. I read you very weak. T/M is broken. Discontinue the Aero-Med Pass.  
33 18 05 P Roger, I have ..... my exercising and I have hooked up the blood pressure cuff .....  
33 18 16 CC Negative, we have lost T/M contact.  
33 18 22 CC Gemini 4, can you read me?  
33 18 35 CC Gemini 4, this is RKV. Do you read me?  
34 13 05 CC Gemini 4, CSQ. Do you copy?  
34 13 21 C CSQ, this is Gemini 4.  
34 13 24 CC Roger. Copying you loud and clear. .... your foot on the ground. Be advised to go to a heads-up position, heads-up attitude for a test critical tape dump over Hawaii that's in about 5 or 6 minutes.  
34 13 40 C Roger. Understand. Heads-up for the Hawaii pass in about 5 or 6 minutes.  
34 13 45 CC Roger. Also, over Hawaii the air-to-ground communications will be carried live on television.  
34 13 54 C Roger. Understand.  
34 14 46 CC Gemini 4, CSQ. We have nothing else; be standing by.  
34 14 52 C Roger, CSQ. Thank you very much. Everything's GO up here.  
34 15 20 CC Gemini 4, CSQ. Go ahead.  
34 15 22 C You might ask the ..... Houston if they would like to have a pick-up ..... I've been taking a few exercises to keep .....

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[REDACTED]

34 15 43 CC Okay, read you with background noise. Understand that you want to inquire of Houston if they want a Type 1 Medical Pass on the Command Pilot.

34 15 53 C ..... see if they want to make up for one they missed a while back.

34 16 00 CC Roger. Gemini 4, Houston will advise you over Hawaii.

34 16 05 C Roger, understand.

34 17 06 CC Gemini 4, CSQ. Would you verify that the ECS O<sub>2</sub> heater switch is OFF?

34 17 14 C Roger, that's affirmative. The ECS O<sub>2</sub> heater switch is OFF and has been OFF.

HAWAII

34 22 12 CC Gemini 4, HAW CAP COM.

34 22 17 C Go ahead, Hawaii, Gemini 4.

34 22 20 CC Roger. You are looking good on the ground.

34 22 25 CC I would like to advise you to perform the Medical Type 1 Pass on Pilot over RKV.

34 22 35 C Roger. Understand a Type 1 Medical Pass on Pilot over RKV.

34 22 40 CC Roger. RKV acquisition in approximately 10 minutes.

34 22 45 C Roger. Acquisition in approximately 10 minutes.

34 22 47 CC I have also a map update for you. Are you ready to copy?

34 22 51 C Standing by for map update.

34 22 52 CC Rev. 22: 01 07 00. Longitude 63° East.

34 23 11 C Roger. Understand. Rev. 22: 01 07 00. Longitude 63° East.

34 23 19 CC ..... 63° East.

34 23 22 C That's affirmative. 63° East.

34 23 24 CC Roger.

34 23 26 CC Also, I would like to congratulate the new American space flight record. Congratulations!

[REDACTED]

34 23 33 C Roger. We have quite a few more to go.  
 34 23 36 CC Roger.  
 34 23 38 C Thank you very much.  
 34 23 54 CC Gemini, Hawaii.  
 34 23 56 C Hawaii, Gemini 4.  
 34 23 57 CC Roger, on the acquisition. The time of the RKV -  
 it'll be approximately 20 minutes.  
 34 24 03 C Roger. It'll be 20 minutes to the RKV acquisition.  
 34 24 06 CC Roger.  
 34 24 13 C Hawaii, Gemini 4.  
 34 25 17 CC Gemini 4, Hawaii. Go ahead.  
 34 25 19 C Roger. Be advised I have a good view of the  
 Hawaiian Islands now out my window. I'm passing  
 over them in about 30 seconds. Scattered to broken  
 clouds and looks pretty good. In fact, right now  
 it looks like I'm looking down if I'm right, right  
 down on the island of Hilo.  
 34 25 41 CC Roger, Gemini 4.  
 34 25 44 C It looks pretty good.

ROSE KNOT VICTOR

34 43 57 CC Gemini 4. Gemini 4. RKV CAP COM.  
 34 44 16 CC Gemini 4. Gemini 4. RKV CAP COM.  
 34 44 19 P Go ahead, RKV. Gemini 4.  
 34 44 21 CC Roger. We have a good temp on you, and we're stand-  
 ing by for your blood pressure.  
 34 44 27 P Roger. Coming up.  
 34 44 40 S Gemini 4, RKV Surgeon. You're full-scale.  
 34 45 20 S Gemini 4, RKV Surgeon. We have a good blood pres-  
 sure. Standing by for your mark.  
 34 45 26 P Roger. MARK now.  
 34 45 55 P ..... completed. Starting up.  
 34 45 59 S Roger.

[REDACTED]

34 46 13 S Gemini 4. You're full-scale.

34 46 41 S Gemini 4. RKV Surgeon. We have a good blood pressure. Standing by for your food, water, and sleep.

34 46 47 P Roger. On my last sleep period, I got four hours rest, most of which was good sound sleep. My last meal was the peanut cubes, orange juice, sandwiches, and fruit cocktail which was all ..... I took about six swallows of water with that meal, and I'm preparing at the present time to have a snack of peaches and fruitcake.

34 47 18 S Roger. Understand all of Meal D and you're going into your peaches and fruitcake.

34 47 24 P That's affirmative.

34 47 28 P The Command Pilot's asleep over here. He's got all the food in his ..... box.

34 47 32 S Roger. RKV Surgeon over to CAP COM.

34 47 35 P Roger.

34 47 36 CC Roger. This is RKV CAP COM. You're going to have a critical dump over the CSQ.

34 47 44 CC Roger. This is RKV CAP COM. You're going to have a critical dump over the CSQ. Request that you be in attitude for that.

34 47 54 P Roger. Have you been not receiving some of our dumps?

34 48 01 CC Negative. All of your dumps have been very good.

34 48 04 P Roger. Rather than power-up and go to heads-up attitude, we'd just as soon continue in the manner in which we have. I went to the powered-up configuration and heads-up over Hawaii for that dump. I would prefer to remain in a free-drift mode at this time.

34 48 23 CC Roger. Flight says that's okay.

34 48 26 P Roger. Thank you.

34 48 27 CC Okay. We'd also like to get a Primary O<sub>2</sub> read. Would you cycle it ON, please?

34 48 32 P Roger. Coming ON.

34 48 46 CC When was the last time that you had Primary O<sub>2</sub> read?

34 48 52 P It was probably while I was asleep.

[REDACTED]

[REDACTED]

34 48 54 CC Roger.

34 48 58 CC There's no need to get it too accurately.

34 49 02 P Roger. I have turned it OFF. Do you want me to put it back ON?

34 49 07 CC How long did you have it cycled ON?

34 49 10 P Roger. .... had it ON for 10 seconds.

34 49 12 CC Roger. I think we have it.

34 49 14 P Roger.

34 49 17 CC What are you reading onboard?

34 49 24 P Stand by one.

34 49 25 CC Roger.

34 49 36 P My onboard reading is 34 percent, and I'm holding right at 940 psi.

34 49 45 CC Roger. That concurs with our readings on the ground.

34 49 48 P Roger.

34 49 55 CC Roger. All systems look good here from the ground.

34 49 57 P ....., we're pulling in the neighborhood of about 13 to 14 amps.

34 50 06 CC Roger. I understand in the neighborhood of 13 to 14 amps.

34 50 10 P Roger. We've turned everything off that ..... there's just one small light on.

34 50 40 CC Flight advises that they need the tape dump over the CSQ, so please go into proper attitude. That will be at a G.m.t. of 03 hours 03 minutes. Do you copy?

34 50 51 P Roger. 03:03, and we'll be in a tape dump attitude.

34 50 57 CC Roger. We're coming up on LOS.

34 50 59 P Roger.

35 12 26 P Hey, Jim, babe. Are you sleeping?

35 12 33 C What?

35 12 35 P Did you go to sleep?

35 12 37 C .....

[REDACTED]

[REDACTED]

35 12 40 P I didn't think you were. I let you overshoot  
19 minutes worth. I was doing B-2, and there wasn't  
any reason for you to wake up.

35 12 57 P Do you think we're sleeping too much? All we do is  
sleep.

35 13 14 P I think it's an eat period for myself, but I think  
we should both eat ..... here.

35 13 26 P In fact, I got so hungry while you were asleep that  
I didn't ..... food on either snack.

35 13 31 C Yes, as a matter of fact .....

35 13 33 P The matter of another meal.

35 13 35 P We got congratulations over Hawaii! Did you hear  
it?

35 13 40 P We passed the United States space record. And we  
have got a very important tape dump at 03:03. I  
think it was over CSQ, and they wanted ..... up for  
it. I asked them - I said, "Are you getting all of  
our timed taped dump?" They said, "Perfectly." I  
said, "Why can't we just remain in drifting flight,  
powered down?" They said, "Stand by."

35 14 09 P They came back and said that's what they wanted, so  
I said, "okay."

35 14 11 P MSC-1 is OFF now. MSC-2 and -3 - I just turned  
those OFF. I'm going to switch Biomedical recorders.  
I think after this, we'll go ahead and let them run.

35 14 24 C Listen, let's leave yours .....

35 14 31 P Okay.

35 14 33 C You've been running yours like mad, and I haven't  
been running mine at all.

35 14 35 P Okay. Here we go. Switched back.

35 14 38 C ..... 100 hours on yours .....

35 14 41 P We can't get a 100 hours on them, Jim.

35 14 45 C .....

35 14 47 P Mine has been OFF now for about 8 hours.

35 14 55 P Yes, 4 hours this time and 4 hours last time.

35 14 C .....

35 15 02 P You'll be asleep, too?

[REDACTED]

~~CONFIDENTIAL~~

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35 15 17 C .....

35 15 19 P Why I can't well. I can't feel like sleeping again.

35 15 19 C .....

35 15 21 P Is that right? I think that's not a bad time.

35 15 26 C .....

35 15 30 P Well, we haven't been. It's been holding right at 940. I think it's up to 950 now.

35 15 38 P Okay, I'm going to .....

35 15 39 C .....

35 15 40 P Right.

35 15 57 C .....

35 16 01 P 03:03 .....

35 16 04 P ..... had a very important dump at Hawaii.

35 16 09 P What is so important about these dumps?

35 16 14 P .....

35 16 21 C .....

36 16 23 P You did? I just checked them a little while ago. Everything's holding up.

35 16 28 C .....

35 16 31 P No. It's down to a little under 2. It's just about 2.

35 16 33 C .....

35 16 38 P Yes, they're down to 5 now. .... we've been running on one fan now for a long time. Day 2 .... We are behind on our food .....

35 17 09 P Right. I just finished it.

35 17 35 C .....

35 17 38 P ..... sunrise.

35 17 52 P ..... That thing really grabs me when it goes like that.

35 18 03 C .....

35 18 07 P Have you got a good view of it out there?

35 18 09 C .....

35 18 11 P ..... get to sleep. ....

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[REDACTED]

35 17 47 F We sure it's a 1 to 1 to 1 ant.  
35 17 47 C .....  
35 17 47 F Yes.  
35 18 42 P Ah, ..... cereal.  
35 36 50 P Took the combination of 3-5 and 3-7 shots as we came up over the Himalayan Mountains.  
35 37 14 P That was no. 48, Magazine no. 7, at 02:53.  
35 44 54 P Took an S-6 weather picture when we were in the vicinity of the tropical storm Carla. Frame 49 on Magazine 7. The time -

COASTAL SENTRY QUEBEC

35 47 12 CC Gemini 4, CSQ. Do you copy?  
35 47 32 P CSQ, Gemini 4.  
35 47 35 CC Roger. Read you loud and clear. I have a CIA and PLA update for you when you're prepared to copy.  
35 47 50 CC Also, Houston would like to know - have you completed your Delta-8 Experiment?  
35 47 57 C Roger. We've completed the D-8 Experiment. We're ready to copy.  
35 48 02 CC Roger. Also be advised to leave both the Biomed recorders on for the remainder of the mission.  
35 48 11 C Roger. We've used them a little on the sequence. I think we'll leave no. 2 off for another 30 minutes.  
35 48 19 CC Okay.  
35 48 24 CC Okay. I believe you've got Area 25-3. Is that affirmative?  
35 48 29 C Say again.  
35 48 30 CC I say, I believe you have Area 25-3.  
35 48 38 C Negative. We do not.  
35 48 39 CC Okay. All the days will be the second day. I'll just give you the GMT/RC times. Area 25-3: GMT/RC 05 51 18. 8+14. 16+55. Area 26-DELTA: ΔV 86. 1+49. 06 51 37. 08+47. 13+03.

[REDACTED]



35 49 23 CC How's it going?  
 35 49 25 C Okay.  
 35 49 27 CC Okay. Area 27-2: 96. 2+02. 08 27 55. 6+35.  
 10+58. Area 28-2: ΔV 111. 2+20. 10 02 54. 4+50.  
 9+39. Area 29-2: Okay, this is a split ΔV.  
 Forward 66. Aft 61. 1+48. 1+17. GMTFC 11 37 05.  
 3+43. 08+59. Area 24-DELTA: ΔV 89. 1+53.  
 03 45 30. 11+03. Area 25-DELTA: 86. 1+49.  
 05 19 09. 09+51. 26-BRAVO, Area 26-BRAVO:  
 Split ΔV. 66 forward 104 aft. 1+48. 2+10.  
 07 40 28. 8+54. Area 27-DELTA: 98. 2+29.  
 08 27 54. 6+44. Area 28, Area 28-BRAVO: Split ΔV.  
 Forward 66. Aft 82. 1+48. 1+42. 10 43 31.  
 11+05.  
 35 52 35 CC That's it.  
 35 52 38 C Roger. What was the reverse bank on that? The  
 400 K on the last one?  
 35 52 44 CC Okay. The last 4 - the last 5, the CIA's do not  
 have reverse bank times at this time.  
 35 52 52 C Roger. Are you ready for readback?  
 35 52 57 CC Stand by.  
 35 53 01 C Area 26-DELTA.  
 35 53 03 CC Roger. Area 26-DELTA: 86 ΔV. 1+49. 06 51 37.  
 8+47. 13+03.  
 35 53 26 CC Did you copy?  
 35 53 34 CC Gemini, CSQ. Do you copy?  
 35 53 44 CC Gemini 4, CSQ. Do you copy?  
 35 55 16 C I just took pictures ..... Frame 51 .....  
 35 56 14 C I just took Frame 52 on the Hasselblad Film Pack  
 no. 7 ..... high deck of clouds ..... very sharp  
 break ..... The break is .....  
 36 00 00 P I've taken two pictures on the S-6, and I believe  
 they are right along the inter-tropical convergence  
 zone. There is a nice band of heavy cloud build-  
 ups ..... in a line approximately in line with the  
 equator.  
 36 00 20 C Golly, ..... really is ..... out there .....  
 36 00 28 P I guess I'd better not.  
 36 02 04 C Oh! I'm just about dry .....

[REDACTED]

36 02 33 C .....  
36 02 36 P Yes.  
36 03 06 P Maybe they're down there computing very carefully  
whether we can go for the extra ..... hours.  
36 03 11 C .....  
36 03 13 P Go after that extra ..... teen hours.  
36 03 21 C .....  
36 03 24 P You know, go after the 5-day -  
36 03 26 C Oh, no! Ha! Ha!  
36 03 28 P We got an extra load of food onboard.  
36 03 33 C ..... we have fuel enough?  
36 03 35 P How much OAMS we got? 70 - 60?  
36 03 40 C No, 70 .....  
36 03 43 P We've got one more than we're supposed to have.  
36 03 47 C .....  
36 03 48 P ..... dirty rascal .....!  
36 03 57 P We're supposed to have four per day for each guy.  
36 03 59 C .....  
36 04 04 P ..... double bags.  
36 04 09 C ..... meal ..... bags .....  
36 04 18 P You know better than that. Ha! Ha! You're just  
being unbearable. Ha, ha, ha!  
36 04 28 C .....  
36 04 30 P Kind of reminds me of a T-bird. Ha, ha!  
36 04 32 C .....  
36 04 34 P Kind of reminds me of a T-bird, you know. Here I  
am .....  
36 04 37 C .....  
36 05 13 P We ought to try to see if we can see our water tank.  
36 05 28 P Hey, here's our box.  
36 05 33 P Right here .....  
36 05 42 P .....  
36 05 50 C Did you put a question mark by ..... retros, .....?  
[REDACTED]

**CONFIDENTIAL**

36 06 09 P I did, too.

36 06 15 C Okay. Now, right now, ..... daylight .....sure daylight.

36 06 23 P Well, we're getting in dark. I can see dark here too, Jim. Let's see on one of these nights or days see what we can and can't see.

36 06 40 P These cinnamon toasts are all right.

36 06 49 P ..... All right before. I don't think so -

36 06 51 C I don't think so.

36 06 51 P No, ..... plain toast ..... These are coated with something.

C .....  
P Yes. Pretty good. It's all a function of how it's been .....  
C ..... toast is all squashed .....

36 07 06 P .....  
36 07 08 C Yes. I didn't .....  
36 07 12 P Pretty good, Jim. Try one.  
36 08 20 C Those are good.  
36 08 23 P Yes, very good.  
36 08 33 C .....  
36 08 35 P .....  
36 18 16 P Going to an extra exercise period - the second exercise period I've had that wasn't an official part of the flight.

36 19 04 P Okay. I did it for a count of 60.  
36 19 09 C Maybe I can .....  
36 19 12 P .....  
36 19 13 C .....  
36 19 30 P Well, I started out with 5 pencils and I've got 3 left so -  
36 19 35 C I started out with 2 and have 1 left. I mean, I started out with 2 and I've got 2.  
36 19 42 P Oh, yes. I put it there.  
36 19 45 C That's an opportunist .....

**CONFIDENTIAL**



36 19 49 P Yes.

36 19 57 P Well, let me see. I don't know whether to put my gloves on or not. How's everything look over there? Not bad, huh? I believe I'll try it without them. Let me see. Where's the visor? I think you handed it over to me, didn't you? I'm looking right at the Southern Cross. Very pretty.

36 20 27 C I think I did, Ed.

36 20 28 P I think you did, too.

36 20 54 P Do you want the movie camera?

36 20 57 C Yes.

36 21 03 P Do you want the "Y" connector? Now, I took this off the Hasselblad. It was fouling the pictures up.

36 21 06 C What was?

36 21 08 P This was.

36 21 09 C .....

36 21 09 P Oh, the shutter wasn't dropping right. It was dropping delayed, remember?

36 21 15 C .....

36 21 18 P No. Not that way, though. I had this pushed all the way down in. It was getting in there and sticking in there like this. So there's the "Y" connector if you want it.

36 21 35 C .....

36 21 42 P I've got a normal lens on it.

36 21 46 P We're running out of what?

36 21 48 C Hasselblad pictures.

36 21 52 P Still not more than we had bargained for?

36 23 21 C Sure wish I knew how our water supply was doing back there.

36 23 25 P I do too.

36 23 28 C .....

36 23 37 C .....

36 23 44 P I don't think so. Do you?

36 24 04 P .....



[REDACTED]

36 24 9 C .....  
36 24 08 F Why isn't you see if you can see, Jim.  
36 24 16 F That's really neat!  
36 24 18 F Nothing. Absolutely nothing.  
36 24 21 P Maybe you can direct it better.  
36 24 23 C .....  
36 24 37 C .....  
36 24 42 P No way of telling, huh?  
36 24 47 P I think the lens cover's got a couple of finger-  
marks on it.  
36 25 15 P Hey, I never did find the sleeve cover.  
36 25 23 C I'm pretty sure .....  
36 25 25 P I think you did, too. I've always left it right  
there before, though.....  
36 25 49 P Turn that big spotlight off.  
36 25 57 C .....  
36 26 04 C You really ought to be able to .....  
36 26 17 P You see it over here toward me?  
36 26 28 P Yes, that we can be assured of.  
36 27 09 C .....  
36 27 27 P How about under me? See it under me anywhere?  
36 27 33 P I can reach in under there. That's the first place  
I looked.  
36 27 37 C ..... not on your suit.  
36 28 01 P That exercise eats you up in this bunny suit. I'm  
not going to do that anymore.  
36 28 09 C .....  
36 28 12 P What do you mean?  
36 28 13 C What did you do, bleed all over the seat .....?  
36 28 20 P I don't know.  
36 28 22 C .....  
36 28 23 P I'll bet it is. What do you mean, Jim?  
36 28 26 C Oh, you know that big ..... on my desk?

[REDACTED]

[REDACTED]

36 28 26 P Oh, yes.

36 28 37 P No, I'd say we're not.

36 28 40 P I feel like i'm up to my ..... for survival in the  
Arctics ..... in the tropics .....

36 28 47 C Ha! Ha!

36 28 49 P I feel like one of the ..... you know?

36 28 52 C ..... about 30 or 20 minutes .....

36 29 01 P .....

36 29 04 C .....

36 29 07 P No. Not unless we do something about the hatch.

36 29 16 C ..... being able to stand up and then going outside  
through the hatch opening.

36 29 21 P That's right.

36 29 33 P ..... it didn't look as strange from outside as it  
did from inside, from .....

36 29 37 C Yes.

36 29 37 C I reached over here one time ..... a picture of  
where I thought you were.

36 29 42 P Oh, really?

36 29 45 C I don't know whether I got it.

36 29 47 P Well, that lanyard - the shape of the spacecraft -  
it just kept me up here all the time. I'd go out  
here and tether dynamics would bring me back up in  
here. And then I'd operate back this way. We  
didn't think of that when we designed that anchor  
point on there.

36 30 09 C All of our preflight plan worked out. Didn't it?

36 30 16 P What do you mean?

36 30 19 C ..... Ha! Ha!

36 30 22 C .....

36 30 25 P You have daylight out in front.

36 30 28 P But go get over on your side. But my first whole  
maneuver was done over on this side. Did you see  
me the first time I went up?

36 30 35 C I couldn't.

[REDACTED]

[REDACTED]

36 30 37 P Did you see me -- Was I out in front of you one time?

36 30 44 C Yes.

36 30 45 P Was that when I was yawing right -- left a little bit?

36 30 49 C Yes.

36 30 50 P Shortly thereafter was when I ran out of fuel, wasn't it?

36 30 53 C Yes. It didn't last very long. It really went in a hurry.

36 30 54 P Where did I use up all of my time?

36 30 57 C I don't know. Your time or your fuel?

36 31 03 P I was out there that long too, wasn't I?

36 31 06 C .....

36 31 09 P I heard him. I heard him when we finally went off VOX -- "GET HIM IN!" Ha! Ha! Ha! Ha! Did you hear him?

36 31 20 C Yes. I said, "Have you got any instructions for us?" "YEAH, GET IN!"

36 31 24 P Ha! Ha! Ha! Who was it? Was that Gus? I thought it was Chris.

36 31 30 P I think at that time I was standing on top of the spacecraft. No, I wasn't. I was out there. That was when I saw Cuba, wasn't it?

36 32 16 C Hey, Ed!

36 32 18 P I'm trying.

36 32 23 P That ..... cool it down.

36 32 31 P I've got to sit down and tape more on that tape than I have .....

36 32 46 P Have to get my ..... and get a good ..... on getting out of the spacecraft. What we need is a big spacecraft with a big inward opening hatch -- just like they have on a submarine.

36 33 17 C Port opening?

36 33 18 P Yes, so that the pressure inside seals the hatch.

36 33 25 C .....

36 33 28 P No. You have to have a .....

36 33 39 P This is pretty .....

[REDACTED]

[REDACTED]

36 33 42 C Right here?

36 33 44 P Yes.

36 33 46 C .....

36 33 52 P I think we've got to do something better. They've been trying all types of things -

36 33 59 P Look at that thunder and lightning storm.

36 34 01 C .....

36 34 02 P Yes.

36 34 04 P I wonder where we are, Jim?

36 34 08 C .....

36 34 10 P Let me just check these and then I'll go to sleep.

36 34 14 C ..... to get tired of it.

36 34 16 P Okay.

36 34 22 C .....

36 34 23 P You're right. I hate to go to sleep.

36 34 40 P Let's just check what time those are and then we can find out where we were later.

36 34 44 C .....

36 34 45 P Okay.

36 34 46 C .....

36 34 49 P Saw a great many thunderstorms down below us. It looks like we're going approximately small-end-forward and we're upside down. Very, very heavy thunder and lightning activity. And the time is - what was that time, Jim?

36 35 20 C 10 till 4.

36 35 21 P 10 till 4?

36 35 22 C Right.

36 35 24 P And I'm going to sleep. We're going blunt-end-forward because the stars are setting.

36 57 11 C We're presently over the Arabian Peninsula at 04:13.

36 57 23 C Taking pictures of some of the sand dunes down here.

36 57 35 C .....

36 58 20 P ..... the recorder .....

[REDACTED]



36 58 24 C Okay.

37 14 05 C That last picture I took was ..... time.

37 53 55 CC Gemini 4, Gemini 4. This is RKV CAP COM.

37 54 08 CC Gemini 4, Gemini 4. RKV CAP COM.

37 54 21 CC Gemini 4, Gemini 4. This is RKV CAP COM.

37 54 31 CC Gemini 4, Gemini 4. RKV CAP COM.

37 54 39 C Roger RKV, Gemini 4. Go ahead.

37 54 41 CC Roger. We have your oral temp. Pump up your blood pressure, please.

37 55 31 CC Gemini 4, RKV CAP COM.

37 55 33 C Go ahead, RKV CAP COM.

37 55 36 CC Roger. Would you give us the blood pressure please?

37 55 52 S Gemini 4, RKV Surgeon. Would you pump it up a little more, please?

37 55 58 S I'll give you full-scale when you're there.

37 56 15 S RKV Surgeon. Try it there.

37 56 24 S Gemini 4, this is RKV Surgeon. You're getting a phased run-down on your blood pressure. Would you check your setting to be sure it's in?

37 56 52 S Roger Gemini 4, this is RKV Surgeon. You are still not getting a good blood pressure but before you try it next time would you check your fitting and be sure you don't have some loose trash or something inside the O-ring.

37 57 10 C This is Gemini 4. .... the blood pressure.

37 57 20 Roger. We got - we're getting good blood pressures from Ed, so keep trying it for a while. Could you go ahead and get your water and sleep report now, though.

37 57 33 C Okay ..... last four hour period ..... I got about an hours worth of sleep .....

37 58 04 S Roger. Did you say Meal D of the first day and Meal A of the second day?

37 58 10 C The second day ..... Meal A of the second.

37 58 25 S RKV Surgeon. Roger. CAP COM has something for you.

37 58 31 CC Roger. Have you checked your wet and dry bulb temperatures as of yet?

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37 58 39 CC Gemini 4, RKV.

37 58 41 C Go ahead, RKV.

37 58 43 CC Roger. Have you taken your wet and dry bulb temperature readings?

37 58 48 C Roger. We've been taking them right along.

37 58 50 CC Roger. Could you give me a read out?

37 58 52 C Stand by one.

37 59 08 C Dry bulb between about 72 and 75. A little bit before that they ran between 75 and 77. Wet bulb last group was between 57 and 61. Preceding group between 60 and 65. Let me get you a relative humidity here.

38 06 39 C It's approximately 05:25, passing over South America. Whole series of thunderstorms down there that are bright enough to be actually shining up into the spacecraft. Very, very violent.

38 19 05 CC Gemini 4, Houston CAP COM. Over.

38 19 18 C Go ahead, Houston. Gemini 4.

38 19 20 CC Roger, Gemini 4. Reading you loud and clear. Did you get your map update for revolution 25?

38 19 26 C Roger. It was 3° West and 05:36.

38 19 32 CC Roger, 5 west 05:33. Did you get the S-6 experiment update?

38 19 38 C Negative. What did you have to say about that?

38 19 40 CC Okay. Typhoon Babe is still off Formosa. You will be over it at 06:06. Weather advises there's a new storm area that you will be over at 06:13 G.m.t. We'd like some pictures if you can get them. No fuel usage. Did you copy that?

38 20 21 CC Gemini 4, this is Houston. Did you copy the S-6?

38 20 37 CC Gemini 4, Houston CAP COM. Over.

38 21 02 CC Gemini 4, Gemini 4. This is Houston. I will give you a 27-BRAVO update if you can read. It is a split burn. Forward 76. Aft 94. 2+07. 1+58. 09 12 06. 9+30. Did you copy? Over.

38 21 41 C Negative. Say it again please. = 76

38 21 45 CC Roger. Area 27-BRAVO: Split burn. Forward 76. Aft 94. 2+07. 1+58. 09 12 06. 9+30. Over.

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[REDACTED]

38 22 17 C Roger. Could you give us humidity or last dry and wet bulb temperature on your humidity check?

38 22 29 C Roger. They were about 75 and 77, but our humidity was around 60 percent.

38 22 37 CC Roger. Copied that. If you can, get your left and right cabin wall temperatures using the thermostat. Also, report on visible moisture, if any, and is your blotting paper wet to the touch? Over.

38 23 00 C Roger. The - I took the wall temperature quite some time ago in the left-hand food box and it was 75. The blotting paper is not wet to the touch, and there is no visible moisture.

38 23 14 CC Understand no moisture and not wet to the touch. Could you give me an estimate on the completion of your experiments D-9, S-6, and S-5, or roughly how much you've done on that?

38 23 29 C We haven't been able to do anything with D-9 that was when we could record any data. We are going to..... We ..... For S-6 we need one long pass over the United States to take a series of 35 pictures across the southwestern United States. .... to point the spacecraft down at the ground while we take a string of pictures.

38 23 53 CC Understand you need one more pass on S-5 and you have a fair amount of S-6. Is that affirmative?

38 24 00 C We have a fair amount of S-6. We've had some scattered S-5 sightings ..... pictures, but we need one run over the United States at least, and we'd like another one over the - over North Africa if we can work it in.

38 24 14 CC Understand. I copied that. For your target of opportunity on these experiments, we'd like to give them a priority of no. 1, S-5; no. 2, S-6; and no. 3, D-9, if possible.

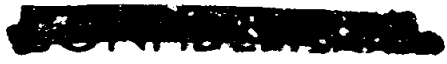
38 24 35 C Roger, it's going to be pretty tough to get a D-9 without any fuel.

38 24 39 CC That's affirmative. D-9 without any fuel.

38 25 04 CC Gemini 4, that's all from Houston. We'll be standing by. We have about 1 minute to LOS.

38 27 00 C Arabian Peninsula .....

[REDACTED]



37 29 24 C I just took frames 5, 6, 7, and 7 over North  
 Africa. .... frame 5 and 6 ....  
 Arabian Peninsula. taken all the way right  
 through the middle of the Peninsula, looking out  
 towards one of the .... there.

38 32 19 C .... toward the Persian Gulf ....

39 05 45 CC Gemini 4, Gemini 4. This is Houston CAP COM. We  
 have Canton under .... We'll be standing by. Over.

39 06 26 CC Gemini 4, Gemini 4. Houston CAP COM. Canton.  
 Standing by.

39 27 52 CC Gemini 4, RKV CAP COM.

39 28 02 CC Gemini 4, RKV CAP COM.

39 28 14 CC Gemini 4, RKV CAP COM.

39 28 17 C RKV, Gemini 4.

39 28 20 CC Roger. Are you reading?

39 28 23 C I read you loud and clear, RKV. How me?

39 28 25 CC Roger, you're coming in real good. We have an  
 Apollo landmark for you. Are you prepared to copy?

39 28 38 C All I received was are we prepared to copy. Are we  
 prepared to copy what?

39 28 44 CC Roger, it's an Apollo landmark.

39 28 50 C Stand by a second.

39 28 58 C Okay. Go ahead.

39 29 00 CC Roger, it's Cairo in the 26th rev. G.m.t. 07 18 37.  
 12 miles northwest, that is northwest of the track.  
 Slant range 90 nautical miles.

39 29 43 CC Gemini 4, do you copy?

39 29 44 C Roger, Cairo on the 26th rev. G.m.t. 07 18 37.  
 12 nautical miles northwest of track. 90 miles  
 slant range.

39 29 57 CC That's affirmative. Our Surgeon would like to talk  
 to you.

39 30 03 S Gemini 4, RKV Surgeon.

39 30 04 C Roger, RKV Surgeon. Go ahead.

39 30 07 S Roger, I have a couple of questions for you. First,  
 about the blood pressure. I don't want to bug you  
 very much on it, but did you change the O-ring?



- [REDACTED]
- 39 30 17 C No I didn't. I looked at the O-ring and I don't think it's the O-ring. I think it's my ..... I noticed when I got checked out the other morning just before launch, that they had a little trouble with it then. I ..... the blood pressure moves. It looks like a problem with my suit. Would you like for me to try to give you another one?
- 39 30 39 S Negative, there's no reason to do that right now. I have some more questions for you. If you aren't doing anything towards the end of the pass, we could try it.
- 39 30 46 C Okay.
- 39 30 50 S First, a couple of questions on your general condition. How restful do you think your sleep is?
- 39 30 57 C Well, it's not very restful. This radio feeds through into the other helmet. he can hear it, not very loud, he's got his ..... but he can hear all the radio transmissions and ..... it keeps waking you up.
- 39 31 13 S Roger, do you feel like you are dry or dehydrated?
- 39 31 20 C No, possibly I did notice, oh, at the end of about the 6th or 7th pass, I drank quite a bit of water ..... And got to feeling better. I've been eating and drinking right along now so I don't feel dehydrated at all.
- 39 31 35 S Roger, your voice sounds a little dry to us down here and you do think you are getting enough water to drink now?
- 39 31 42 C Yes sir, I think I'm being dried out by the oxygen. My nose did bleed ..... after launch.
- 39 31 54 S Roger. Jim, go ahead and keep pumping the water down because we have plenty aboard.
- 39 32 00 C Well, I hate to run out, you know, after only 3 days.
- 39 32 04 C Roger, White is drinking a good bit. I'm just about to start on my meal B of the second day, and Ed's sleeping now and when he gets up, he's going to eat his.
- 39 32 17 S Roger, if you have some time now you may give me a blood pressure.
- 39 32 21 C Okay.
- 39 32 54 S You are full-scale - Beautiful! - That's a beautiful record, Jim.
- [REDACTED]



39 33 26 S Gemini 4, RKV Surgeon. That's a good record. We have a good blood pressure on you.

39 33 31 C Okay, very good. I think I give you a good one every third or fourth time.

39 33 37 S Good average.

39 33 44 S Gemini 4, RKV Surgeon. We have nothing else. We'll stand by for your comments if you have any.

39 33 49 C Roger. I think I'll ..... I imagine we're powering ..... at the end of 4 days, besides from that we're in pretty good shape right now.

(CARNARVON REMOTED)

39 52 55 CC Gemini 4, Gemini 4, this is Houston CAP COM. Over.

39 53 09 CC Gemini 4, Gemini 4, Houston CAP COM. Over.

39 53 15 C ....., this is Gemini 4.

39 53 18 CC Roger, Gemini 4, I'd like to explain this split-burn to you. Over.

39 53 37 CC Gemini 4, Gemini 4, anytime your OAMS burn is greater than 120 ft/sec, we will give you a split-burn, 84 feet out of the forward thrusters and the balance out of the aft thrusters. Do you understand? Over.

39 54 03 C Okay, anytime OAMS is greater than 120 ft/sec, I am going to get 84 - 84 out of the forward and the rest out of the aft.

39 54 10 CC Roger, you got it, Jim. We will be standing by at all of these remote sites. I'll just give you a call and say, "Standing by" and if you get lonesome and you have any comments, you can come on up, and we have a few personal messages here from the doctor. Over.

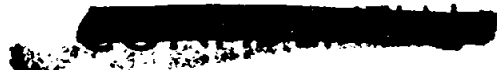
39 54 28 C Okay.

39 54 33 S Gemini 4, this is Houston Surgeon. I have a message for the Command Pilot. Little League score: the Hawks, 3; the Pelicans, 2; and Mike 1.

39 55 01 S Gemini 4, this is Houston Surgeon. Do you read?

39 55 03 C I sure do.

39 55 05 S Did you copy the score for the Hawk-Pelican game?



[REDACTED]

39 55 10 C Boy, did I ever!

39 55 12 S Roger, a message for the Pilot. The Dodgers 11, the Yankees 10, and Eddie had 1 for 3.

39 55 22 C Okay, he's sleeping right now, but I'll tell him when he wakes up.

39 55 26 S Roger, you can also advise him that his wife received the flowers and she forgot to tell him that today when she was on air-to-ground.

39 55 35 C Okay.

39 55 37 S Houston Surgeon out.

39 55 39 CC Jim, this is CAP COM. You also might tell the Pilot when he wakes up that Jim's here, and he's going to give him one more chance to change seats with him.

39 55 48 C Ha!

39 55 54 S Hey, Jim, this is Shakey, the Assistant Surgeon. How's the waste management coming along?

39 55 58 C ..... I want to know whose heart rate was the highest the other day.

39 56 06 S Hey, James. This is Shakey, the Assistant Surgeon. How's the waste management coming along?

39 56 12 C Hey, listen, the only free water we've got in here is every time we've tried to use that urine system.

39 56 31 CC Now have fun, Gemini 4, and as I say, anytime you get lonesome we'll be standing by at a remote site.

39 56 38 C Okay.

39 57 00 CC Gemini 4, Houston CAP COM. The Astros beat the Cardinals 5-2.

39 57 05 C Roger, what was that score - what was that score of that game that Eddie White played in?

39 57 11 CC Roger, the score in the game that Eddie White is Dodgers 11, Yankees 10, Eddie's batting was 1 for 3.

39 57 27 C ..... now we'll keep quiet.

40 00 22 P I can see a black fire down on the desert. You can see right down to the very source where it's coming from. I couldn't see exactly what it was, but it made a very, very distinct mark on the ground. I've taken several S-5 terrain pictures as we crossed the desert at 07:17. Feels like we've got a failure in magazine no. 7. It feels like one of the dogs isn't

[REDACTED]

[REDACTED]

catching down on the film or the film's balling up. I don't know. I don't believe we'll get much out of it.

40 09 53 C Just took up through Frame 29 on the Hasselblad on a run across North Africa and Arabia. Now, I guess we're over Iran .....

40 12 36 C What?

40 12 38 P .....

40 12 42 C How did you get it over there?

40 12 45 P .....

40 12 50 C Shoot! I was afraid to turn it. I was sure I was to the stop.

40 12 54 P ..... found out .....

40 13 00 C The lens is crapped out on this one ..... screwed up on that one ..... The sextant is screwed up. The 16-mm camera doesn't run but about half the time. I may go to sleep now.

40 14 00 C What?

40 14 01 P .....

40 14 07 P Taken many pictures with the camera?

40 14 08 C Not too many. No. Maybe I ought to start concentrating on it.

40 14 14 P I just wondered .....

40 14 19 C No, I haven't taken very many. Have you?

40 14 25 P I want to start working on .....

40 14 26 C Come on! Go to sleep! Listen, you'll be awake in an hour. You'll have 5 hours or 6 hours to sit around and play with that camera. Now, put it down and go to bed!

40 14 33 P .....

41 00 54 C Go ahead, RKV, Gemini 4.

41 00 57 CC Roger, we're expecting a Type 1 pass on you this time.

41 01 02 C Roger, I'll hurry up .....

41 01 45 C Okay, he's still asleep -

41 01 50 CC Don't bother to wake him. Do not bother to awaken the Pilot.

[REDACTED]



41 01 53 C Say again.  
 41 01 55 CC Do not bother to awaken him for us. We'll wait off until later on.  
 41 02 00 C Roger. . . . . 20 minutes.  
 41 02 10 C Do you want a . . . . . temperature and blood pressure?  
 41 02 23 CC Roger, Gemini 4. Stand by a second. We'll check with the Cape and see what they want here.  
 41 02 50 CC Gemini 4, RKV. Negative on the Type 1 on the Command Pilot.  
 41 03 04 CC Did you copy?  
 41 03 06 C Roger. You don't want a Type 1 test on the Command Pilot.  
 41 03 10 CC That's negative.  
 41 03 13 CC We'll stand by on this one.  
 41 03 15 C Okay. . . . .

CANARY ISLANDS

41 23 08 CC Gemini 4, Canary Islands CAP COM.  
 41 23 13 C Go ahead, Canary. Gemini 4.  
 41 23 14 CC Roger. Stand by to copy Apollo Landmark update.  
 41 23 19 C Okay. Stand by.  
 41 23 40 CC Gemini 4, Canary CAP COM.  
 41 23 43 C Roger.  
 41 23 45 CC Are you ready?  
 41 23 47 C Just a second.  
 41 23 52 C Okay. Go ahead.  
 41 23 54 CC Roger. Rev 27, Apollo Landmark 15: 08 52 59. 46 miles south.  
 41 24 18 C Roger. Apollo Landmark no. 15: Rev 27. 08 52 59. 46 miles south.  
 41 24 26 CC Roger. Your systems look good from here. Stand by. We want you to wake the Pilot up. We will run an Aero-Med Pass One on this pass.

**[REDACTED]**

41 24 37 C Roger. We just got him up.

41 24 39 CC Okay. Stand by for my Surgeon on UHF.

41 24 45 S Pilot. This is Canary Surgeon. Would you pump up your blood pressure cuff?

41 24 55 C He just put the thermometer in his mouth and he's getting the cuff out.

41 24 59 S Gemini 4, you need not take oral temperature. We will not have time. We will dispense with that. Proceed and pump up your blood pressure cuff.

41 25 08 C Okay.

41 25 25 C Canary, is this Apollo Landmark Investigation to be done with or without fuel?

41 25 36 CC Cuff is full-scale.

41 25 41 S Gemini 4, Canary Surgeon. Do you read?

41 26 16 S Gemini 4, Canary Surgeon.

41 26 18 C Go ahead, Canary Surgeon. Gemini 4.

41 26 20 S Your blood pressure was received. Begin exercise on your mark.

41 26 36 S Gemini 4, Canary Surgeon.

41 26 38 C MARK!

41 26 41 C Did you get my mark?

41 26 42 S Check. We received your mark.

41 26 45 C Okay.

41 27 14 C We're sending the blood pressure now.

41 27 20 S Gemini 4, Canary Surgeon. Your cuff is full. Have you completed your exercise?

41 27 26 C Roger.

41 27 06 S Gemini 4, Canary Surgeon. Your blood pressure has been received. May I have your food, water, and rest status?

41 27 17 P Roger, Gemini 4. I just got up from a long ..... nap. I had a 4 1/2 hour nap. Out of that time, I probably had 3 1/2 hours of sleep. I've had, since I got up, 3 swallows of water. I finished my - before I went to bed I had Meal A of day 2, and I'm getting ready to eat Meal B of day 2.

**[REDACTED]**

41 27 52 S Very good. I will return you to CAP COM. Canary Surgeon out.

41 27 56 P Roger.

41 27 58 CC Gemini 4, Canary CAP COM. We're at LOS. Do you have anything more?

41 28 01 C Roger. I'd like to know if that Apollo Landmark Investigation is going to be done without fuel.

41 28 08 CC Roger.

41 28 12 CC Flight says without fuel.

41 28 14 C Roger.

ROSE KNOT VICTOR

42 35 58 CC Gemini 4, Gemini 4, RKV CAP COM.

42 36 21 CC Gemini 4, Gemini 4, RKV CAP COM.

42 36 26 P RKV, Gemini 4.

42 36 30 CC Roger. Read you loud and clear. How me?

42 36 32 P Roger. Read you loud and clear.

42 36 34 CC Roger. I have some Apollo updates for you.

42 36 39 P Roger. Stand by one, please.

42 36 41 CC Roger.

42 37 05 P Okay. Go ahead with the updates.

42 37 07 CC Roger. Apollo Landmark closest approach: Rev 28, no. 11: G.m.t. 10 16 51. 28 miles south. no. 12: G.m.t. 10 21 50. 6 miles south. no. 13: G.m.t. 10 25 30. 1.5 miles north. no. 18: 10 30 13. 28 miles north. No attitude control will be used for these maneuvers.

42 38 08 P Roger, understand - no attitude control. Would you read the first one over? The first .....

42 38 15 CC Roger, the first one was on number 11 and the G.m.t. was 10 16 51. 28 miles south.

42 38 33 P Roger, understand. I got four updates. Is that correct?

42 38 40 CC That is affirmative. Four updates.

[REDACTED]

42 38 43 P Roger, be advised ..... the Command Pilot has started the sleep cycle and I just finished .....

42 38 58 CC Roger, everything looks good from down here.

42 40 01 P Right.

42 40 05 CC Gemini 4, we'll have LOS in about 1 minute here. Do you have anything?

42 40 10 P Negative, Gemini 4. And be advised on the D-9 of the Apollo Landmarks. Don't have any attitude around that would permit getting very much on them.

42 40 21 CC Roger, we understand on that. That's okay.

42 40 24 P .....

42 40 50 CC Flight advises that on numbers 12 and 13 you can use fuel sparingly. Do you copy?

42 40 59 P Roger, on numbers 12 and 13 I use fuel sparingly. Roger.

42 41 05 CC Roger. Roger.

CANARY ISLANDS

42 57 24 CC Gemini 4, Canary CAP COM.

42 57 29 C Go ahead, Canary. Gemini 4.

42 57 31 CC Roger, your systems look green.

42 57 34 C Roger, understand, systems green. Thank you. They look good up here.

42 58 01 CC Gemini 4, Canary CAP COM. Is your Quantity Switch in the READ position?

42 58 05 C That's affirmative. I'll turn it off now.

42 58 10 CC Roger, it's off.

43 00 29 CC Gemini 4, Canary CAP COM. Have you powered your ACME power supply?

43 00 34 C Affirmative.

43 31 44 CC Gemini 4, Carnarvon CAP COM. Standing by.

43 32 00 CC Gemini 4, Carnarvon CAP COM.

43 32 02 P This is Gemini 4. Go ahead.

[REDACTED]

43 32 05 CC Roger. Read you loud and clear. Can you give me a little info on how your control went over North Africa, and how much pulsing did you do?

43 32 12 P Roger, we used Pulse Control in a minimum amount; the target of number 12 was obscured by clouds; I had the time and location pretty well squared away. I could have tracked if I could have seen the target, I believe. Target number 13, it was in the clear, and I was able to pick up the city of Alexandria. The airport I think I ..... but I haven't been able to put my attention on looking for the airport. I could have spotted the airport. I went ahead and operated the camera and took some pictures as I passed over it. The location of the target from the data called up was satisfactory.

43 32 58 CC Roger, what time did you turn your ACME power supply off?

43 33 01 P Roger. I turned my ACME power supply off, I would estimate at about 35.

43 33 09 CC Roger, understand. Are you ready to copy a group of PLA, CLA, updates?

43 33 13 P Roger, go ahead.

43 33 16 CC 30-1: 109. 2+19. 13 00 13. 4+52. 9+40. 31-1: 84 aft will be 42. 2+20. 9+54. 14 34 22. 3+54. 9+18. 32-1: 84 aft will be 56. 2+20. 1+11. 16 08 16. 3+05. 8+53. 33-1: 84 aft will be 68. 2+20. 1+27. 17 42 15. 2+37. 8+49. 29-BRAVO: 84. 50 aft. 2+20. 1+03. 12 16 35. 12+08. 30-BRAVO: 120. 2+32. 13 50 19. 12+29. 34-4: 120. 2+32. 20 29 04. 3+33. 8+55. 31-BRAVO: 95. 2+01. 15 30 09. 11+48. 32-BRAVO: 86. 1+50. 17 05 01. 10+40. 33-BRAVO: 84. 1+47. 18 36 28. 10+01. Over.

43 37 09 P Roger. I got them all except for one quantity 33-1 the aft ΔV.

43 37 17 CC Aft ΔV 68.

43 37 18 P Roger, 68. You are getting pretty sharp calling these up.

43 37 21 CC Okay, very good. You're looking good here.

43 37 25 P Roger, everything is great.

43 37 33 P You don't have a new map update for me, do you?

**[REDACTED]**

43 37 38 CC Not at this time. You'll get one as you come along.

43 37 41 P Roger. I'll be looking for another one.

43 37 43 CC Roger, we'll pass that on to Houston.

43 37 45 P Rog.

44 18 20 CC ..... and that will be the end of the 29th rev.

44 18 23 P Roger. Understand. Ascending node, 119°, 12 57 00. 29th Rev.

44 18 33 CC Roger. We'd like your Quantity Read Switch ON, and we'd like an onboard mass quantity readout, please.

44 18 43 P Roger. The Quantity Switch is ON. Repeat your last request. You were coming garbled.

44 18 48 CC Roger. We'd like an onboard quantity readout, please.

44 18 54 P Roger. An onboard quantity readout. I'm getting 30 1/2 percent.

44 19 06 CC Roger, understand. You said 30 1/2 percent. Is that correct?

44 19 12 P That's affirmative.

44 19 12 CC Okay.

44 19 14 P It's good visual acuity.

44 19 28 P Roger. Everything's GO up here. The Command Pilot's having a pretty good sleep right now .....

44 20 15 CC Gemini 4, this is Houston. That's all we have for the present. We'll just be standing by.

CANARY ISLANDS

44 31 03 CC Gemini 4, Canary CAP COM.

44 31 32 P Canary, Gemini 4.

44 31 33 CC Roger, Gemini 4. Read you loud and clear. You look green from here.

44 31 38 P Roger. Everything's GO in the spacecraft. Looking good. The Command Pilot's asleep right now.

44 31 59 CC Gemini 4, Canary CAP COM. What is your primary O<sub>2</sub> tank pressure?

44 32 07 P Roger. Primary O<sub>2</sub> tank pressure is 950.

**[REDACTED]**

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44 32 14 CC You say 950?  
44 32 16 P That's affirmative. Just a little under.

CARNARVON

45 04 18 CC Gemini 4, Carnarvon CAP COM.  
45 04 37 CC Gemini 4, Carnarvon CAP COM.  
45 04 41 P All right. Go ahead, Carnarvon. Gemini 4.  
45 04 44 CC Okay. You're looking good here on the ground.  
What's your status?  
45 04 47 P Roger. The status is GO up here and everything's  
looking good.  
45 04 50 CC Roger. Have either of you used the fecal collection  
devices yet?  
45 04 55 P Negative, but it won't be long.  
45 04 57 CC Roger. Understand.  
45 04 59 P Roger. One thing you might check on, we've had a  
little ..... Do you want to take a reading on that?  
45 05 14 CC Okay. We'll take a check here on the ground. Stand  
by.  
45 05 18 P Coming down at you in about 5 or 10 seconds.  
45 05 31 P Coming on now.  
45 05 39 CC It's - 29 percent here on the ground.  
45 05 46 P Roger. We're reading the pressure now at 30. Thank  
you.  
45 05 47 CC Roger.  
45 06 00 CC Okay. We're just standing by here for you if you  
need anything.  
45 06 05 P Negative, everything's pretty good.  
45 06 07 CC Roger.  
45 47 42 CC Gemini 4, Gemini 4. This is Houston CAP COM. Over.  
45 48 06 CC Gemini 4, Gemini 4. This is Houston CAP COM. Over.  
45 48 28 CC Gemini 4, Gemini 4. Houston CAP COM. Over.  
45 48 48 CC Gemini 4, Gemini 4. Houston CAP COM. Over.

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[REDACTED]

45 48 53 P Houston CAP COM, Gemini 4.

45 48 56 S Roger. We are receiving your oral temp. We would like your Quantity Read Switch ON throughout the States pass. Over.

45 49 12 CC This is Houston CAP COM. You can commence your blood pressure at this time, and I'm turning you over to Aero-Med. Over.

45 49 25 S Gemini 4, this is Houston Surgeon. We have your oral temperature. You can send blood pressure now.

45 49 48 S Your cuff is full-scale.

45 50 45 S Blood pressure is ....., Gemini 4. Start exercise on your mark.

45 50 51 P On your mark.

45 52 03 S Blood pressure is received. Standing by for your food and water report. We have your feces report from Canaries at 09:06 Zulu.

45 52 11 P Roger. I understand. I have completed the second meal. I've had approximately 6 swallows of water. I've also had a good use of the defecation bag, and everything is in good shape.

45 49 53 CC Gemini 4, Houston CAP COM. Put your Quantity Read Switch ON and leave it ON until I tell you. Over.

45 53 01 P Roger. Will do.

45 52 03 CC Roger. I have some Flight Plan updates. Are you ready to copy?

45 53 19 CC Gemini 4, Houston CAP COM. Are you ready to copy Flight Plan updates? Over.

45 53 24 P Wait 1, please.

45 53 41 C Okay, Houston, go ahead. Gemini 4.

45 53 44 CC ..... a g.e.t. of 47+00 delete. Translation 2-Alpha. Horizon Scan Mode Set Check, and Horizon Scan Thruster Plume Check.

45 54 14 CC Gemini 4, at a g.e.t. of 47+00 minutes insert Experiment D-9, Run 1. At G.m.t. of 14 14 00 with OAMS. I say again, with OAMS.

[REDACTED]



- [REDACTED]
- 45 54 49 C This is Gemini 4 here. Understand at an elapsed time of about 47 hours you want to delete translation 2-Alpha, Horizon Scan Mode Set Check, and Horizon Scan Thruster Plume Check, and insert D-9, Run 1 at 14 14 00 with OAMS.
- 45 55 11 CC That is affirmative, Gemini 4. Also concerning Experiment MSC-1, we would like you to turn your ACQ Aid Beacon OFF for a period of about 5 minutes during the period of your MSC-1 Experiment. Recommend you do this between Kano and Carnarvon this pass. Over.
- 45 55 57 C Roger. Understand you want MSC-1 Experiment going to ACQ Aid Beacon turned OFF for 5 minutes.

BERMUDA

- 45 56 11 CC That's affirmative, Gemini 4. They want about 5 minutes of this experiment with the ACQ Aid Beacon OFF when there are no UHF transmissions.
- 45 56 22 C Do you want me to go to REAL TIME-DELAYED TIME or do you want me to turn OFF the ACQ Aid with the circuit breaker?
- 45 56 28 CC Roger. Use the circuit breaker.
- 45 56 30 C Okay.
- 45 56 38 CC Gemini 4, Houston. We'd like a repeat of your food and water report.
- 45 56 42 C From the Pilot, or do you want to do one from me?
- 45 56 45 CC That's from the Pilot, please.
- 45 56 53 P Roger. This is the Pilot. About 3 hours ago, I had Meal 2, day 2. I had about 4 or 5 swallows of water. I had a successful yes on defecation bag.
- 45 57 12 CC Roger, Gemini 4.
- 45 57 19 C Houston, this is Gemini 4. I just got up. Where are we? What station are we passing over right now?
- 45 57 28 CC Roger. We have you Bermuda right now. You just passed through Texas and Canaveral (Kennedy).
- 45 57 32 C Roger.
- 45 57 34 CC Good morning, Jim. How do you feel?
- [REDACTED]

**[REDACTED]**

45 57 37 C Oh, pretty good.

45 57 39 CC Sound great.

45 57 41 C Thank you. How are you?

45 57 44 CC Had a good night's sleep.

45 57 47 C I got a little more sleep this time than I have in the past.

45 57 49 CC How about that plug in your throat there. Have you taken that out when you were sleeping?

45 58 01 C Oh. Negative, I didn't disconnect my radio. I left it on.

45 58 05 CC Did it bother you at all?

45 58 08 C It has been up till now, but this time I guess I was pretty tired, and I slept without it.

45 58 13 CC Very good. .... Gemini 4, Houston. You can turn your Quantity Read Switch OFF now.

45 58 30 CC Gemini 4, Houston CAP COM. You can turn your Quantity Read Switch OFF.

45 58 34 C Roger, it's OFF.

45 58 38 CC Roger, you're looking good here. Have a good day.

45 58 41 C Roger.

45 59 12 CC Gemini 4, this is Houston CAP COM. We have your O<sub>2</sub> tank pressures around 970.

45 59 21 C Okay. We're reading about 960. We'll dump .....

45 59 25 CC Okay. Understand.

46 05 10 S When was this going ON?

46 05 15 C Cabin temperature is going ON at 13:22.

CANARY ISLANDS

46 05 29 CC Gemini 4, Canary CAP COM.

46 05 31 C Go ahead, Canary, Gemini 4.

46 05 34 CC Roger. Request that you use the Cabin Recheck Valve instead of O<sub>2</sub> High Rate. Also, be advised that Houston says do not relieve through the cabin if you can avoid it.

**[REDACTED]**

[REDACTED]

46 05 34 C We don't need a push.

46 05 54 C We don't have any other place to put the oxygen except in the cabin. We've just finished doing it to the O<sub>2</sub> High Rate. We got the ECS O<sub>2</sub> pressure down to 910.

46 06 02 CC Roger. They were warning you to avoid relieving through the cabin area.

46 06 06 C O<sub>2</sub> pressure down to 910.

46 06 09 CC Roger. I understand 910.

46 06 10 C Can you tell me why they want to use the Repress instead of the O<sub>2</sub> High Rate? Where else would we put the oxygen?

46 06 20 CC Roger.

46 06 24 P Jim, we're not .....

46 06 30 C Well, he said that in order to get MSC-1 they wanted the ACQ Aid Beacon OFF for 5 minutes. You know, you were going to leave - to do some ECS on and off ..... thruster.

46 06 41 P Okay.

46 06 50 P Cabin temperature comes ON at - I put it ON already.

46 06 53 C I don't know .....

46 06 58 C .....

46 07 03 CC Gemini 4, Canary CAP COM.

46 07 05 C Go ahead.

46 07 07 CC Roger. The reason for using the Repress was to avoid turning off your fans and to cut down on your noise level in your cabin.

46 07 17 C Okay.

46 07 20 CC They meant do not relieve overboard if you can avoid it.

46 07 26 C Oh, don't ....., they don't want to vent the ECS O<sub>2</sub> tank overboard directly. They want to vent it overboard through the cabin. Is that it?

46 07 34 CC They don't want to avoid overboard at all if possible.

46 07 36 C Roger, I know it.

[REDACTED]

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46 07 52 CC Okay. Your O<sub>2</sub> usage for the last 24 hours - correction - over the last 2 or 3 hours has been 25 percent higher than normal.

46 08 00 C Roger. Our cabin's been holding all right. There really doesn't seem to be much we can do about that. That tank pressure goes up and that is just about all there is to it. We're actually venting oxygen overboard that we don't need to.

46 08 14 CC Roger.

46 08 19 C How is our O<sub>2</sub> consumption? I've been plotting it and it looks like we're in reasonably good shape.

46 08 40 P It doesn't really call out for my time hack .....

46 08 44 C Okay.

46 08 50 P ..... get a drink of something.

46 08 52 C I'm thirsty.

46 08 56 CC Your rate even at your present rate - you have 5 or 10 hours more than you need plus secondary O<sub>2</sub>.

46 09 03 C Okay, fine. Thank you.

46 09 07 C And I'll try to take your advice and not vent any overboard, but I just don't know how I'm going to do that.

46 09 12 CC Roger, we understand.

46 10 00 P You know, it's going to be tough getting 14 ..... recording .....

46 10 05 C Aw, hell no.

46 10 07 C ACQ Aid Beacon is going OFF at 13:42.

CARNARVON

46 38 18 CC Gemini 4, Carnarvon CAP COM.

46 38 41 CC Gemini 4, Carnarvon CAP COM.

46 38 56 CC Gemini 4, Carnarvon CAP COM. Over.

46 38 59 C All right, Carnarvon. Gemini 4.

46 39 01 CC Roger, what's your status?

46 39 03 C We're in good shape.

~~CONFIDENTIAL~~

[REDACTED]

46 39 04 CC Roger. You're looking real good here on the ground. I'd like a few readouts from you.

46 39 10 C Okay.

46 39 11 CC I'd like OAMS source helium temp, pressure, and propellant quantity.

46 39 35 C Propellant quantity - I have about 61 percent remaining. It fluctuates a little between there and about 63.

46 39 43 CC Roger. How about your helium temp and helium pressure? OAMS source helium temp and OAMS source helium pressure.

46 40 04 P The helium temperature is 58 and the pressure is under 2000.

46 40 12 CC You say a little under what?

46 40 15 C 2000.

46 40 16 CC Roger.

46 40 56 CC Okay, we're standing by here on the ground if you need anything.

46 40 57 C We're preparing to do Experiment D-9, and we probably won't have any transmissions for you.

46 41 05 CC Okay. Very good.

46 58 40 CC Go ahead.

46 58 43 P We are starting the first run of Apollo. We have D-9, Run . . .

46 58 43 P We haven't picked up Antares, yet. I guess we have 5 minutes to do so, though.

46 58 52 P . . . . . Antares.

46 59 04 C : . . . .

46 59 12 P . . . . .

46 59 26 C Looks to me like we're a little . . . . . this Flight Plan.

46 59 33 P Is that Antares coming up there now?

47 00 14 P . . . . . yawed too far to the left.

47 00 16 C What?

47 00 17 P Corona Australis is coming up.

47 00 43 C . . . . .

[REDACTED]

**[REDACTED]**

47 00 55 P That's the Corona Borealis that should be coming up.  
47 00 55 C Yes, that's the one .....  
47 00 57 P Yes.  
47 01 09 P Is it coming in your side?  
47 01 09 C Yes .....  
47 01 21 P Yes, that's right. We're yawed around to the right.  
47 01 36 C Yes, how's the horizon look?  
47 01 41 P My horizon's real good.  
47 01 48 P Just coming in.  
47 01 51 P High? ..... up?  
47 01 52 C Straight up above.  
47 01 55 P Okay. Stand by.  
47 01 56 C Yes, I know. I don't know how they expect us to  
sight .....  
47 02 02 P Shucks.  
47 02 07 P It's an awfully high one to give us.  
47 02 12 P .....  
47 02 15 C .....  
47 02 17 C Okay, now you ought to be able to see something  
without any trouble.  
47 02 26 P The sky?  
47 02 36 P ..... come on, yet.  
47 02 38 C ..... Southern Cross ..... star chart. We ought to  
be able to see that.  
47 02 48 P .....  
47 03 04 P I think I see Antares. I can never get down - not  
in my view.  
47 03 14 P .....  
47 03 14 P Clear at the top of my window.  
47 03 19 C Yes .....  
47 03 21 P I can't possibly - I can't get this down underneath  
far enough. There, hold on.  
47 03 31 C .....  

**[REDACTED]**

[REDACTED]

47 03 48 P Way up too high for me.

47 03 50 C Too high?

47 03 52 P Yes, way too high. I can't possibly get it unless you pitch up to it and yaw back down.

47 04 02 P No, - yes, but we didn't get it. I've got Gemini coming up now. No, that's not Gemini, that's part of the Southern Cross.

47 04 19 P No, it crossed right through - high.

47 04 26 P Yes, I saw it go across the very top of my window. Is that where it was on yours?

47 04 38 C Right now, you're not even seeing .....

47 04 43 P Okay, now I think it's coming where I can see it.

47 04 57 C You've got to have a whole segment .....

47 05 07 C I can take a sighting on it now .....

47 05 14 P Yes, I got a sighting from it.

47 05 16 C Did you?

47 05 17 P Yes.

47 05 52 C .....

47 05 52 P Roll to the right.

47 05 52 C .....

47 05 57 P Huh?

47 05 57 C .....

47 06 02 P Yes, roll it.

47 06 07 P Yes, the horizon is gone and I ..... The star's too high with respect to the horizon.

47 06 14 C I know it ..... way, way, way too early.

47 06 43 P You got to put ..... in?

47 07 02 C ..... up. They're in.

47 07 19 P Hey, I thought I .....

47 07 24 P I'll get the .....

47 07 28 C ..... be perpendicular unless we wait till it gets down lower.

47 07 45 C .....

47 07 50 C Get back up .....

[REDACTED]

[REDACTED]

47 07 52 P .....  
47 08 38 P It's gone out the top of my window now, Jim. I've  
got too much horizon.  
47 08 43 P Yes, that's just too big an angle in there.  
47 08 50 P It's only 23° right now .....  
47 09 02 C .....  
47 09 28 P Can you roll it to the left a little bit; I have  
too much horizon now.  
47 09 28 C That's what I think. How about rolling it just  
horizontal?  
47 09 50 P Oh, boy, there goes all the "0" rings.  
47 09 57 C Okay.  
47 10 02 C I can't get the horizon.  
47 10 04 P Okay.  
47 10 33 C How are you?  
47 10 38 C I can't ..... star.  
47 10 52 P The horizon's gone now.  
47 10 55 C When?  
47 10 56 P I don't have a horizon anymore.  
47 10 58 C Disappeared.  
47 10 59 P Yes.  
47 11 02 C Same here with me. I don't know whether I'm up,  
down, sideways, or anything else. I like to at  
least know the orientation.  
47 11 07 P Okay, we never got a good one on that.  
47 11 09 C Okay, we've been running into problems.  
47 11 12 P We tried to get Antares twice.  
47 11 36 C Can you see into this side?  
47 11 38 P Not ..... try bring myself around.  
47 11 43 C You can control it if you like.  
47 11 48 P I might be able to get it better that way.  
47 12 12 P Where'd my book go?  
47 12 28 C Oh, shoot!  
47 12 40 C ..... horizon comes back .....  
[REDACTED]



47 12 45 P Okay, I got it. But before I can shoot any stars  
 I've got to get this stuff behind me, or I won't  
 see a star. What are you looking for? Okay. I've  
 got it pitched this way and roll it back in there  
 or I won't see anything.

47 13 16 P I guess it's not.

47 13 21 C See any stars?

47 13 26 P A few stars - okay. Yaw more to the right.

47 13 26 P Okay. The stars are back out again.

47 13 38 C No, I didn't expect .....

47 13 52 P What I have to do is keep my window shaded all of  
 the time.

47 13 55 C Yes.

47 13 55 P Out of the sun and then I can see.

47 13 58 C Oh yes, I can see stars.

47 14 07 P ..... of the stars in ..... 178, that's pretty good  
 .....

47 14 14 C .....

47 14 24 P I haven't got any horizon pictures..

47 14 24 C .....

47 14 31 P No, what I see now .....

47 14 38 P What I wanted to try to do ..... Are you dark over  
 there?

47 14 45 P .....

47 14 57 C .....

47 15 15 P I don't see the stars. Do you?

47 15 26 P ..... one time.

47 15 31 P I'm supposed to have the proper attitude.

47 15 40 P I can roll back over now, though.

47 15 48 P .....

47 15 50 C Yes. ....

47 16 38 P Got to keep the horizon in there.

47 17 16 C .....

47 17 23 P I don't think we do. I'm in a good black now.

[REDACTED]

47 17 26 C .....  
47 17 28 P As far as the shade. I'm shaded enough .....  
47 17 31 C ..... the star and the sky.  
47 17 38 P Neither can I.  
47 17 43 C .....  
47 17 45 P Okay, you go ahead and see if you can find any.  
47 17 47 C .....  
47 17 52 P They're just not there.  
47 17 55 C. Okay, let me try it. ....  
47 18 02 P Okay.  
47 18 04 C ..... the recorder OFF.  
47 18 04 C ..... the recorder OFF.  
47 18 16 C .....  
47 18 16 P .....  
47 18 28 P Yes, .....  
47 18 33 C Okay, we're starting to pitch up close to the horizon now, and .....  
47 18 43 C Okay. Blunt-end-forward so the sun's behind us.  
47 18 48 C I still see no stars.  
47 18 50 P No, neither can I.  
47 19 02 C I have a black sky out there, but I'm getting reflection off the window. How about you?  
47 19 07 P Yes, I get a lot of reflections off that dirty outside part.  
47 19 11 C Half of my window is black and the other has a little sun shining on it. Sun shining on the nose of the spacecraft so I've got to look past a lighted object. I don't see a star, and I never have seen the stars in the daylight. .... much better at sunrise when half the spacecraft is dark and the other half is light.  
47 19 31 P Yes, then you can see it.  
47 19 35 C Okay, my window's in the sunlight. How about yours?  
47 19 39 P Mine's in sunlight too .....

[REDACTED]

[REDACTED]

47 19 47 C Heck, I guess that what we're saying is that .....  
D-9 cannot be done in the daylight.

48 20 02 P I concur.

47 20 07 P Right now, there doesn't seem to be a way for us to  
find any stars in the daylight.

47 20 07 C No, it sure doesn't. There's no way you can see  
them.

47 20 10 P There is certainly no way to do it after .....

47 20 19 P Okay.

47 20 28 C ..... a long window. A window that has a long .....  
off the window where you can look straight off the  
.....

47 20 38 P .....

47 20 40 C ..... okay, ..... look out .....

47 21 43 C I don't see a star anywhere.

47 21 43 P I know I can't. I've got direct sunshine on my  
window.

47 21 50 C .....

47 21 55 P .....

47 21 59 C ..... nose of the spacecraft.

47 22 02 P Yes.

47 22 19 P Yes .....

47 22 21 P Okay.

47 23 33 C My window's not in the light any more, and I still  
don't see the stars. If there's any possibility in  
the world to see stars in the daylight and horizon  
at the same time, I'm in the position right now  
where I should be able to do it. And don't have  
the sun on the nose of the spacecraft. It's on the  
bottom. I can see the bottom, and I can't see a  
single star, not a single star.

47 23 39 C Go ahead, Houston. Gemini 4.

47 23 40 CC Roger, are you busy with D-9?

47 23 43 C No, I think it just drew to a close. We just can't  
see the stars in the daylight, and we can't carry on  
the daylight portion of it. We'll wait till we get  
back to the nighttime and do a little bit more with  
that.

[REDACTED]

[REDACTED]

47 23 54 CC Roger, Jim. I want to talk to you about this O<sub>2</sub> high usage rate thing.

47 24 00 C Okay.

47 24 01 CC We don't think it's any problem. We would like for you to put your Quantity Read Switch ON and leave it on for the next several hours so we can get a feel for what's going on. Even at the rate that's been used in the last several hours, it won't be any problem, but we'd like to find some way to control this thing without it being a nuisance to use so you won't be bothered with it. That's the reason we want to take a look at it for some time. Don't like the idea of you having to reduce pressures or build up pressure every few minutes. Do you read me?

47 24 41 C Houston, Gemini 4. I got the part where we leave the Read Switch ON for a while, and then all the rest cut off. Say again.

47 24 59 CC Okay. Jim, how do you read me now?

47 25 05 C ..... for the next couple hours. Say after that.

47 25 35 CC Wait till we get Bermuda acquisition. I'll try you there.

BERMUDA

47 26 36 CC Gemini 4, Houston. How do you read now?

47 26 45 P Go ahead, Houston. Gemini 4.

47 26 50 CC What I was saying - we want to get a hack on what's going on with that pressure buildup in the Primary O<sub>2</sub> system. We want to try to find some way to control it without you having to relieve cabin pressure every few minutes or every few hours, so this is the reason we want your Quantity Read Switch ON for the next several hours.

47 27 11 C Okay. What did you say about my usage rate?

47 27 15 CC It's a little bit higher than it has been, but it is nothing to worry about. You have plenty so don't be concerned about it.

[REDACTED]

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47 27 24 C Okay. I've been plotting it, and it looks like we're going to end up with 7 or 8 percent remaining.

47 27 33 CC Yes, we're just trying to find some way to keep you from having to relieve the cabin pressure every now and then.

47 27 44 C Okay. Yes, I don't like that either.

47 27 46 CC Yes.

47 28 08 CC The Flight Surgeon would like to know if either one of you had any trouble with drying around the eyes or dry throat.

47 28 17 C My throat is a little dry, and our eyes were bothering us about the end of the first day quite a bit, but that's all cleared up now.

47 28 25 CC Okay. Very good.

47 28 32 C Hey, Gus. Can you get me a G.m.t. hack?

47 28 35 CC Roger. I'll give it to you at 14 45 00. In about 20 seconds.

47 28 41 C Roger. 14 45 .....

47 28 50 CC Ten seconds to go.

47 28 57 CC 14 45.00 on my mark.

47 29 00 CC MARK!

47 29 02 C Roger, 14 45 00.

47 29 10 CC Any complaints?

47 29 13 C No, except this thing isn't very big.

47 29 46 CC On your next pass over the States we'll have the latest news for you.

47 29 38 C Okay, very good.

47 30 43 C Ed and I were just commenting that the weightlessness gives you a light-headed feeling, a heady feeling.

47 32 43 P But not a heady feeling .....

47 32 45 C Yes, I did, and Ed was saying that his headache is gone. He had one earlier.

47 32 50 C And I don't have one yet, but I feel closer to having one now than I have had at any time. I think it's this darn 100 percent oxygen. I breathe it in and I don't think I've ever been this dry.

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[REDACTED]

With the worst cold I've ever had, where I can't breathe through my nose and I sound like I've got a big deep cold. I sound to myself like I'm very ..... but I can now if I - I was when I was sleeping, too. But it was burning my nose, actually, when I was sleeping. I had a very hoarse sound to myself. Do I sound that way to you, too?

- 47 33 23 P Yes.
- 47 33 26 C ..... But I think because of this 100 percent oxygen where I kept assimilating it. I suspect that maybe my ears and my sinuses are always below ambient and I know I've got to pop my ears about every hour or two.
- 47 33 40 P I have a little .....
- 47 33 48 C Yes, my mouth and my throat are quite dry at this time. As a matter of fact, I think we ought to have a drink of water.
- 47 33 50 P You ought to put a little female velcro on the .....
- 47 34 57 C We're traveling across Africa right now. I'm in the Pulse Mode. We had a rather unsuccessful portion of D-9. We're going to .....

CANARY ISLANDS

- 47 38 28 CC Gemini 4, Canary CAP COM.
- 47 38 46 P This is Gemini 4, here, Canary. Go ahead.
- 47 38 49 CC Roger. You still look real good.
- 47 38 51 P Okay. Listen. Be advised that I've just been maintaining my own little personal plot of ECS O<sub>2</sub>, and I don't see any increase in quantity used in the rate over the last few hours. It looks like my ragged plot is still going to come out about what it looked like it would right after we got .....
- 47 40 23 CC Houston concurs.
- 47 40 25 C Okay.
- 47 44 55 P Aw, shoot.
- 47 44 55 C I'm just going to come around to Small-End-Forward, kill off my yaw, get in the attitude that I'd be in to cage the platform.

[REDACTED]

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47 45 35 C I want to get into ..... attitude, Ed, and I want you to tell me what you think it is. .... 00 attitude pitch, 0 attitude pitch.

47 45 47 P MARK!

47 45 50 C ..... Got one of those, haven't we?

47 45 50 P Yes .....

47 45 57 P That's 60°?

47 45 59 C Yes.

47 46 02 P .....

47 46 07 C ..... 30°.

47 46 11 P .....

47 46 11 C .....

47 46 16 C ..... 30° pitchup.

47 46 43 C ..... all dry. Yes.

47 46 45 C .....

47 46 47 C ..... yawed way off.

47 47 04 C Let's see. What else did the Flight Plan .....

47 47 09 C .....

47 48 07 C How does the roll look to you now, Ed?

47 48 09 P Okay.

47 48 11 C How about pitch?

47 48 18 P .....

47 48 21 C Well, I've got it just about on the horizon. How about yaw? What do you say we're doing on yaw?

47 48 26 C .....

47 48 26 P We yawed right.

47 48 33 C Okay, we yawed right. That's what I think, too. About 10° or so. You tell me if we're yawing around ..... to the left. .... you tell me when we get to .....

47 49 04 F .....

47 49 06 C Stand by. Yes, we do.

47 49 16 C Okay, I'd say they're right there. ....

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47 49 18 P Yes, I'd say we're within a couple of degrees.

47 49 26 C Okay. Very good. Looks to me like I've yawed left a little bit.

47 49 42 P .....

47 50 02 C Okay. Now I think I've yawed zero right there, Ed. What do you think?

47 50 14 P Zero or just a little left. Right there.

47 50 16 C Okay.

47 50 18 P The ES sensor is coming off at this time.

47 51 57 C The right side of my head is getting sore where I keep rubbing the hair the wrong way when I try to turn my head inside my helmet so that I can look through the window long ways. Get the best view I can through it.

47 55 53 C Okay, we're just now approaching darkness again and we're looking at stars with small-end-forward and as yet, I don't see any. It's under my .....

47 56 11 P .....

47 56 33 C I think it does too, Ed.

47 56 38 C Okay, now half of what I see is light and the other half is dark. So we're going a little bit sideways to the small-end-forward, but Ed's side is in the dark completely, I believe. Isn't it, Ed?

47 56 50 P I see a star .....

47 56 50 C Okay. First star was at 15:12 + 15 12 52 it was.

47 57 02 P Right.

47 57 04 P .....

47 57 09 C We haven't crossed the terminator yet. You have a horizon out there now, though, Ed.

47 57 14 P .....

47 57 21 C No ..... yet. My side's still in sunlight.

47 57 26 P .....

47 57 33 C My side of the spacecraft is bathed in the sunlight and I don't see the star.

47 57 38 P .....





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47 57 42 C Yes, I get the distinct impression that the upper part of my window is a lot dirtier than the lower part. Do you have that impression too, Ed?

47 57 53 P .....

47 57 54 C No, I think the gradation of this goop that's all over it, whatever it is, looks like it's on about here on up - looks like it's on about the zero pitch line on up.

47 58 06 P There's plenty of stars out there, now.

47 58 09 C Okay, I still don't have any stars.

47 58 21 P There's a very pretty horizon out there now.

47 58 26 C Okay, I have my first star. - I'm quite sure that this coating on my window is about zero pitch attitude line on up. I can see a star down below that ..... you'd think I'd be able to see it. It might just be the peculiar way the reflections are coming back through the window.

47 59 11 C Okay, Edward, I'm going to leave the recorder on until it runs out.

47 59 18 P I've done that already.

47 59 20 C What ..... You just ..... as we go along?

47 59 30 P ..... start out with a very fuzzy horizon .....

47 59 52 C It does what?

47 59 52 P It .....

47 59 54 C Oh, okay. Yes ..... I can see that. As a matter of fact, let me take a picture of that phenomenon right now.

48 00 02 P .....

48 00 14 C I don't think we got anything there. It wasn't set on the right lens opening for that. Whoops! What happened to the .....

48 00 26 P .....

48 00 26 C To the Hasselblad, the winders .....

48 00 38 C .....

48 00 52 P .....

48 00 52 C Yes.

48 00 59 P .....

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[REDACTED]

48 01 02 C Okay .....

48 01 02 P Try to get up high enough to get the stars ..... horizon.

48 01 21 C Yes, they need to fix this .....

48 01 23 P .....

48 01 26 C No. No, I don't see any stars really at all, here.

48 01 38 P .....

48 01 42 C Okay, well, use those.

48 01 45 P I don't have reference to them.

48 01 47 C No horizon, you mean?

48 01 54 P ..... that is the Big Dipper.

48 02 11 C Let's not use any more fuel on this thing.

48 02 18 C Yes. Yes, go ahead and give it a couple of more squirts, whatever you think you need. .... try to take about two measurements here, Ed.

48 02 30 P ..... stars out here right now ..... up too high to get them without .....

48 02 42 C Are you seeing those multiple images?

48 02 47 P No, I focused .....

48 02 52 C I was doing it in the complete dark and maybe I was .....

48 03 14 P Do you have .....

48 03 16 C Yes.

48 03 23 P I see Leo coming out, but they're too low now.

48 03 28 C ..... they're going to rise.

48 03 28 P Huh?

48 03 28 C They're going to rise. Use Leo.

48 03 40 P ..... bank in.

48 03 47 C Okay.

48 03 50 C How high up is it?

48 03 52 P .....

48 04 04 C Okay. Well, let's run a series of Leo. Is Regulus up yet?

[REDACTED]

48 04 26 C I'm going to stop my event time, since we're not using it.  
 48 08 45 P .....  
 48 08 47 C 06:30.  
 48 08 50 P 6° 30 minutes.  
 48 08 54 C MARK!  
 48 09 14 C 4°, 55 1/2.  
 48 09 30 P MARK!  
 48 09 40 C 8°, 45.  
 48 10 04 P Are you .....  
 48 10 07 C .....  
 48 10 09 P Let me get .....  
 48 10 16 C Go ahead.  
 48 10 28 C Hey, Altair is up there. Let's see, this thing I was looking at is probably Vega.  
 48 10 35 C It was Vega.  
 48 10 42 C .....  
 48 10 52 P On Altair and I'll use a green filter, no filter .....  
 48 11 28 P I have 16° and 55 minutes. The second one is .....  
 48 12 16 C Yes, couldn't you?  
 48 12 38 C .....  
 48 12 40 P Okay, 19° and 29 minutes.

CARNARVON

48 12 50 CC Gemini 4, Carnarvon CAP COM.  
 48 12 54 C Go ahead, Carnarvon. Gemini 4.  
 48 13 06 P .....  
 48 13 15 CC Gemini 4, Carnarvon CAP COM.  
 48 13 16 C Go ahead, Carnarvon. Gemini 4.  
 48 13 20 C Go ahead, Carnarvon. Gemini 4.

[REDACTED]

48 13 21 CC Okay. You're looking good here on the ground. How are you doing?

48 13 25 C Doing fine.

48 13 28 CC Okay. We don't have anything here for you. You have gone by two full days, and we'll keep standing by here if you need anything.

48 13 33 C Okay. We're trying to take some star measurements right now, so we probably won't be talking too much.

48 13 37 CC That's right.

48 13 38 P 23:51.

48 13 40 C 23:51?

48 13 42 P 23:51.

48 13 52 C Has the nose started to get in the way?

48 13 54 P Yes, sure has. ....

48 14 09 P Well, with a constellation like that. It's a big one.

48 14 21 C .... Vega that I saw before.

48 14 26 P You got it identified?

48 14 28 P .....

48 14 30 C Yes. Altair.

48 14 33 P Altair .....

48 14 59 P Mark again.

48 15 33 C 30° and 6 minutes.

48 15 35 P How much?

48 15 38 C 30° and 6 minutes.

48 15 40 P What kind of a filter?

48 15 42 C That's a clear filter. How many measurements have I taken? Five?

48 15 45 P Four. Four.

48 15 47 C The first two were clear, second was ....., and the third and fourth were clear.

48 15 57 C Try one of those.

48 16 02 P .... I kind of lost all .... now.

48 16 09 C .....

[REDACTED]

[REDACTED]

48 16 11 P Well, I've had it down ..... when I came back.

48 16 26 C I think I've probably blocked him out, he's too high.

48 16 28 P Yes, okay.

48 16 35 P We should spend the night side here doing, just taking pictures - taking sightings without a particular attitude. The object of the game is to nail a couple of ones right off the bat that you know of and use them.

48 16 57 P Oh, that looks like Vega there ..... Deneb coming up.

48 17 06 C Okay.

48 17 16 P I think their kind of programing for us is no good. I think we'd do better if we make our own sightings.

48 17 26 C Yes. I think we ought to knock off on the ....., Ed.

48 17 28 P Okay.

48 17 28 C Well, okay, let's leave it on and see what we do. If we need one or two pulses we'll do it.

48 17 35 P Okay.

48 17 49 P Okay, there's Deneb. I'll start a series with Deneb.

48 18 01 P Altair's perfect and has no ..... around it.

48 18 06 C Yes.

48 18 11 P ..... and maybe I can hold it better that way.

48 18 16 C Okay.

48 18 30 P I'm ..... right to the top of the row. 18:33 .....

48 19 04 C Okay, why don't we knock off the .....

48 19 06 P Yes, I think ..... fuel .....

48 19 12 C I know you do ..... don't have .....

48 19 13 P Yes, that's what I say - you - makes it exciting, you know. I think we got a few readings there for them.

48 19 18 C Yes.

48 19 21 P Let me make a little comment on it. The green filter, to me, made a rather - a little bit of .....

[REDACTED]



48 19 33 P The one time - the other time I tried to use it, I got a pretty good measure on it the next time. The ..... using no filter, I used the top of the glow of the thick layer of the air glow. It's a rather nebulus - you've got to kind of calibrate your own eyeball and try to put it in the same place each time ..... It takes definite attitude control to make these measurements. You can't expect to make these measurements without using any fuel. It's such a small window, you have to pick up your star and bring it down to the horizon keeping the horizon and the star in your field of view.

CALIFORNIA

48 50 50 CC Gemini 4, Houston CAP COM.  
 48 51 02 CC Gemini 4, Houston CAP COM.  
 48 51 13 CC Gemini 4, Houston CAP COM.  
 48 51 15 C ..... Gemini 4 here.  
 48 51 18 CC Roger. I'm reading you weak. You read me okay?  
 48 51 20 C Roger. Loud and clear.  
 48 51 22 CC Roger. You're clear now. You ready for your 33-1 time?  
 48 51 30 C Stand by just a second.  
 48 51 31 CC Roger.  
 48 51 47 C Okay. Go ahead.  
 48 51 50 CC Okay. 47 ft/sec out of your forward-firing. That's 1+18. 120 ft/sec out of the aft. That's 2+31. At 17 42 53. 2+48. 8+49. And the 33-1 time without burn: 17 36 33. 7+36. 4+58. Correction on that last 14+58. Want to read those back to me?  
 48 52 44 C Houston, Gemini 4. I didn't get either one of those. Say again.  
 48 52 51 CC Okay. 47 ft/sec and 1+18 on your forward-firing. 120 ft/sec and 2+31 on your aft-firing, at 17 42 53. 2+48. 8+49.  
 48 53 16 C Roger. Got 'em. Go ahead with the other one.  
 48 53 18 CC Okay. Without burn: 17 36 33. 7+36. 14+58.



[REDACTED]

48 53 33 C Okay. Got them that time.  
48 53 36 CC Okay. If you will turn your computer on, we'll  
give you an update.  
48 53 44 C Roger. Computer coming on.

TEXAS

48 53 56 CC Jim, we'd like you to make a Main Battery Check, if  
you would, please.  
48 54 00 C Roger. We are making a Main Battery Check, right  
now.  
48 54 03 CC Okay.  
48 54 20 C Okay, we got computer light - running light on.  
You can go ahead.  
48 54 24 CC Okay. Computer light on.  
48 54 43 CC Okay, on your D-9 Experiment.  
48 54 50 C Roger.  
48 54 52 CC Okay, we'd like for you to try to see stars on the  
daylight side with the earth shine and not in view.  
Just forget the sextant; just get dark adapted the  
best you can on the daylight side and see if you  
can pick out some stars.  
48 55 09 C Roger, we tried that and we can't - we were not  
able to pick out any stars on the daylight side.  
48 55 15 CC Okay. Then we'd like to know what filters were  
satisfactory on the sextant.  
48 54 24 C Okay. We have some notes on that. Listen, I think  
on the 33rd Rev, if at all possible, I'd like to take  
those ..... shots across the Southwestern United  
States on Rev. 5.  
48 55 40 CC Roger.  
48 55 42 C I said, I sure would like to get that out of the way.  
48 55 45 CC Okay, we'll run it through out Flight Plan section  
here and let you know.  
48 55 49 C Okay, I think it would be foolhardy to run any more  
D-9 Experiments in the daylight, because that is  
hopeless.

[REDACTED]

[REDACTED]

48 56 01 CC Okay, fine. Coming over the States here at G.m.t. of 16:11, they'd like you to make some weather pictures. There're some thundershowers up north of us.

48 56 10 C Okay.

48 56 11 CC I guess you've already passed that now. Maybe you can get 'em next time around.

48 56 18 C All right. Ed was taking some pictures. I don't know what he was taking pictures of, though.

48 56 23 CC Okay.

48 56 24 C I think he got some terrain pictures.

48 56 28 CC Okay. Are you ready for your little news release?

48 56 31 C Roger.

48 56 33 CC Okay. All of the big headlines, of course, are still about what you are doing and particularly about seeing that satellite up there yesterday. Also, the conversation with the wives is getting a big play.

48 56 49 C Okay.

48 56 51 CC Things in Vietnam have quieted down, and not too much going on over there right now.

48 56 57 C Okay.

48 56 59 CC The Oilers are going to play in the Rice Stadium instead of the Domed Stadium.

48 57 03 C They are!

48 57 04 CC Yes. Apparently they couldn't get together on the rental price. Bud Adams was quoted as saying that the Dome may be the eighth wonder of the earth, but the rental price is surely the ninth wonder.

48 57 15 C Aw, shucks! Hey, Gus, have you tried to figure out what I saw out there over Hawaii and Guaymas?

48 57 24 CC Have you figured it out? You saw it.

48 57 27 C I don't know. I took a picture of it but the sun came across the window right after I saw it. I only ..... 15 seconds.

48 57 35 CC I haven't heard any more about it, Jim. We'll look into it.

48 57 37 C Okay.

[REDACTED]



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48 57 38 CC You have a valid load, and you can turn your computer off now. That gives you a TR time of 36-4 in the computer.

48 57 50 C Very good.

CAPE KENNEDY

48 58 07 CC Hey, Jim. Gemini 4, CAP COM.

48 58 12 C Roger. Go ahead.

48 58 15 CC Near as we can tell, the only satellite it could be would be Pegasus, from what we note here.

48 58 21 C That's what I thought it might be, too.

48 58 25 CC Okay.

48 58 31 CC Hey. The Astros did beat the Cards yesterday, 5 to 2. They're still in sixth place though.

48 58 37 C Okay. He's got this information for you.

48 58 39 CC Go ahead.

48 58 40 P The batteries were 9 and 22.5.

48 58 44 CC Roger. 9 and 22.5.

48 58 47 P All the rest of the electrical readings are up.

48 58 50 CC Say again.

48 58 51 P The rest of the electrical readings are normal.

48 58 53 CC Okay. Fine.

48 59 06 CC Next time you bleed down your primary oxygen pressure, bring it all the way down to about 800 psi. We can't find much else that we can do about the thing. Just bring it down lower so you are working through a wider band. We don't think that is going to cause you to use any.

48 59 28 C Roger. Bring it down. Listen, I just then ran the thing up to about 5 1/4, and I'm trying to hold it at 5 1/4 with the Repress ..... hold it. If not, I'll bring it down to around 800.

48 59 40 CC Okay. We think you can go way down in your pressure now without hurting anything, so if it gets to be a nuisance just bring it on down so that you don't have to watch it so close and be bothered with it too much.

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[REDACTED]

48 59 52 C .....  
48 59 57 CC I can't read you very good right now. Wait until we get to Bermuda again, will you?  
49 00 01 C Okay.  
49 00 20 C At about 16:03, as we came across on this last pass, across the Gulf of California, the Mexico side, we were in a perfect small-end-forward down attitude so I took a series of seven or eight photographs of the terrain ..... stereographic .....

49 00 41 CC Gemini 4, Houston CAP COM.  
49 00 44 C Go ahead, Houston. This is Gemini 4.  
49 00 50 CC Roger. Could you give us an estimate as to how far that satellite was from you yesterday?  
49 00 57 C I couldn't really tell. It looked like quite a large object, and it looked like I was closing on it rather rapidly. Distance is rather hard to judge. I'd say 10 miles or so.  
49 01 10 CC 10 miles?  
49 01 11 C That's just a guess. I really can't tell. I was close enough where I could see -  
49 01 19 CC You were close enough to see what?  
49 01 21 C ..... arms and cylindrical things sticking out.  
49 01 26 CC You're cutting up pretty badly, there. I couldn't read that.  
49 01 30 C Okay.  
49 01 31 CC Well, that came through good.  
49 01 33 C All right. I said, I got close enough to it .....  
49 01 39 CC Close enough to it to what?  
49 01 41 C .....  
49 01 44 CC Well, as near as we can tell, there wasn't anything that close to you. Pegasus was about 1200 miles away.  
49 01 49 C No, it wasn't quite that close - that far away.  
49 01 57 CC Pretty good eyeballs, all right.  
49 01 59 C Well, I took a picture of it. I just hope it comes out.

[REDACTED]

[REDACTED]

49 02 03 CC So do we.

49 02 05 C Unfortunately -

49 02 11 CC Are you using VOX, because you are cutting out.

49 02 14 C No, I'm using continuous interphone, PUSH-TO-TALK.  
How do you read me now?

49 02 17 CC Good. Every now and then the last part of your  
sentence cuts off.

49 02 22 C Okay, maybe I have a weak thumb. Listen, would you  
ask the doctors if it's okay if I use this exerciser?

49 02 29 CC If you use it?

49 02 30 C ..... but I'd still like to get more exercise than  
I'm getting.

49 02 39 CC Sure, go ahead.

49 02 40 C Okay.

49 02 42 CC Just let us know how much you use it, if you will?

49 02 44 C I sure will. But I -

49 02 47 CC It's okay. Go ahead and use it.

49 02 49 C Okay, use it .....

49 02 52 CC Say again.

49 02 54 C Can I use it -

49 02 58 CC You're cutting out again. Go ahead and say again.

49 03 00 C May I use the exerciser like the M-3 exercise?

49 03 07 CC Affirmative.

49 03 09 C Okay. Thank you.

49 04 45 CC Gemini 4, CAP COM.

49 04 48 C Roger. Go ahead.

49 04 49 CC Do you have a time back at the exact time you saw  
the satellite?

49 04 54 C No, I do not. I called it out on the radio. It  
ought to be on the tape.

49 05 00 CC Okay.

49 05 03 C I also put it on the voice recorder in here, so we  
can go back and look for it.

49 05 07 CC Okay. But at the exact time you saw it, you put it  
on tape?

[REDACTED]



49 05 13 C That's right.  
 49 05 15 CC On the radio?  
 49 05 16 C Roger.  
 49 05 26 CC Hey, Jim.  
 49 05 28 C Go ahead.  
 49 05 30 CC Why do you want to use the exerciser? Are you  
 feelin stiff, cramped, or what?  
 49 05 35 C Yes .....

49 05 36 CC Say again.  
 49 05 38 C ..... been in orbit two days, and haven't .....  
 49 05 42 CC It's garbled. I couldn't read it.  
 49 05 46 C I say, I just haven' moved around very much and  
 I .....

49 05 51 CC Okay. That makes sense.

CANARY ISLANDS

49 13 08 CC Gemini 4, Canary CAP COM.  
 49 13 20 C Canary, this is Gemini 4. Go ahead.  
 49 13 22 CC Roger. You look good and GO from the ground.  
 49 13 26 C Roger. Everything is GO and fine up here.  
 49 13 42 C Canary, Gemini 4. Am I passing right over your  
 sight at this time?  
 49 13 48 CC You're getting close. You're passing well to the  
 south of us.  
 49 13 59 C Canary. Gemini 4.  
 49 14 03 CC Gemini 4, Canary CAP COM. You're not passing over  
 us at this time.  
 49 14 08 C ..... at this time?  
 49 14 11 CC Say again.  
 49 14 14 C I can't read you. I think I just passed over your  
 island.  
 49 14 17 CC Roger, you are passing over Cape Verde.



49 14 20 C Okay, I'll look down and see you. I saw you standing outside waving.

CARNARVON

49 46 26 CC Gemini 4, Carnarvon CAP COM. If you read, insert the oral temp ..... Command Pilot's mouth.

49 48 10 CC You need not acknowledge, but you look good here on the ground.

49 47 17 CC We're receiving your oral temp.

49 47 40 CC Pump a little further on your blood pressure.

49 47 46 CC Cuff full-scale.

49 48 34 CC Will you pump up that blood pressure again?

49 48 45 CC Cuff full-scale.

C .....

49 49 08 CC Okay. We've got a valid oral temp. Remove the probe. How do you read?

49 49 19 C Read you loud and clear.

49 49 20 CC Okay. I've got some update information for you.

49 49 24 C Stand by just a second.

49 49 26 CC Okay.

49 49 32 C Is this Flight Plan or retro times?

49 49 36 CC These are S-5 and Apollo Landmark runs.

49 49 40 C Okay.

49 49 43 CC For S-5, it'll be Rev 32 over the States instead of Rev 33. The pass will start at 17+40. And I want you to make an Apollo Landmark Run no. 4.

49 50 31 C I got the stuff for S-5. Say again the Apollo no. 4. Is that Rev 30?

(Part of pass missing from tape)

[REDACTED]

49 52 07 C ..... cups of water in addition to this, since the last time I saw you. I had about a 4-hour nap, and that's the best sleep I've had so far.

49 52 16 S You look good on the ground here, too. Can you say again the water?

49 52 18 C I've had about 10 or 15 gulps of water since I woke up.

49 52 22 S Very good.

49 52 24 C I'm going to have another 10 or 15 here, as soon as I get through eating.

49 52 28 S Okay, fine. That's all we need. Surgeon out.

(Part of pass missing from tape)

49 52 55 CC ..... 19:15 Zulu.

49 53 01 C Okay. Start 19:15. .... 19 16 42.

49 53 07 CC Roger. That's a good thing.

49 53 09 C Okay. Is this without fuel or with fuel?

49 53 15 CC We'll get you squared away.

49 53 19 C Okay.

49 53 22 CC That'll be with fuel. With fuel.

49 53 24 C Okay. With fuel.

49 53 26 CC Roger.

HAWAII

50 12 44 CC Gemini 4, Hawaii.

50 12 56 CC Gemini 4, Hawaii.

50 12 59 C Gemini 4.

50 13 01 CC Roger. We have your T/M solid. All systems look good on the ground. I have a map update for you when you're ready to copy.

50 13 11 C Go ahead.

[REDACTED]

[REDACTED]

50 13 12 CC Roger. Rev 33. G.m.t. 18 51 44. Longitude 151° East. Did you copy? Over.

50 13 31 C Roger. Rev 33. G.m.t. 18 51 44. 151° East. Thank you.

50 13 39 CC Roger. Hawaii CAP COM standing by.

50 13 42 C Roger.

50 20 22 P We're going to run our first real S-6 now, rather S-5, which will be a series of 35 photographs on the 32nd Rev, coming over the Western part of the United States. They will be done at 5-second intervals.

50 24 08 CC Gemini 4, Houston CAP COM.

50 24 22 CC Gemini 4, Houston CAP COM.

50 24 25 C Go ahead, Houston. Gemini 4.

50 24 27 CC Roger. Are you real busy now, Jim?

50 24 29 C Well, we're just about to start this S-5. What can I do for you?

50 24 33 CC Well, you go ahead. I'll get you to give me a call when you get done, and I'll pass up this other information to you.

50 24 41 C Okay.

TEXAS

50 28 53 CC Gemini 4, Houston CAP COM. We'll need your computer on.

50 28 58 C It's on.

50 29 00 CC Roger. Computer on.

50 29 03 C ..... Roger.

50 30 01 P Okay, completion of this run was at 17:47 and we ran off to counter number 39. We started about 1 or 2. We ran off about 35 or 36 pictures.

[REDACTED]

  
BERMUDA

50 35 37 CC Gemini 4, Houston CAP COM

50 35 47 CC Gemini 4, Houston CAP COM

50 35 49 C Roger, Gemini 4. Go ahead with your update.

50 35 53 CC Roger. It's 40 feet. Did you get the last one I gave you?

50 35 58 C Negative, I never got 36-4.

50 36 01 CC Okay. 36-4: 40 ft/sec forward. That's 1+06. 120 ft/sec aft at 2+31. At 23 38 08. 2+48. 8+43.

50 36 33 C Roger. Was that 2+48 and 8+43?

50 36 35 CC Affirmative.

50 36 40 CC Okay. We would like to know if you have your Squib Battery 1 off?

50 36 48 C Roger, we just bumped off.

50 36 50 CC Okay. Fine.

50 36 53 CC Okay. You have a valid 36-4 in your computer. You can turn your computer off.

50 36 59 C Okay. Computer's off.

50 37 01 CC Okay, and if you want to - in fact, we'd like you to update all of your Type 2 Medical Passes to Type 1. That'll give you a little more exercise.


50 37 10 C Okay. Very good. All Type 2's to Type 1.

50 37 13 CC Okay, and how much has Ed been sleeping the last couple of hours? Can you give us a clue on that?

50 37 20 C Roger. Ed's only had about an hour nap. We're going to have to rearrange our sleep cycle a little bit, too.

50 37 26 C Okay. Have you felt rested with the amount of sleep you've got, or do you think you'll need some more?

50 37 34 C No, I don't think we're getting an awful lot of rest out of it, but on the other hand, we're not doing much so we're really not too tired. I think we'll go through this next pass, and Ed'll go back to sleep again.





[REDACTED]

50 37 47 CC Okay. The other thing is, when you were doing your maneuvering during the first orbit, did you get that recorded on your onboard tape?

50 37 58 C You mean on my voice onboard tape?

50 38 00 CC Yes.

50 38 02 C Say again.

50 38 03 CC Yes. Did you get any of that - did you get it recorded on your onboard tape?

50 38 09 C Roger. We got a good bit of it.

50 38 11 CC Okay. Good.

50 38 17 CC Hey, we'd like you to bring your Primary O<sub>2</sub> pressure down to 800. It's up to - we're reading it at 960.

50 38 23 C Okay. I've got 950. We'll bring it on down.

50 38 25 CC Okay.

50 38 32 C Gus, on this - what's on the Voice Tape Recorder - they say we were turning it on and off. So we don't have it all.

50 38 40 CC Say again.

50 38 46 CC Say again, Jim.

50 38 49 C Say again, Houston.

50 38 51 CC Say again.

50 38 54 CC Hey, Jim. This is Gus again. Do you read Houston still?

50 39 00 C I'm not reading you.

50 39 02 CC Hey, do you want to talk to your wives next pass?

50 39 06 C Sure.

50 39 08 CC Okay. If you want them, we'll put them on.

50 39 37 C Okay, on that last pass we took about 38 pictures on the Synoptic Terrain Photography, starting a little bit east of San Diego and until we ran into the cloud coverage again. We picked up with intermittent pictures as soon as we started over the southern part of the United States down around Alabama and Mississippi and on across to Florida. We got some very good pictures of the weather in that area, then we got some pictures of the air fields around Jacksonville. We took a couple of

[REDACTED]

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pictures of the Cape. Probably one of the best pictures we got was one shooting back, and we got the whole weather formation along the coastline starting with Florida and going all the way back to Texas. A very well defined line of weather following closely to the coastline. Then we took some pictures of the weather formation in the State of Florida, around Cuba and the island area, and into the gulf ..... weather build-ups, clouds, and we took a couple of pictures of the island, some very good pictures. We ended up taking up 55 pictures.

50 40 31 CC Gemini 4, Houston CAP COM.

50 40 36 CC Gemini 4, Houston CAP COM.

50 58 03 C Just saw a satellite, very high, ..... spotted away like a star on the ground when you see one go by. A long, long ways away. When I saw this satellite go by, we were pointed just about directly overhead. It looked like it was going from left to the right. .... back towards the west, so it must have been going from south to north.

51 16 20 P The fix on the vent valve and the ECS O<sub>2</sub> was very cleverly fixed to take care of John's complaint that it vented out of scale. Now, of course, it vents down into the scale and causes quite a big of problem, as everyone knows, with the oxygen. The problem still lies in getting the ..... in here .....

51 20 11 CC Gemini 4, Carnarvon CAP COM.

51 20 22 CC Gemini 4, Carnarvon CAP COM.

51 20 31 P Go ahead, Carnarvon, Gemini 4.

51 20 33 CC Roger, read you loud and clear. I've got a long list of updates for you. Let me know when you're ready to copy.

51 20 39 P Roger, stand by one, please.

51 20 48 P Go ahead.

51 20 50 CC 35-4: 83 forward, 57 aft. 2+18. 1+11. 22 03 38.  
3+05. 8+43.

51 21 15 P Roger.

51 21 16 CC 36-4: 40 forward, 120 aft, 1+06. 2+31. 23 38 08.  
2+48. 8+43.

51 21 44 P Roger.

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51 21 45 CC 37-3: 83 forward, 41 aft. 2+18. 0+50. 00 56 11.  
 3+48. 9+10.

51 22 11 P Roger.

51 22 12 CC 38-3: 83 forward, 54 aft, 2+18. 1+08. 02 30 02.  
 3+00. 8+42.

51 22 36 P Roger.

51 22 36 CC 39-3: 83 forward, 68 aft, 2+18. 1+25. 04 03 10.  
 2+40. 8+26.

51 23 03 P Roger.

51 23 04 CC 34-DELTA: 84 forward, 72 aft, 2+19. 1+30.  
 19 34 27. 10+07.

51 23 28 P Roger.

51 23 30 CC 35-DELTA: 84 forward, 57 aft, 2+19. 1+11.  
 21 07 34. 10+07.

51 23 51 CC Correction. That'll be 11+30.

51 23 57 P Roger. Roger, got them.

51 24 02 CC Okay, 36-DELTA: 84 forward, 43 aft, 2+19. 0+55.  
 22 40 42. 12+17.

51 24 23 P Roger.

51 24 24 CC 37-DELTA: 114. 2+25. 00 14 40. 12+22.

51 24 42 P Roger.

51 24 43 CC 38-DELTA: 100. 2+07. 01 49 14. 12+01.

51 25 00 P Roger.

51 25 01 CC Okay, I want to go back and check that 35-DELTA.  
 The GMTRC should be 21 07 34, and the next number  
 is 11+30. Did you copy that one?

51 25 13 P That's affirmative. Got it. Got them all and  
 those are good calls.

51 25 16 CC Okay, thanks. The people back in Houston would like  
 some kind of a spare moment to try and describe on  
 your onboard voice tape recorder everything you  
 remember that happened on your first rev.

51 25 30 P Roger, we'll try to describe everything that happened  
 on the first rev on the onboard tape recorder. We've  
 already done that.

51 25 36 CC Okay, very good.

51 25 39 P Roger, everything looks GO up here.

[REDACTED]

51 25 40 CC Okay, it looks real good here on the ground.  
51 25 42 P Roger.  
51 25 46 C Carnarvon, Gemini 4.  
51 25 47 CC All right, go ahead.  
51 25 49 C What's my latest apogee-perigee?  
51 25 51 CC I'll get you a new one. Hold on a second.  
51 26 01 CC We have not ..... This pass we'll get it for you.  
51 26 06 C Okay, okay, Carnarvon.  
51 26 09 CC Go ahead.  
51 26 10 C You might advise Houston that as far as we're concerned S-5 and S-6 are complete. Do not do any more flight planning.  
51 26 19 CC Okay. Complete on the S-5 and S-6. We got that.  
51 26 30 CC Okay, here's your apogee-perigee: 88.1 148.7.  
51 26 40 P Roger. 88.1. 148.7.  
51 26 42 CC There you go.  
51 26 49 CC And they say you got a real low decay rate.  
51 26 52 P Roger.  
51 26 56 C It's a streamlined capsule.  
51 26 58 CC Say again.  
51 27 00 C It's a streamlined capsule.  
51 27 01 CC The fellow sitting next to you is streamlined.  
51 27 04 C Roger.  
51 27 12 P And I say this is a streamlined capsule.  
51 27 15 CC Roger.  
51 27 30 CC Your boss says it's incredible.  
51 27 34 P Rog.  
51 40 06 CC Gemini 4, Hawaii.  
51 46 18 CC Gemini 4, Hawaii CAP COM.  
51 46 43 CC Gemini 4, Hawaii CAP COM. Do you copy?  
51 46 47 C Roger, Hawaii. Gemini 4. I read you.  
51 46 50 CC Roger. We would like to request you take a cabin humidity reading, and a hatch temperature reading.

[REDACTED]

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51 47 05 C Roger. Say that again, you're oscillating.

51 47 09 CC Roger, request a cabin humidity reading and a hatch temperature reading.

51 47 18 C Okay, we just finished doing that a little while ago. About half-way around on the night side the hatch temperature was 67°, and stand by and I'll give those others.

51 47 31 CC Roger.

51 47 36 C Roger, the cabin dry bulb was around 72°, 73°, and the wet bulb was around 60°. Stand by and I'll give you the relative humidity in just a minute.

51 48 28 C Hawaii. That relative humidity is about 61 percent.

51 48 32 CC Roger. Copy 61.

51 48 35 CC Also have update for your Apollo D-9 run whenever you're ready to copy.

51 49 11 CC Gemini, Hawaii.

51 49 29 CC Gemini 4, Hawaii CAP COM.

51 49 42 CC Gemini 4, Hawaii CAP COM on UHF. Do you copy?

51 49 58 CC Gemini 4, on UHF. Do you read?

51 50 42 CC Gemini 4, Hawaii CAP COM on UHF. Do you read?

51 50 52 CC Gemini 4, on UHF. Do you copy?

51 50 56 C Gemini 4.

51 51 00 CC Roger, I have some updates for your Apollo D-9, Rev 33.

51 51 00 CC Standing by. Waiting until you're ready to copy.

51 51 13 C Okay, go ahead.

51 51 15 CC Roger, Rev 33, run 4, start time 19 43 00, that's sunset time. End 0-20. I repeat 20 19 00, which is sunrise. Did you copy? Over.

51 51 50 C Roger. We got them.

51 51 52 CC Also, would like to advise that you will have a SPADATS test on Rev 34 over Antigua. Your ES sensor should be switched on from 19 20 00 to 19 35 00. Did you copy? Over.

51 52 29 CC Gemini 4, Hawaii CAP COM. Did you copy them? The last?

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[REDACTED]

51 57 07 C It looks like ..... over to the right about 10°  
.....

51 57 54 CC Gemini 4, this is Houston CAP COM.

51 58 02 CC Gemini 4, Houston CAP COM.

51 58 10 CC Gemini 4, Houston CAP COM.

51 58 13 P Go ahead, Houston CAP COM, Gemini 4.

51 58 17 CC We want both of you to drink lots more water. Do  
you read?

51 58 29 CC Gemini 4, do you read?

51 58 31 P Roger, this is Gemini 4. Reading you broken up,  
but stand by one. We're going to be running a  
.....

51 58 46 CC I didn't read.

51 58 48 P Roger, stand by for about five.

51 59 33 P Houston CAP COM, Gemini 4. Stand by for about  
5 minutes, we'll be working on this Apollo Tracking  
Project and we'll be back up with you.

51 59 44 CC Roger.

52 01 05 C I just saw one down there .....

52 01 07 P Is it real white?

52 01 10 C No, it's not that white.

52 01 12 P ..... white pants. There's a lot of clouds up there.

52 01 36 P Going over Mexico, I think .....

52 02 07 C .....

52 02 10 P Huh?

52 02 12 C .....

52 02 1, P I never saw it over here. Look here .....

52 02 29 C .....

52 02 34 P I can't believe we missed .....

52 02 36 C No, neither can I. We sure have. ....

52 02 41 P This looks like the area coming up on us now, Jim.  
There's the Big Bend. I believe we're passed it,  
Jim.

52 02 53 P Yaw and let's take a picture of the Big Bend. Can  
you? Here, let me see if I can get it.

[REDACTED]

[REDACTED]

52 02 58 C .....  
52 03 00 P All right. See if you can pick up .....  
52 03 02 C I'm going to track on the - see that white spot up there along the coast?  
52 03 10 P I think this is Corpus Christi coming up here. Over there, you might be able to pick up an air field down there.  
52 03 19 P Yes.  
52 03 26 C ..... that white spot down there.  
52 03 41 CC Gemini 4, Gemini 4, this is Houston CAP COM. Do you read?  
52 03 43 P Roger, stand by, please.  
52 03 50 P All right ..... but not too .....  
52 03 53 C .....  
52 04 18 CC Gemini 4, this is Houston CAP COM. Do you read?  
52 11 18 CC Gemini 4, Houston CAP COM.  
52 11 37 CC Gemini 4, Houston CAP COM.  
52 12 15 CC Gemini 4, Houston CAP COM.  
52 12 27 CC Gemini 4, Houston CAP COM.  
52 24 00 P Is it clear?  
52 24 09 P Let's try to get those this time.  
52 24 10 C If you're tired, I'll give you some help.  
52 24 20 P I got a lot of the horizon over here. You might roll back to the left a little bit.  
52 24 25 P Now, there's the horizon - that's what the horizon does. You can't see it now, but the horizon changes between sunset and sunrise. Quite a bit.  
52 24 28 C As a matter of fact. I want to take a picture of this.  
52 25 00 P I took a picture with the long lens to show how the horizon changes between sunset and sunrise.  
52 25 07 C Okay.  
52 25 09 P Yes. You got it?  
52 25 10 C That's what I was going to do.  
52 25 17 P .....  
[REDACTED]

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52 25 18 C .....  
52 25 20 P Man, I can't see anything now.  
52 25 33 CC Gemini 4, Houston CAP COM.  
52 25 40 CC Gemini 4, Houston CAP COM.  
52 25 45 P Felt that?  
52 25 50 P Yes, that really wipes me out. Very, very .....  
I can see they .....  
52 25 51 CC Gemini 4, Houston CAP COM. Over.  
52 25 59 CC Gemini 4, Houston CAP COM.  
52 26 03 C How is the horizon?  
52 26 05 P The horizon's not bad.  
52 26 07 P How is it supposed to be, - we're supposed to be  
.....  
52 26 14 CC Gemini 4, Houston CAP COM.  
52 26 17 C ..... yaw around to the right .....  
52 26 27 CC Gemini 4, Houston CAP COM.  
52 26 45 P Look at those stars.  
52 26 46 CC Gemini 4, Houston CAP COM. Over.  
52 26 48 P How do you like that stuff?  
52 26 55 P Got a yaw, now roll right.  
52 27 00 C There's something wrong.  
52 27 05 P I hate to tell you, Jim. I can't recognize any of  
them.  
52 27 09 P Okay, I've got the ..... Now, roll over to the  
right.  
52 27 17 CC Gemini 4, Houston CAP COM.  
52 27 28 CC Gemini 4, Houston CAP COM.  
52 27 32 P Okay. Shoot some pictures.  
52 27 41 C ....., Ed.  
52 27 47 P Okay, I .....  
52 27 48 CC Gemini 4, Houston CAP COM.  
52 27 52 P Look down below.  
52 28 05 P I'll pitch up, Jim.

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52 28 07 C It's going up now?

52 28 09 P Got to go faster. It's going up faster than we are.

52 28 13 CC Gemini 4, Houston CAP COM. Over.

52 28 18 C How's that! Is it going faster?

52 28 21 P I'm catching up now.

52 28 24 C Are you making an aim to your right and come around  
.....

52 28 29 P I want you to yaw, pitch back down.

52 28 31 C You want me to pitch down now?

52 28 33 P No, not till I get there.

52 28 41 CC Gemini 4, Houston CAP COM.

52 29 00 P Okay, start pitching down.

52 29 04 C Is that enough?

52 29 07 P No. - Yes.

52 29 41 C How are we doing?

52 29 43 P Okay.

52 29 57 P If I could find the horizon, I got it hacked. I  
got the star, and I got the blue filter on. It cut  
everything out except my star, pretty well. But I  
haven't got down to the horizon yet.

52 30 26 P This thing, I think, could do with an eye stabili-  
zation.

52 30 29 C Yes, I think it can too, Ed. I said that .....  
looked like ..... too.

52 30 41 C Hey, am I down too low? I've got a lot of horizon  
in my window.

52 30 43 P No, I think that pitch is right.

52 31 09 C .....

52 31 18 P Okay, I'm ready to start taking a measurement here  
in a minute.

52 31 26 P Okay, when I put the blue filter on, the horizon is  
gone.

52 31 36 C You are right! It's this blue filter.

52 31 41 P Right.

52 31 43 C How about the green filter?

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52 31 49 P Right now, both of them. I think it's such a dark night.

52 31 53 P The green filter I have cut out most of the air-glow.

52 31 57 P It leaves me a little tiny band. And it's pretty hard to measure from.

52 32 07 C Why don't you get that band and see what kind of angles you get?

52 32 09 P Well, I want to try. I don't think I ought to use that filter.

52 32 12 C Nope.

52 32 14 P Not yet.

52 32 16 C Why don't you do a, say, ..... after it went out.

52 32 19 P Well, it's such a little bit, it's almost .....

52 32 33 C Yes, the airglow is pretty dim. Not glowing very much, is it?

52 32 35 P No.

52 32 38 P I've been taking some measurements on the horizon .....

52 33 38 P Okay.

52 33 40 P The star went out the top of the .....

52 33 48 C The star went out the top. I couldn't hold it anymore.

52 33 50 C Okay, you want me to do the next one then?

52 33 53 P No, let me try one more hack at it.

52 33 57 C That will hold, maybe ..... a little better.

52 34 02 P We found out that the filters aren't too good.

52 34 05 C Yes, I planned on playing a lot around with the filters, just themselves when you were sleeping. The next thing I was going to do, I was just going to get the sextant out and play with the filters and stuff.

52 34 26 C .....

52 34 31 P I'm taking my helmet off.

52 34 48 C Yes .....

52 36 25 C How you doing?

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[REDACTED]

52 37 05 C What?

52 37 36 C Got them yet?

52 37 40 C What?

52 37 42 C Okay, what was that question again? I can't hear very well.

52 38 55 C Gus?

52 38 58 C Okay, go ahead ..... What is it? Now tell me what they are.

52 39 12 C Tell me what they are, now.

52 39 17 C Okay, start with the third reading.

52 39 37 C 11:27. What?

52 40 00 C Is it okay for you?

52 40 42 C I think that's true.

52 41 20 CC Gemini 4, Houston CAP COM.

52 41 25 CC Gemini 4, Houston CAP COM.

52 41 30 CC Gemini 4, Houston CAP COM.

52 41 37 CC Gemini 4, Houston CAP COM. Over.

52 41 42 C You're taking your helmet off and the clear filter. Right?

P .....

52 41 53 C What is it, Ed?

P .....

52 41 56 CC Gemini 4, Houston CAP COM. Over.

52 41 57 C What was it?

P ..... 120th.

52 42 08 C You want the ' e down? You want to go to ..... We're ..... You think it might help?

P .....

52 42 10 CC Gemini 4, Houston CAP COM. Over.

52 42 29 CC Gemini 4, Houston CAP COM. Over.

52 42 30 C You okay, huh?

52 42 44 CC Gemini 4, Houston CAP COM. Over.

52 42 55 C That help you?

[REDACTED]

[REDACTED]

52 43 06 CC Gemini 4, Houston CAP COM Over.

52 43 07 C Say again. .... 16 minutes.

52 43 12 C Okay now. Use that curve.

52 43 19 CC Gemini 4, Houston CAP COM Over.

52 43 23 C Use that curve for .... Yaw right? Left or right?

52 43 31 CC Gemini 4, Houston CAP COM Over.

52 44 00 C You're using Arcturus, instead.

52 44 05 C It isn't a simple task, is it?

52 44 19 C How're we doing?

52 44 24 C You okay?

52 44 43 C .....

52 44 57 C Hello.

52 45 07 C Want me to pitch down?

52 45 55 C MARK!

52 46 05 P Yaw to the left.

52 46 47 C Boy, there's a nice horizon out there now. The moon is setting and the airglow layer and the .....

52 47 23 C MARK!

52 47 34 C 34:28 1/2. Approximately .....

52 47 57 C What?

52 48 09 P It was planned.

52 48 11 C Why do you put a question mark after it?

52 48 15 C You use the wrong star?

52 48 26 P I used the green filter.

52 48 35 C Yaw left? - Yaw left.

52 48 51 C How's that?

52 49 25 C What?

52 49 31 C What are you talking about? Is that what it was? Did you get the reading?

52 49 49 C .... Centauri, .... Go!

52 40 57 C Any star we could find would be a good deal.

52 50 02 C Ready to yaw around to the right?

[REDACTED]

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[REDACTED]

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52 50 15 C Okay. Rigil Kentauri is one of them. - which one is Rigil Kentauri?

52 50 35 C ..... get away an attitude.

52 50 40 C The one farthest away. Rigil Kentauri .....

52 50 50 C Golly. How do they expect .....

52 51 45 C What?

52 52 26 C Why don't you take one of the Southern Cross stars, then?

52 52 31 C .....

52 53 04 C What? - Well, I think when we finish the flight work .....

52 53 24 C Are there any known stars out there close to the horizon?

52 53 31 C Yes. ....

52 53 38 C Are there any stars close to the horizon?

52 54 43 C The green filter is the best?

52 57 49 CC Gemini 4, CRO.

52 57 49 CC Gemini 4, CRO CAP COM.

52 58 02 CC Gemini 4, CRO CAP COM.

52 58 12 CC Gemini 4, CRO. Do you read? It liiks like we're losing some power leads. Will you push them down on your chest. Push them down.

52 58 30 CC And if you read, give me ..... from the cryogenic gage ..... Quantity Read Switch.

52 58 38 CC Roger. Got that.

52 58 59 CC Okay. Standing wave looks much better now.

53 00 57 C Ed thinks that you need to ..... to control the spacecraft for angles over 20°. On the same token, I noticed you were going through some pretty big gyrations.....

53 01 14 C Yes, because you're left .....

53 01 20 C If you got time, we've got one more ..... for you.

53 03 09 C .....

52 03 14 C The blue filter cuts the whole horizon out.

53 03 22 C The blue filter.

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[REDACTED]

53 03 45 C 27. What?

53 04 03 C What did you hear that time?

53 04 21 C No filter the first time, right?

53 04 33 C Got a battery ..... Got another .....

53 04 58 C Right, Ed?

53 05 13 C Ed, turn the ACME power supply off.

53 06 25 C Ed, do you have the Blood Pressure Bulb?

53 06 30 P Got Gemini? No.

53 06 38 P ..... testers on.

53 11 48 CC Gemini 4, CSQ CAP COM. Do you copy?

53 11 52 CC We have a good oral count. We have a good oral count.

53 12 03 CC Start your blood pressure and stand by for Surgeon on your HF.

53 12 09 C Roger.

53 12 11 S Gemini 4, this is Surgeon. On your blood pressure.

53 12 14 C Pressure coming up ..... on the temperature.

53 12 17 S Roger. We got your temp.

53 12 22 C You're blocked out. Say again.

53 12 24 S Roger, we got your temp, and we now have a full-scale on your cuff.

53 12 37 S Gemini 4, do you read?

53 12 40 C You're blocked out. Say again, please.

53 12 42 S Gemini 4, this is Surgeon. We have got a temperature and now have a full-scale on your cuff.

53 12 46 C Roger.

53 13 20 S Gemini 4, this is Surgeon. We received your blood pressure, and you can start your exercise on your mark.

53 13 34 S Gemini 4, do you read?

53 13 42 C CSQ Surgeon, Gemini 4, ..... blood pressure .....

53 13 47 S Gemini 4, Surgeon. You're broken. Would you say again?

53 13 51 C Surgeon, did you get a good blood pressure?

[REDACTED]

[REDACTED]

53 13 52 S Roger. We got a good blood pressure. You can start your exercise on your mark.

53 14 19 S Gemini 4, Surgeon. Do you read?

53 14 22 C Roger, Gemini 4. Did you get a good blood pressure?

53 14 24 S Roger. We got a good blood pressure. You can start your exercise on your mark.

53 14 31 C Roger. He has already started and will be sending you his blood pressure in a moment.

53 14 35 S Roger.

53 14 41 C He's finished.

53 14 43 S Roger. He's stopped. Okay, we'll have a blood pressure.

53 15 06 S Gemini 4, Surgeon. We have both full-scale on cuff.

53 15 11 C Roger.

53 15 31 S Pilot, this is Surgeon. Chuck Berry says no reason not to get 8 hours if you so desire. Do you read?

53 15 38 C Roger, understand.

53 15 43 C Can we now hold it off on our ..... Right now and we got a little off on our ..... We'll try to pick up the schedule and get back on it.

53 15 49 P Roger.

53 15 55 C And the Pilot missed the sleep period starting a little after 28 hours elapsed time .....

53 16 03 S We now have a valid blood pressure. We would like to have a detailed eating, drinking, and sleep report from the Command Pilot, please.

53 16 18 C Surgeon, this is Command Pilot.

53 16 21 S Roger.

53 16 23 C ..... drinking my last ..... 25 gulps of water.

53 16 38 S You are broken. How many gulps of water, please?

53 16 54 C About 25.

53 16 58 S Roger. 25.

53 17 03 S How about sleep?

53 17 11 C Roger. ....

53 17 12 S Roger. Would you repeat your eating? Did you say finished A-1 and the first part of A-2?

[REDACTED]

[REDACTED]

53 17 34 S Gemini 4, Surgeon, CSQ Surgeon. Would you repeat your eating?

53 21 21 P I'd like to comment a little on the sextant. Its use in a cramped spacecraft is very difficult, particularly with the helmet on. I finally decided it was going to be useless with your helmet on to try to take the angles that the stars, that were being called for, required. So I took my helmet off. This gave me a little more flexibility in using it, but still I was limited to angles of about 20 to 23° without maneuvering the spacecraft. What would happen if the star would be cut out by the upper part of the window. Now, by more frequent and liberal maneuvering of the spacecraft you could maneuver it so that you have the long axis of the window in your tracking plane. We were somewhat limited by fuel and we didn't choose to maneuver in this manner. We used Pulse Mode, too, without a lot of maneuvers. The stars that were selected for that run were ones that had rather high angles to the horizon and, therefore, were very difficult to get. We finally decided to go ahead and get the stars a little closer to the horizon. I ran a couple on Canopus and a couple of others, as you'll notice. The blue filter seemed to block out the horizon totally; I didn't have any horizon when I used that. Our horizon image probably is not as good when there is moonlight. The green filter, though, gave me what I would consider a little clearer horizon than I had with no filter at all. I felt there was not a difficulty in making these measurements with either the green or clear filter. Still, the horizon is not very well defined and you have to kind of standardize yourself and measure on the same part of the horizon that you did before to get some type of a standard measurement. To me it was easier to measure with no filter to the top of the airglow. With the green filter I liked to measure the bottom of the airglow.

53 31 33 CC Gemini 4, Houston CAP COM.

53 31 40 CC Gemini 4, Houston CAP COM.

53 31 57 CC Gemini 4, Houston CAP COM.

53 32 00 C Go ahead, Houston. Gemini 4.

[REDACTED]



[REDACTED]

53 32 03 CC Roger, Jim We would like to get a readout on your OAMS source pressure, temperature, and your quantity gage.

53 32 24 C The OAMS source temperature is 60° and the pressure is a little below 2000.

53 32 33 CC Roger. What about the quantity?

53 32 39 C Quantity is reading out 60 1/2 percent.

53 32 45 CC Roger. When are one of you going to sleep?

53 32 50 C .....

53 32 53 CC Say again.

53 32 55 C It will be about 4 .....

53 32 58 CC You're cutting out.

53 33 12 CC Gemini 4, hold your switch down a little bit longer. You're cutting out.

53 33 20 C Roger.

53 33 28 CC We are only getting your first word, Jim.

53 33 32 C Okay?

53 33 38 CC I can't say that's okay.

53 33 42 C Okay?

53 33 45 CC Okay. That came through good.

53 33 55 CC Have you really decided who's going to go to sleep first?

53 33 58 C Yes, Ed is.

53 34 00 CC Ed is. Okay. And about when will he go to sleep?

53 34 05 C About another 30 minutes.

53 34 07 CC Okay. That's fine.

53 35 38 CC Hey, Jim, did you see that tropical storm off California?

53 35 43 C Yes, I did.

53 35 46 CC It's a full-blown tropical storm they tell me now.

53 35 49 C Well, there were a lot of clouds .....

53 35 53 CC Did you log IFR?

53 35 56 C .....

53 35 58 CC You're cutting out again.

[REDACTED]

[REDACTED]

53 36 00 C Okay. Must be that microphone.

53 36 03 C I say, clouds run a third of the way between Hawaii and California.

53 36 14 CC And you say clouds from about a third of the way from Hawaii to California and what was the last?

53 36 19 C And they stop abruptly at the coastline.

53 36 23 CC Roger. That's stopped abruptly.

53 36 42 CC Hey, Jim, would you press on your External Temperature again, please.

53 37 03 C Does that help any?

53 37 05 CC Yes, that looks better.

53 37 08 CC You're still alive.

53 37 11 C ..... wise guy.

53 37 48 CC Hey, Jim.

53 37 51 C Yes.

53 37 53 CC Christ just told Joke A.

53 37 56 C This is a real dilly, isn't it?

53 37 59 C I thought it was going to be my turn to tell Joke A.

53 38 19 CC We will go ahead with B when you can stand it.

CSQ

54 44 35 CC ..... computer on and also give us your Quantity Read Switch OFF.

54 45 06 CC Gemini 4, CSQ. Would you check your main batteries and give us a GO or NO-GO on your mains? For a ..... or the 48th.

54 45 16 C Roger.

54 45 52 CC Gemini 4, be advised that Pilot can scrub his Bio-med data pass over Hawaii, the next Rev.

54 46 02 C Gemini 4. Roger.

54 46 12 CC Roger. Gemini, what was your status for CO- NO-GO, 48?

54 46 19 C ..... 48.

54 46 20 CC Roger.

[REDACTED]

[REDACTED]

54 46 21 C Just a second. I'll give you the battery status.

54 46 24 CC Roger.

54 46 36 CC Be advised, you can turn your computer and Quantity Read Switch OFF.

54 46 59 CC I have just updated your computer with a new 36-4 load. I have your back-up quantities. Would you prepare to copy?

54 47 10 C Roger, stand by just a moment.

54 47 34 C Gemini 4, with the battery data.

54 47 36 CC Go ahead.

54 47 37 C Roger. The adapter batteries are all fine, staying at 24, the main battery are - just a second, the adapter batteries - the adapter batteries are 2 to 2 1/2 at 24. The main batteries at 9 and 22 1/2.

54 47 57 CC Roger.

54 48 03 CC Roger. Are you prepared to copy your 36-4 backup guidance quantities?

54 48 10 C Stand by just a moment.

54 48 12 CC Roger, we're GO here. I'm going to change your TR to a 48-1.

54 48 20 C Roger.

54 48 26 C Have a go with your guidance quantities?

54 48 29 CC Roger. Area 36-4: 4 40 and 120; 1+06. 2+31. 23 Hours, 38:08. 2+48. 8+44. 36-4 without maneuver, GMTRC 23 31 59. 7+30. 14+42.

54 49 24 C Roger, have received 36-4 with and without OAMS.

54 49 30 CC Roger, the GMTRC for your 48-1 is 3 days, 17 hours, 20 minutes, 18 seconds.

54 49 46 C Roger.

54 49 51 C Could you give me a G.m.t. time hack, please?

54 49 53 CC Roger, on my mark it will be 22 hours 07 minutes - about a minute.

54 50 11 CC We still have indications that your AC power is ON.

54 50 16 C Roger, I think it is.

54 50 22 CC Be advised, also, that we have some D-9, Delta 9, Experiment data for you.

[REDACTED]

[REDACTED]

54 50 29 C Roger, stand by until I get my time hack.  
 54 50 32 CC We're going to have an LOS, I believe. I'll let Hawaii give you a G.m.t. time hack. I think we'll have LOS before you can copy.  
 54 50 47 C ..... you give me the hack.  
 54 50 49 CC Okay, about 10 seconds. 3,2,1.  
 54 50 05 CC MARK! 22 hours 07:00.  
 54 51 07 C I got the mark.  
 54 51 09 CC Okay, D-9. Are you prepared to copy?  
 54 51 30 CC Gemini 4, CSQ. We've had TCM LOS. I'll advise Hawaii to send you the Delta 9 Experiment Data.

HAWAII

54 54 55 CC Gemini 4, Hawaii CAP COM.  
 54 55 05 CC Gemini 4, Hawaii CAP COM, do you copy?  
 54 55 08 C Roger, Hawaii. Gemini 4. Loud and clear.  
 54 55 11 CC Roger, I have your D-9 information. Are you ready to copy?  
 54 55 19 C Roger, go ahead.  
 54 55 21 CC Run 2: Start 22 43 00. End 23 22 00. Use scheduled filter setting. Did you copy? Over.  
 54 55 43 C I copied the time, 22:43 and 23:22. What was the experiment?  
 54 55 48 CC This is D-9, run 2. Use scheduled filter settings. Did you copy? Over.  
 54 55 57 C Can't tell, but the Pilot is going to be asleep.  
 54 56 05 CC Roger, understand. Pilot will be asleep during this period.  
 54 56 09 C That's affirmative.  
 54 56 12 CC Roger. Hawaii standing by.

[REDACTED]

GUAYMAS

55 06 00 CC Gemini 4, Guaymas CAP COM.  
 55 06 12 CC Gemini 4, Guaymas CAP COM.  
 55 06 28 CC Gemini 4, Guaymas CAP COM.  
 55 06 37 C Guaymas, this is Gemini 4. Go ahead.  
 55 06 39 CC Roger, we got your ground-to-ground here. I got a map update for you. Ready to copy?  
 55 07 11 C Guaymas, Gemini 4. Be advised that I've got my helmet off, and I can't read you.  
 55 07 17 CC Roger. Roger.  
 55 07 20 C Do you have anything important to tell me?  
 55 07 23 CC I just wanted to give you a map update. .... Negative.  
 55 07 28 C Okay, stand by one and let me get a pencil. I can still hear through the headset. Just a minute.  
 55 07 46 C Okay, go ahead with your map update.  
 55 07 48 CC Roger, Rev 36, ascending node, the time 23+18, longitude 82° East.  
 55 08 07 C Okay, understand that was Rev 36.  
 55 08 11 CC That's affirmative.  
 55 08 14 C I'm good for 23:18 -- ascending node was 82 East?  
 55 08 22 CC 82 East.  
 55 08 24 C Roger, 82 East. Thank you.  
 55 08 26 CC Roger, we'll see you tomorrow.  
 55 08 28 C Okee-doke. Next time I'll have my hat on, and I'll hear what you're saying.  
 55 08 33 CC Roger.

HAWAII

58 04 14 CC You look good here on the ground, Gemini 4.  
 58 04 17 C Roger. Everything looks good up here, too.  
 58 04 19 CC Roger. Roger.

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58 04 44 CC Gemini 4, Hawaii CAP COM.

58 04 49 C Go ahead.

58 04 50 CC Roger. I have a 48-1 load for you, if you will turn on your computer.

58 04 58 C Okay. Stand by.

58 05 45 C My computer's on.

58 05 48 CC Roger, computer. With your load. Here it comes.

58 05 52 CC You have a valid 48-1 load.

58 05 58 C Okay I didn't get a DCS light.

58 06 01 CC Did I copy, you did?

58 06 05 C Negative. I did not.

58 06 07 CC You did not get a DCS light.

58 07 20 CC Gemini 4, Hawaii CAP COM.

58 07 25 CC Gemini 4, Hawaii CAP COM.

58 07 29 C Hawaii, Gemini 4. I can't read you.

58 07 32 CC Roger. If you can read, turn your computer off.

58 07 35 C Roger. I never could get that DCS light on that. I'll put the computer off.

58 07 37 CC Roger.

58 08 11 CC Gemini 4, this is Hawaii transmitting in the blind. We have information on your Pegasus time: 01 39 00. Yaw - 0°, pitch up - 60°, slightly to your right, heads up 300 nautical miles. I repeat again. In the blind, Hawaii transmitting, 01 39 00, Pegasus, Yaw - 0°, pitch up - 60°, slightly to your right, heads up, 300 nautical miles.

59 12 30 P MSC-2 and -3 were placed OFF at 02:28.

59 12 38 C What time?

59 12 40 P Okay, 02:25. Correct that 28 to 02:25.

59 14 51 P Those are the Himalayas, I'm quite sure, having seen Gordo's picture that he took. It was such a good one. I believe we took - Oh, oh, we took a sunset picture of the .....

59 23 12 P Right.

~~CONFIDENTIAL~~

[REDACTED]

59 23 14 P Jim just saw another satellite. He hasn't described it to us yet as he did the other one. This was at 14:37. That wasn't right. Correct that to 02:37 or 38.

59 23 50 P This one was a lot farther away than the one intended for us. He tried to get a picture of it.

59 23 55 P Did you get a picture?

59 24 00 P Yes, he took a picture of it with the 4-power telescopic lens.

59 24 16 P It came by on my side. The sun was smack dab in the window. I couldn't see anything.

59 24 21 P Well, I saw a white ball. Jim says this is about what it looked like. Kind of a white ball. I saw part of the white ball.

59 25 21 CC Gemini 4, CSQ CAP COM. Would you turn your computer ON for a 48-1 preretro update--

59 25 39 P Gemini 4, with the computer on.

59 25 42 CC Say again, Gemini 4. You're broken.

59 25 56 CC Be advised that you have a critical tape dump and a Medical Data Pass Type 1 for the Command Pilot over the RKV this pass. 03 hours 14 minutes.

59 26 10 P Type 1 for the Command Pilot over RKV.

59 26 17 P This is Gemini 4.

59 26 20 CC Roger. Go ahead, Gemini 4.

59 26 21 P Gemini 4. The Command Pilot is awake now. We will be standing by for the medical task to run a make-up on the medical stuff.

59 26 31 CC Gemini 4, you're broken. Say again last.

59 26 35 P Roger. The Pilot is awake now. We'll be standing by for a medical type pass ..... the flight plan.

59 26 45 CC Roger. I'll pass the word back to Houston.

59 26 49 CC Be advised at 58 hours 10 minutes, about an hour ago, you surpassed the total elapsed time of all the U.S. Manned Space Flights. Our congratulations!

59 27 02 P Roger. Understand, ..... have surpassed total elapsed time of Manned Space Flights of the United States.

59 27 10 CC Roger.

[REDACTED]

**[REDACTED]**

59 27 11 P .....  
 59 27 14 CC Roger.  
 59 27 17 C This is Gemini 4 again. I saw another satellite  
 up there.  
 59 27 21 CC Roger, go ahead.  
 59 27 22 C We saw another satellite about - it was 02:38 when  
 I saw the thing and it was much farther away than  
 the other one that I saw. I tried taking a picture  
 of it. I think I might have it on our 200-mm lens.  
 59 27 39 CC Roger, good show.  
 59 27 41 C I'm afraid this one was way too far away to show  
 any detail.  
 59 27 45 CC Roger.  
 59 27 50 CC Roger. I'm going to send you a Gemini load. Would  
 you watch your DCS light for reception this time?  
 59 28 00 CC Did you get a light?  
 59 28 06 C Roger. We got a light. It was turned down last  
 time; guess that's why I didn't see it.  
 59 28 11 CC Be advised you have a new 48-1 TR time and load.  
 I have your backup guidance quantities. Are you  
 prepared to copy?  
 59 28 32 CC After the 48-1 copy, also have a block of CIA and  
 PLA data.  
 59 28 46 P Roger. Go ahead.  
 59 28 47 CC Okay. 48-1: 142. 3+08. 17 20 00. 2+35. 8+49.  
 You got that one?  
 59 29 08 P Affirmative. 142. 3+00. 17 20 00. 2+35. 8+49.  
 59 29 15 CC Roger.  
 59 29 17 CC Okay. For your PLA and CIA update: Area 40-3:  
 this is a split burn. 56 forward, 120 aft. 1+34.  
 2+30. 05 38 10. 2+56. 8+52. Area 41-DELTA: 83.  
 1+41. 06 30 09. 8+58. 15+01. Area 42-2: 90.  
 1+52. 08 06 26. 6+52. 11+59. How's it going?  
 59 30 33 P I'm going pretty good. Your 41-D, you were garbled.  
 I couldn't read that but I got the rest of it, though.  
 59 30 38 CC Let me go back and pick up 41-DELTA:  $\Delta V$  83. 1+41.  
 06 30 09. 8+58. 15+01. Did you get it that time?

**[REDACTED]**



[REDACTED]

59 31 04 P No, I blocked out again on that one. Cut out.

59 31 09 CC Roger. I'll say again. 41-DELTA: 83. 30:09.  
8+58. 15+01.

59 31 28 CC Go ahead.

59 31 37 CC You can turn your computer OFF.

P .....

59 31 47 CC Gemini 4, CSQ. You can turn your computer OFF.

P .....

59 31 51 CC Roger.

59 30 55 CC Did you get the 41-DELTA?

ROSE KNOT VICTOR

59 58 34 CC Gemini 4, RKV CAP COM.

59 58 52 CC Gemini 4, RKV CAP COM.

59 58 54 P RKV, Gemini 4.

59 58 58 CC Roger. We have a valid temperature on the Pilot.  
Go ahead with the blood pressure.

59 59 02 C RKV, Gemini 4.

59 59 05 CC Gemini 4, RKV. Did you copy?

59 59 40 CC Gemini 4, RKV. We have not received your blood  
pressure as yet.

59 59 45 C RKV, Gemini 4.

59 59 51 CC Okay. We show the blood pressure starting to come  
up.

59 59 59 S Gemini 4, RKV Surgeon. The cuff is full-scale.

60 00 26 S All right, Gemini 4. We have a good blood pressure.  
Give me a mark on your exercise.

60 00 44 P RKV, Gemini 4.

60 00 47 S Gemini 4, RKV.

60 00 49 P Roger. Did you get the blood pressure?

60 00 52 S Affirmative. We have the blood pressure. Give us  
a mark when you're ready for your exercise.

60 01 05 P RKV, Gemini 4.

[REDACTED]

[REDACTED]

60 01 09 S Gemini 4, RKV.  
60 01 10 P Are you getting the oral temperature and the blood pressure?  
60 01 19 S We have the oral temp and we have the blood pressure.  
60 01 23 S Gemini 4.  
60 01 25 S Gemini 4, we have the oral temp and the blood pressure.  
60 01 34 S Do you copy?  
60 01 45 P RKV, Gemini 4.  
60 01 49 S Gemini 4, RKV. Do you read?  
60 01 52 P RKV, Gemini 4 is reading you 5 square.  
60 01 56 S Roger. We have the temp and the blood pressure. Give us a mark when you start your exercise.  
60 02 11 P MARK!  
60 03 12 S Gemini 4, RKV Surgeon. We're waiting your blood pressure.  
60 03 16 P Roger, coming at you.  
60 03 44 S Gemini 4, RKV Surgeon. Can you pump that one more time?  
60 03 49 P Roger.  
60 03 55 S Cuff is full-scale.  
60 04 12 S Gemini 4, we have a good blood pressure. Can you give me your food, water, and sleep report?  
60 04 26 S Gemini 4, RKV Surgeon. Do you read?  
60 04 29 P Roger. Gemini 4 reads you.  
60 04 33 S Standing by for your food, water, and sleep report  
60 04 38 C Roger. This is the Command Pilot .....

60 13 23 P Both Kleenex container zippers failed. They split open from the bottom below the zipper so that the zipper is no longer effective in the container.

60 20 38 P Started the D-8 run at 03:35.  
60 21 09 P Position two.  
60 21 10 C Yes.  
60 22 15 P Position 3; I believe I was in position 2 for 2 minutes.

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60 24 17 P Position 4.  
P Position 5.  
60 26 14 P Position 6, complete for test, D-8, for the 4th run  
and completed at 03:41.  
60 26 52 CC Gemini 4, Gemini 4, Houston CAP COM. Over.  
60 27 07 CC Gemini 4, Gemini 4, Houston CAP COM. Over.  
60 27 14 P ..... 4.  
50 27 20 CC Gemini 4, this is Houston. We are not reading.  
Houston in the blind. Pilot be ready for Medical  
Data Type 1 at CSQ. Acquisition time: 04:16.  
I say again, Medical Data Type 1 for Pilot at CSQ.  
Acquisition: 04:16. Houston, over.  
60 27 47 P Roger, Houston. Gemini 4. Got your message.  
60 27 53 CC Roger. Read you loud and clear that time.  
60 27 54 P Roger. Reading you five square, also.  
60 27 55 CC Good. Did you read me ..... at Ascension?  
60 28 01 P Negative, I heard so very faint, but evidently you  
couldn't read me, and I couldn't get anything that  
you said. Be advised now that the Command Pilot is  
going down to sleep. He should be asleep for the  
next 4 to 6 hours.  
60 28 14 CC Understand. Command Pilot's asleep. Should be  
asleep for the next 4 to 6 hours. Very good.  
60 28 22 CC Be ready to give the food and water report for both  
of you over the CSQ if you have time.  
60 28 32 P Roger, will do.

COASTAL SENTRY QUEBEC

60 59 24 CC Gemini 4, CSQ. Turn your Quantity Read Switch ON  
for about 15 seconds.  
60 59 40 CC After we finish with the Aero-Med Pass, we want to  
pass up some more of the CLA and PLA data. We have  
a good oral temp on the Pilot. Stand by for Surgeon.  
60 59 52 S Gemini Pilot, this is Surgeon.  
61 00 00 S Gemini, this is Surgeon.

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61 00 16 S Gemini, this is Surgeon. CSQ Surgeon calling Gemini.  
61 00 19 P Roger, CSQ Surgeon. Gemini 4.  
61 00 22 S Roger, Pilot. We have a good temperature for you.  
We're ready for your blood pressure.  
61 00 36 S Cuff is full-scale.  
61 01 24 S Gemini, this is Surgeon. We got a valid blood pres-  
sure. Start the exercise on your mark.  
61 01 35 P MARK!  
61 01 40 S Gemini, this is Surgeon. May I speak to the Command  
Pilot, please?  
61 02 02 P Be advised the Command Pilot is asleep.  
61 02 06 S Command Pilot is asleep. Roger.  
61 02 11 S Roger, we've got a full-scale on your blood pressure.  
61 03 03 S Gemini, Surgeon. Your blood pressure's valid. Can  
I have a readout on your food and water at this time?  
61 03 15 P Roger, coming with a report on the Pilot. The last  
meal the Pilot had was the second day, the fourth  
meal. I've had 9 swallows of water, and I'm feel-  
ing great. The Command Pilot, 3 the third day, and  
the no. 1 meal, he had the defecation bag and has  
had about 20 swallows of water. The Pilot is  
getting ready to eat Meal 3-1 at the present time.  
61 03 45 S Roger. Stand by.  
61 04 04 CC Gemini, CSQ CAP COM. Turn your Quantity Read Switch  
OFF.  
61 04 11 CC Are you prepared to copy CLA?  
61 04 24 CC We won't have time to go through the entire list.  
I want to give you a one CLA. The next one coming  
up.  
61 04 31 P Roger.  
CC Okay. CLA 40-DELTA: 84. 1+47. 04 57 16. 10+07.  
Did you copy, Gemini?  
61 05 08 CC Gemini, CSQ. Did you copy 40-DELTA?

[REDACTED]

~~CONFIDENTIAL~~CANTON

61 09 41 P Canton. Gemini 4.

61 09 44 CC Gemini 4, this is Canton.

61 09 47 CC Gemini 4, this is Houston CAP COM. Over.

61 09 55 CC Gemini 4, this is Houston CAP COM. Over.

61 10 01 P Go ahead, Houston CAP COM. Gemini 4.

61 10 03 CC Roger. Stand by to copy some more updates.

61 10 06 P Go ahead, Houston. Gemini 4.

61 10 11 CC Gemini 4, are you ready to copy CLA and PLA update?  
Over.

61 10 24 P Hello, Houston CAP COM. Gemini 4.

61 10 29 CC Gemini 4, this is Houston CAP COM. Are you ready  
to copy CLA update?

61 10 42 P Houston CAP COM. Gemini 4. Ready to go on the  
update.

61 10 48 CC Roger. I'll read again 41 Delta, 41 Delta: 83.  
1+41. 06 30 09. 8+58. 15+01. Advise if you copy.

61 11 18 P Roger. 41 copied.

61 11 21 CC Roger ..... 43-2: 101. 2+06. 09 40 59. 5+14.  
10+36. 44-2: 114. 2+22. 11 15 26. 3+51. 9+13.  
Did you copy those last two?

61 12 19 P Say again 44 dash 2. Say again Delta V. Then retro  
command.

61 12 30 CC I say again 44-2: 114. 2+22. 11 15 26. 3+51.  
9+13. Over.

61 12 54 P Roger. I got that one. Say again 40 Delta V.

61 13 10 CC 40 Delta: 84. 1+47. 04 57 16. 10+07. Over.

61 13 29 P All right on that one. Do you read 41 Delta?  
Over, please.

61 13 35 CC Roger, 41 Delta: (Over.) 83. 1+41. 06 30 09.  
8+58. 15+01. Over.

61 13 57 P ..... Delta V..... 83. 141.

61 14 07 CC 83. That's 83 for 41 Delta.

61 14 10 P Houston CAP COM. Gemini 4. Be advised that you  
are badly broken up at this time.

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61 14 18 CC Roger. So are you.  
 61 14 26 CC Did you copy 40 Delta? Over.  
 61 14 46 CC Gemini 4, this is Houston. We will get the rest to you at RKV. Over.

ROSE KNOT VICTOR

61 32 57 CC Gemini 4, Gemini 4, this is RKV CAP COM.  
 61 33 17 CC Gemini 4, Gemini 4, RKV CAP COM.  
 61 33 21 P .Go ahead, RKV. Gemini 4.  
 61 33 23 CC Roger, how do you read me on this pass?  
 61 33 25 P Read you five square.  
 61 33 28 CC Roger. Be advised that you are, will - request that you make an HF check at Ascension during this pass. The time of that HF check will be 05 hours 15 minutes. You will turn your transmitter on at our LOS to make a short check and make the final check at Ascension.  
 61 33 52 P Roger, HF check at 05:15. A final check at Ascension.  
 61 34 06 CC That's affirmative.  
 61 34 11 CC Did you get 40 Delta PLA update?  
 61 34 16 P Affirmative. 40 Delta PLA update. 84. 1+47. 04 57 16. 10+07.  
 61 34 23 CC Roger, I have a 41 for you.  
 61 34 27 CC Roger, it's a split Delta V 46 ..... 120 120. 1+8. 2+30. 07 20 21. 7+50.  
 61 35 04 P Roger, you faded out on the GMTRC ..... Say again, please.  
 61 35 08 CC The GMTRC 07 20 21.  
 61 35 14 P Say again the first.  
 61 35 17 CC Roger. 07 hours 20 minutes 21 seconds.  
 61 35 24 P Roger. Got you. 07 20 21. 7+50.  
 61 35 29 CC Roger. 42 Bravo Split ΔV. 40. 120. 1+07. 2+30. 08 50 48. 8+36. 43 Bravo Split ΔV. 27. 120. 0+45. 2+30. 10 22 59. 10+01.  
 61 36 17 P Roger, got 43 Bravo, but did not get the info before, did not get any of the information before it.

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61 36 25 CC Roger, I say again, 42 Bravo Split ΔV. 40. 120. 1+07. 2+30. 08 50 48. 8+36.

61 36 58 P Got most of that. Say again GMTRC.

61 37 05 CC Roger. GMTRC 08 50 48. Do you copy?

61 37 16 P Roger. 08 50 48. That was 42 Bravo. Is that correct?

61 37 21 CC Roger. That's affirmative.

61 37 23 P And 43 Bravo, 42 Bravo, 44-2, 43-2. Did you give me a 46? You faded out on that one.

61 37 32 CC Negative, I did not give you a 46.

61 37 42 CC That is all of this group. We have a correction on that time for the HF voice check. It is at 05 hours 09 minutes. Do you copy?

61 37 58 P Roger. 05:09.

61 38 00 CC That's affirmative.

62 00 13 CC Gemini 4, this is Houston CAP COM. Over.

62 00 28 P Go ahead, Houston. Gemini 4.

62 00 31 CC Gemini 4, reading you loud and clear at Kano. I have a D-9 update for you.

62 00 39 P Roger, go ahead.

62 00 41 CC Roger. It's revolution 41. The start time is 06 01 44.

62 01 03 P Roger, I understand. Revolution 41. 06 01 44, D-9 and in what notch?

62 01 11 CC Say again your last.

62 01 13 P Roger, I got that Rev 41. 06 01 44 D-9. And what mode of D-9 do you want us to perform?

62 01 23 CC Roger. Stand by one.

62 01 52 CC Gemini 4, this is Houston. That's the Sextant D-9. Rev 41. Over.

62 02 10 P You're breaking up.

62 02 56 CC Gemini 4, this is Houston CAP COM. That's D-9, Run no. 2, Run no. 2. Over.

62 03 28 CC Gemini 4, this is Houston. I say again, Run no. 2, Run no. 2.

62 03 35 P Roger, understand. Run no. 2.

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62 03 38 CC Roger, that's all.  
 62 03 44 P Am I to understand that we are authorized to use fuel on that one?  
 62 03 47 CC That's affirmative. Use fuel.  
 62 03 50 P .....

ROSE KNOT VICTOR

63 06 33 CC Gemini 4, Gemini 4, this is RKV CAP COM.  
 63 06 44 CC Gemini 4, Gemini 4, RKV CAP COM.  
 63 06 49 C Go ahead, RKV. Gemini 4.  
 63 06 52 CC Roger, Gemini 4. I have an Apollo update plus several other updates for you. Are you prepared to copy?  
 63 07 05 C Roger, we will be in the middle of Experiment D-9 right now. Can you hold them or ..... late transmissions on the time schedule?  
 63 08 44 CC Gemini 4, RKV CAP COM. RKV is standing by. If you get through with your D-9 Experiment in time, give me a call. We have about 5 1/2 minutes left of this pass.  
 63 08 58 C Roger. I don't anticipate that I'll be done in time.  
 63 09 03 CC Roger, we're standing by.  
 63 09 05 C Roger, thank you.

KANO

63 32 41 CC Gemini 4, Gemini 4, Houston CAP COM. Over.  
 63 33 02 P Go ahead, Houston. This is Gemini 4.  
 63 33 04 CC Roger, Gemini 4. I have an orbital map update. Are you ready to copy?  
 63 33 10 P Stand by one, please.  
 63 33 24 P Go ahead.  
 63 23 26 CC Roger. On Rev 42, longitude 31° West, G.m.t. 06 40 35.

**[REDACTED]**



63 33 54 P Houston CAP COM, Gemini 4. Say again, please. You were blocked out.

63 34 00 CC Roger. Rev 42, longitude 31° West, G.m.t. 06 40 35.

63 34 19 P Roger, I got the update and be advised I've got an RCS heater light and I presently have my RCS heaters ON at this time.

63 34 32 CC GT-4, Houston CAP COM. Say again, please.

63 34 35 P I got a RCS heater light on the dark side of this pass, and I put the RCS heaters ON.

63 34 43 CC Very good, Edward.

63 34 51 CC Roger, Gemini 4. We got that. And also at elapsed time of about 64:30 in your Flight Plan, scratch "power up spacecraft for translation." Over.

63 35 06 P Roger, understand, "Power up for translation."

63 35 08 CC That's affirmative.

63 35 15 P Be advised that over ..... is in the A-ring and not in the B-ring.

63 35 23 CC Roger, we got that, the A-ring.

ROSE KNOT VICTOR

64 40 02 CC Gemini 4, RKV CAP COM.

64 40 07 P Go ahead, RKV. Gemini 4.

64 40 09 CC Roger. I have an Apollo Landmark update for you. This is for Run - Run 6, Sequence 15, Rev 42. The G.m.t. time will be for 8 hours, 31 minutes, yaw 15°, pitch 30. You can use your OAMS if necessary. Do you copy?

64 40 37 P Roger-dodger. Apollo Landmark Run 6: 08:31, yaw 15, pitch 30, and fuel no problem.

64 40 47 CC That's affirmative. Flight would also like to know what the position of your RCS heater switch is, and the status of the indicator lights.

64 41 01 P Roger. I've been having a cycling on and off of the requirements of the RCS heater. The first one was at 06:47, and I put the heater on and the light was extinguished at 06:54. That was ring A. Ring B came on at 06 - 07:05. It took 5 minutes to

[REDACTED]

extinguish it. Ring B came on at 07:20, and it also took 5 minutes to extinguish it. Ring B came on at 07:37 and it took 5 minutes, and Ring A came on at 07:50, and it took 5 minutes. They look like pretty good readings. The temperature on the - the temperatures are down around 67°.

64 41 47 CC Roger. Very good. And Flight also advised that they would like to have you give their reports like this to each site each time this is turned on to keep with the power usage curve.

64 42 04 P Roger. I thought you would. Be advised also, I set up a slow rotation so that when I get out on the daylight side I can get a .....

64 42 16 CC Roger. It sounds like a real good idea. You have a medical pass over the Canary Islands on the pilot. The Type 1 on this next rev, and that will be approximately G.m.t. of 08:17.

64 42 37 P Roger. Understand a Type 1 Medical Pass at 08:17.

64 42 41 CC Roger. That's affirmative.

64 43 04 CC Okay, ..... look good here on the ground on you, and that's about all we have for this pass. We'll stand by if you have anything else.

64 43 14 P Roger. Everything is good up here.

64 43 17 P The Command Pilot is still sleeping. He'll be getting up in about 30 to 40 minutes.

64 43 39 CC Gemini 4. Flight would like to get a confirmation that this is Sequence no. 15 for you on this Apollo Landmark.

64 43 53 P Roger, it was a Sequence 15.

64 43 57 CC That's affirmative.

CANARY

65 01 56 CC Gemini 4, Canary CAP COM.

65 02 00 P Go ahead, Canary.

65 02 02 CC Roger. Your systems look good. We're ready for your Aero-Med Pass 1. Meet my Surgeon on UHF.

65 02 10 CC Gemini 4, Canary Surgeon.

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65 02 12 P Go ahead, Canary. Gemini 4.  
 65 02 14 S Request that Pilot pump up blood pressure cuff.  
 65 02 27 S Cuff is full-scale.  
 65 03 12 S Blood pressure is received. Start exercise on your  
 mark.  
 65 03 16 P MARK!  
 65 03 46 S Cuff is full-scale.  
 65 04 38 S Blood pressure is received. Request your food,  
 water, and rest status.  
 65 04 47 P Roger. I had - I'm eating at the present time.  
 Meal 2 of the third day. I've had 6 swallows of  
 water. I had 4 good hours of sleep out of the last  
 5 when I had my sleep cycle.  
 65 05 03 S Very good. Four good hours out of your 5 hours  
 rest cycle.  
 65 05 08 P Affirmative.  
 65 05 09 S Very good. This is Canary Surgeon returning you to  
 Canary CAP COM.  
 65 05 16 CC Canary CAP COM. We have nothing more. We'll stand  
 by for you.  
 65 05 20 P Roger. I'm in the process now of an Apollo Landmark.

ROSE KNOT VICTOR

66 14 54 CC Gemini 4, Gemini 4, RKV CAP COM.  
 66 15 18 CC Gemini 4, Gemini 4, RKV CAP COM.  
 66 15 30 CC Gemini 4, Gemini 4, RKV CAP COM.  
 66 15 43 P RKV, Gemini 4. Go ahead.  
 66 15 46 CC Roger, the Surgeon has some questions for you.  
 66 15 53 S Gemini 4, Gemini 4, RKV Surgeon. Over.  
 66 16 04 S Gemini 4, Gemini 4, RKV Surgeon. Over.  
 66 16 08 P Go ahead RKV, Gemini 4.  
 66 16 12 S Roger, is this the Command Pilot?  
 66 16 15 P Negative, this is the Pilot.

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66 16 18 S Is the Command Pilot still sleeping?

66 16 19 P He's just getting up. Did you want a medical pass on him?

66 16 23 S Negative, no medical pass. I wanted to ask him, if he was awake, his opinion upon this sleep period, and how long he slept.

66 16 41 C I am sorry. This is the Command Pilot. I ..... There were 5 and 1/2 hours and I would guess that probably at least 4 of it was pretty good sleep.

66 16 57 S Roger. You are coming in loud and clear.

66 17 08 S Two other questions - did you use the waste collection system at all during the flight?

66 17 16 P Boy, did we ever! We each used the defecation system one time and the urine system about four or five times, I guess.

66 17 30 S Roger. A question on medication. Have you taken any medication?

66 17 35 P Negative. No medication, Surgeon.

66 17 44 S Roger. And the Pilot is now scheduled for a sleep period. When do you plan to go to sleep, Ed?

66 17 51 P RKV Surgeon, Gemini 4.

66 17 55 S Roger, Gemini 4, RKV Surgeon. One other question.

66 17 58 P Roger, go ahead.

66 18 01 S The Pilot is scheduled for a sleep period. When do you plan to sleep?

66 18 11 S Gemini 4, RKV Surgeon. The question is when does the Pilot plan to sleep? Over.

66 18 18 C Roger. We're discussing that, either right away or right after the MSC-10 Experiment which will be right about ..... I think it'll probably be an hour and a half.

66 18 30 S Roger.

66 18 32 S I have no other questions, CAP COM.

66 18 34 CC We're about to have LOS. That's it from here.

66 19 16 C I just have a comment to make about the - is the tape running over there? Is the light on?

66 19 25 P I've got this taping.

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66 19 26 C Okay, want to comment on our food. So far every orange juice bag, every bag that I have put water into that has had orange juice in it in any form, or pineapple, or straight orange juice, has had a leaky water valve. Now, I've had only one other drippy bag so far, and we're already about 60 something hours into the flight. But every single orange juice bag has had a leak in it. And Ed just came up with another leaky orange juice bag for himself. But this is Ed's first one.

TEXAS

66 24 31 CC Gemini 4, Gemini 4, Houston CAP COM. Over.

66 24 47 CC Gemini 4, Gemini 4, Houston CAP COM. Over.

66 24 52 C Roger, this is Gemini 4.

66 24 54 CC Roger, Jim. I've got some significant weather for your S-6 Experiment. Over.

66 25 14 CC Gemini 4, Gemini 4, Houston. I have some weather for your S-6 Experiment. Can you copy? Over.

66 24 26 C Roger Houston, Gemini 4. I understand you've got some weather for us for S-6. You're pretty broken up, I didn't get your message.

66 24 37 CC Roger, Gemini 4. Weather for S-6. Look for any clouds in lee of the Canaries and Madeirs Island for oblique photographs. Location approximately 200 miles south and 300 miles north of spacecraft position at time 09 51 00 for a total of 5 minutes, 05 minutes. It's highly desirable to get photographs of these clouds on successive passes over the same area.

66 26 31 C Roger. Understand you want us to look at some eddy clouds in the lee of the Canaries at 09:51. Is that correct?

66 25 40 CC That's affirm. You got it, Jim, and would you turn your Quantity Read Switch ON for about 10 seconds?

66 26 46 C Roger. Do we have some fuel to take these pictures?

66 26 49 CC That's affirm. Also Jim, for information, we tentatively plan on powering up the Platform at 67:40

~~CONFIDENTIAL~~

[REDACTED]

elapsed time. That's 67:40 elapsed time for approximately 2 hours. We'll have a revised Flight Plan for you shortly.

66 27 11 C Okay, we'll power up the platform at 67:40.

66 27 14 CC Yeah.

66 27 20 CC What it'll amount to, we'll follow the Flight Plan, but we'll have to revise it in terms of successive order, some of the items.

66 27 27 C Okay.

66 27 31 C Did you say the direction we're supposed to look for these eddy clouds?

66 27 35 CC Roger. You can turn your Quantity Read OFF now. Look for eddy clouds around the Canaries and Madeira Island. Location approximately 200 miles south and 300 miles north of spacecraft position.

66 28 03 CC That time is just about the time of Canary's acquisition.

66 28 07 C Roger. But I know what you are talking about. Roger.

66 28 11 CC Okay.

66 29 10 CC Gemini 4, Houston. Can you give us any idea of whether you've got some of your gear stored. We're concerned about CG. Over.

66 29 36 C It looks like we're going to end up with ECM on the floor, and we're going to have the cable in Ed's lap. And we're going to have the gun stowed in the center food box where it was. We're going to have the film in the center food box. We're going to have the camera equipment in the side food box.

66 30 06 CC Roger. We got it.

CANARY ISLANDS

66 35 30 CC Gemini 4, Canary CAP COM.

66 35 34 C Go ahead, Canary.

66 35 36 CC Roger. Your systems still look good. I have 10 retro updates for you. Let me know when you're ready to copy.

66 35 52 C Okay, we're ready.

[REDACTED]

66 39 54 CC Roger. 46-1: 101. 2+08. 12 37 10. 5+36. 10+33.  
 46-1: 11+. 2+25. 14 12 47. 4+25. 9+33. 47-1:  
 Fore and aft firing thrusters. 08 and 120. 0+14  
 and 2+30. 15 46 36. 3+17. 8+37. 48-1: Fore and  
 aft thrusters. 24 and 120. 0+40 and 230, correc-  
 tion 2+30. 17 20 19. 2+42. 8+43. 49-4: 111.  
 2+21. 20 06 48. 4+11. 9+46. 44 BRAVO: Fore and  
 aft firing thrusters 14 and 120. 0+24 and 2+30.  
 11 55 47. 11+10. .... 5: 120. 2+30. 13 29 13.  
 11+42. 46 BRAVO: 94. 1. 15 08 39. 11+30.  
 47 BRAVO: 85. 1+48. 16 42 35. 10+36. 48 BRAVO:  
 82. 1+45. 18 13 36. 10+05. And that's all.  
 Did you copy?

66 39 59 C Affirmative, I copied.

66 40 53 CC Gemini 4, Canary CAP COM.

66 40 56 P Go ahead, Canary.

66 40 57 CC Are your RCS heaters on?

66 41 01 P Negative, they are not.

66 41 02 CC Roger.

66 41 11 C Canary, Gemini 4.

66 41 14 CC Go ahead.

66 41 16 CC Gemini 4, Canary. Go ahead.

66 41 18 P All right. 08:23 to 08:33 and 08:14 to 08:20.

66 41 25 CC Say again the last.

66 41 26 P 08:14 to 08:20.

66 41 31 CC Roger. Copy on 08:23 to 08:33 and 08:14 to 08:20.

66 49 49 P I've taken a picture, a very good picture, of the  
 Cairo airport from the track over the station.

66 49 56 C I think that on this tracking task, using the world  
 map and the small map of the Cairo-Alexandria area,  
 we were able to pick up the airport at Cairo. How-  
 ever, I didn't see the airport until we were about  
 10° from it, I would guess, or 15°. Is that when  
 you saw it?

66 50 25 P Yeah.

66 50 28 C Okay, so that makes -

P That next time.

C Okay, that happened last time -



P In Texas.

67 00 30 C Yeah. Now that we know where to look, I think it will be a lot easier the next time around. The first time we looked for Cairo - for Cairo and Alexandria, we found that it took quite a while. I never did really see the airfield. I just saw the area. I guessed if I pointed the camera right, I'd have a picture of Cairo. But this time I actually picked up the airfield. Same thing with Alexandria. I think if you are going to take a picture of something like that, it might be worthwhile to pass over it one time, take a good look at it and take the pictures next time around.

67 06 18 P The rubber - the rubber outside the prophylactic on the exerciser broke.

CARNARVON

67 10 24 CC T/M solid at Carnarvon.

67 10 27 CC Gemini 4, Carnarvon CAP COM.

67 11 01 CC Gemini 4, Carnarvon CAP COM.

67 11 18 C Hello Carnarvon, Gemini 4.

67 11 21 CC Roger. You're looking good here on the ground. How are you up there?

67 11 22 C Everything is fine.

67 11 25 CC Okay, I've got a little info for you. Got a pencil and paper?

67 11 27 C Stand by just a second.

67 11 43 C Okay. Go ahead.

67 11 44 CC They would like for you to power up and aline your platform at 10 50 00. They would also like for you to turn on Experiment MSC-1 at that time.

67 12 05 C Okay, MSC-1 ON at 10:50 and I'm to power up and aline the platform at that time.

67 12 11 CC Roger. And you're to go ahead with your MSC-10. That's MSC-10 if it doesn't interfere with platform alinement.

67 12 18 C Okay, we're supposed to do MSC-10 at that time.





[REDACTED]

67 12 3 C Carnarvon, I'm not reading you. Was I supposed to do MSC no. 1 and MSC no. 10, or just MSC-10?

67 12 45 CC MSC-1 will go ON at that time, and you're to do MSC-10 if it doesn't interfere.

67 12 51 C Roger, okay. We'll do that.

67 11 53 CC Okay. I don't have a new update time. Use the original times on the Flight Plan for MSC-10.

67 12 58 C Say again.

67 12 59 CC Use your Flight Plan times for MSC-10. No new update.

67 13 04 C Roger.

67 13 05 CC Okay.

67 13 06 C Okay.

67 13 09 CC Is your buddy asleep?

67 13 11 C Yes, he's starting to doze off. I am going to have to wake him up before we can do MSC-10 together.

67 13 15 CC Okay. Stand by. Let me make sure they want to do that.

67 13 36 CC Okay, they want you to wake him up to help you with MSC-1 when you need to.

67 13 39 C Roger. I will.

67 13 41 CC Roger.

67 15 07 CC They will give you a Flight Plan update over the States.

67 15 16 C Roger. Understand we will get a Flight Plan update over the States. It looks like we're going to be pretty busy up there at that time. We'll be aligning the platform and doing MSC-10 at the same time.

67 15 24 CC Okay, I'll tell them not to bother you too much.

67 15 54 CC Okay, we've got to turn your platform ON.

67 15 58 C Say again.

67 16 00 CC You turned your platform ON, didn't you?

67 16 04 C I put my ACME ..... I'm just going to straighten the spacecraft up and get it turned right-side-up here.

67 16 07 CC Okay, very good.

[REDACTED]

~~CONFIDENTIAL~~

67 16 15 C We just started up the platform, it will take it about 30 minutes to come up before we can start alining it.

67 16 20 CC Roger. Understand.

67 16 22 C Okay.

67 16 24 C We're going to start the power at 10:50.

67 16 25 CC Very good.

67 27 13 C Gemini 4, again. I see the same sort of curve of lights, like the northern lights except they are below us, and I saw them another time, they were great big long lines. Looks like they run about parallel to the direction of our flight path and they extend from just below the airglow in the earth's horizon, up a little bit past the top of the airglow. The same thing I saw the other night except that it's not quite as bright as it was then.

67 27 44 P It reinforced the air glow.

67 27 47 C That's right. It looks like it reinforced the air glow.

67 27 50 P Reinforced the air glow more down to the bottom.

67 34 06 C Got IGS power on the line and platform to CAGE SEF at Houston.

67 35 35 P The ..... thruster went on at 10:52. 10:51.

67 35 42 P MARK!

67 40 52 P I just saw a falling star trail down not too far in front of us and it burned out considerably below us. The whole tail - was quite long, which was actually below our level. It burned up considerably below us.

67 41 10 C Yes.

67 48 35 C We are starting the MSC Experiment at 11:04.

67 48 49 P If we had an event timer track Experiment at 11:04.

67 48 54 C Don't think we can.

67 48 56 P Get it at Carnarvon. We can't get out and fire them normally ..... Glad we got it at the right time anyway.

67 49 03 C Yeah.

~~CONFIDENTIAL~~

67 49 19 C Okay. Now it looks like - Okay, the weather on the horizon - clouds, clouds on the horizon on the left hand side of the picture, I can see the clouds right up to about the middle, and at the middle it looks like they break off, and then there's just some scattered high stuff - it looks like this stuff on the left is pretty solid.

67 49 54 P Been going on 2 minutes.

67 49 59 C I've got one .....

67 50 02 P .....

67 50 08 C Are 2 minutes up? What time do you have?

67 50 11 P Right now I have 12:30.

67 50 14 C 12:30?

67 50 16 P Yes.

67 50 21 C 38, 39, 40.

67 50 32 C Look at that star rising up there - see it? Or is that another one of our satellites?

67 50 37 P Where?

67 50 39 C See it right in front of us, that bright star .....

P No.

67 51 01 P That looks almost like a normal sunrise, doesn't it?

67 51 03 C That's what it is.

67 51 06 P Well, you know, that's not what you expected it to be. I - I don't have the lens on right.

67 51 23 P It's coming up on 4 minutes now.

67 51 25 C I've got 3:40. Lens is on right.

67 51 41 P Well, it sort of slipped down.

67 51 44 C Ha, ha, ha, ha, ha!

67 51 51 P That would have been something, wouldn't it?

67 51 56 C Yes.

67 51 58 P Let's do this one more time.

67 52 25 P I'll go ahead and get this off - What the heck?

C Wish we had some lights in here.

67 52 33 P Well, that's what they want, don't they? Carry it out like he said. I remember he said .....

~~CONFIDENTIAL~~

67 52 37 C Coming up on the time.

67 52 44 P Yes.

67 52 47 C MARK!

67 53 03 P Got that on the onboard voice tape?

67 53 06 C Yes.

67 53 11 C 753 at 09 - 11:09 - Sun right on the horizon. We haven't had much success with the photo-event indicator on the Hasselblad. We have it. Puts the shutters in the - what do they call that thing? The shutter doesn't fall properly .....

67 56 03 P The shutter doesn't go down and the doors, or whatever they call them, don't open again. That's the third set, about. We're taking them at exactly 5 minute intervals from the first one, and they're all coming out.

TEXAS

67 56 55 CC Gemini 4, Gemini 4. This is Houston CAP COM. Over.

67 57 14 CC Gemini 4, Gemini 4. Houston CAP COM. Over.

67 57 53 C Houston CAP COM, Gemini 4. Read you loud and clear.

67 57 57 CC Roger, read you loud and clear. I have a Flight Plan update and if you're too busy to copy, we'll just be standing by.

67 58 05 C Okay, just another minute or two here.

67 58 30 C 11:04, 11:09, 11:14.

67 58 32 P 11:04, 11:09, 11:14.

67 59 12 C Houston, Gemini 4 here. Go ahead with what you have.

67 59 15 CC Roger, Jim. Would you prefer these in Greenwich Mean Time or in Elapsed Time? Over.

67 59 22 C Just give me the G.m.t.'s.

67 59 24 CC Roger. Okay, G.m.t. 11 54 00 Horizon Scanner Sunset Check.

67 59 45 C Stand by just a minute.

67 59 46 CC Roger, standing by.

~~CONFIDENTIAL~~

67 59 51 C Platform Attitude Malfunction light came on at  
 11:15 - 11:15.

67 59 54 P The attitude of the sun was about 40° above the  
 nose. Four series were taken and -

68 00 08 C Okay, go ahead with the rest of your G.m.t.'s.

68 00 11 CC Roger. Time 12 15 00 Horizon Scanner Moonset Check.

68 00 27 C Okay. 12:15 Horizon Scanner Moonset Check

68 00 31 CC Roger. You got the previous one, 14 54 00 Horizon  
 Scanner Sunset Check?

68 00 40 C It was 11:54, wasn't it?

68 00 42 CC Roger. The first one was 11:54, and the second one  
 was 12:15.

68 00 48 C Roger. I've got that.

68 00 50 CC Okay, the next one is 12 22 00 Apollo Yaw Orienta-  
 tion Night Check.

68 01 06 C Okay, 12:22 Apollo Yaw Orientation Night Check.

68 01 10 CC Roger, 12 58 00 Horizon Scanner Thruster Check.

68 01 25 C Okay, 12:58 Horizon Scanner Thruster Check.

68 01 29 CC Roger. 12 59 00 Horizon Scanner Track Check.

68 01 42 C Roger. Horizon Scanner Track Check at 12:59.

68 01 47 CC Roger, and at 13 14 00 one Attitude Thruster Check.

68 02 05 C Say again 13:14.

68 02 07 CC Roger, that's One Attitude Thruster Check.

68 02 39 CC Did you get that last one, Jim?

68 02 51 CC Gemini 4, this is Houston.

68 03 16 CC Gemini 4, Gemini 4, Houston CAP COM. Over.

68 03 18 C Go ahead Houston, Gemini 4.

68 03 22 CC Roger, did you get that One Attitude Thruster Check?

68 03 27 C Houston, Gemini 4. I'm not getting that 13:14  
 message.

68 03 35 CC Roger, we'll get the rest to you at Canaries.

68 03 39 C Roger.

68 03 40 P At this time the event indicator worked all right.  
 Looks like I got it adjusted so I can take the pic-  
 tures with it, so the series from now on will be  
 marked on the event.

230

[REDACTED]

68 04 01 CC Gemini 4, Houston. Could you give us the approximate time you commenced platform alinement?

68 08 35 P The timer, I think, hangs up to magazine. Somehow, I don't know - for the 6 series we're going back and try the event indicator.

CANARY ISLANDS

68 09 43 CC Gemini 4, Canary CAP COM

68 10 01 CC Gemini 4, Canary CAP COM

68 10 04 C Go ahead, Canary. Gemini 4.

68 10 07 CC Roger, I have the rest of your Flight Plan changes.

68 10 10 C Okay, go ahead.

68 10 12 CC Roger. At G.m.t. 13 14 00 One Attitude Thruster Check.

68 10 26 C Okay.

68 10 28 CC At G.m.t. 13 20 00 power down Platform and deactivate MSC-1.

68 10 46 C Roger. 12:20 power down platform and deactivate MSC-1.

68 10 50 CC Roger. We would like to know the time you commenced your platform alinement.

68 10 56 C Roger. I powered the platform up at 11:50 as scheduled, and I haven't got it alined yet. I got the Attitude Malfunction Light on at 11:50. I still have not started caging.

68 11 11 CC Roger. Understand. Houston advises to take it easy on your fuel. They estimate 10 lbs of propellant for these checks.

68 11 23 C Roger, I'll go easy on it. We've been in Pulse Mode ever since we took off.

68 11 27 CC Roger. I also have Rev 44 map update for you.

68 11 33 C Okay. Go ahead.

68 11 35 CC Roger. 121° West at G.m.t. 12 35 00.

68 11 44 C Roger. 121 West at 12:35.

68 11 47 CC That's affirmative.

[REDACTED]

[REDACTED]

68 11 52 CC Everything looks good from here.

68 11 55 C Okay, same here.

68 13 06 C We're taking the 6 set here. Photographs at 11:25.

68 13 37 P You rolling it enough?

68 14 08 P Supposed to go right into darkness, isn't it?

68 14 10 C Yes. .... those guys told me to aline that plat-  
form. .... you wait, I'll bet we don't get that  
platform up in time .....

68 14 55 P You know what we're supposed to be looking for on  
the sunset?

68 14 58 C I'm ..... right now.

68 15 42 C How can you do this and take pictures?

68 42 58 CC Gemini 4, Carnarvon CAP COM.

68 43 15 C Go ahead Carnarvon, Gemini 4.

68 43 18 CC Roger. Looking good here on the ground. How are  
you doing?

68 43 20 C Fine.

68 43 22 CC Okay. Have you finished up with your horizon scan-  
ner on sunset?

68 43 26 C Negative, I'm not.

68 43 28 CC Okay. I'd like you to take a look to see if you  
can see the lights of Melbourne. That'll be about  
8 minutes from now.

68 43 35 C Okay. At 00:08?

68 43 41 CC Ought to be a pretty good time. They should be just  
a little to the right of you - just about underneath  
you -- just slightly down.

68 43 48 C Okay. To the north.

68 43 49 CC Negative, to the south.

68 43 52 C To the south. Okay.

68 43 54 CC I don't know whether you would see it. It's raining  
here real bad. I don't know whether the weather is  
clear over Melbourne or not.

68 43 56 C Okay. Yes, everytime I go over Australia all I ever  
see is thunderstorms.

68 44 02 CC Had 3 inches today.

[REDACTED]

[REDACTED]

68 44 04 C Wow!

68 44 05 CC They need it.

68 44 09 C Did you get it all today?

68 44 11 CC Say again.

68 44 18 C I got the platform all powered up, and it seems to be working properly.

68 44 22 CC Very good.

68 44 23 C Yes, I thought so, too.

68 44 28 CC How about pushing down on your external lead again.

68 44 46 CC Okay. Looks like it fixed the problem.

68 44 49 C Very good.

68 44 50 C Those things are starting to hedge a little.

68 44 53 CC Say again.

68 44 54 C I say, those things are starting to hedge a little.

68 45 58 CC How long did it take you to warm up the platform?

68 46 02 C ..... I turned it on at 11:50 and at 12:15 I got the Attitude Mal Light which indicated that it was warmed up.

68 46 11 CC Okay. 25 minutes. Thank you.

68 46 13 C Roger. I didn't start alining until about 30 after.

68 46 23 C And after I started alining it, I started with a pretty bad reference, because we were trying to get this MSC-10 thing done. It took about 15 to 17 minutes to get it to aline properly.

68 46 35 CC Roger. Understand.

68 47 01 CC Looks like your cohort woke up?

68 47 03 C Yes, we're pretty busy here. He took a little one ..... He only got better for about 15 minutes.

68 47 11 CC Wasn't worth it.

68 47 14 C No, he went around to put on our pajamas. So I guess it wasn't too much trouble.

68 47 19 CC Right.

68 50 19 C Carnarvon, Gemini 4.

68 50 21 CC Go ahead.

[REDACTED]



[REDACTED]

68 50 22 C I see some lights shining on the clouds down below me at this time.

68 50 23 CC All right. That should be Melbourne.

68 50 26 C Okay. Very good. Tell them I thank them for lighting the night for me.

68 50 28 CC Okay, very good. They'll appreciate that.

68 50 31 C Tell them the next time though, to get those clouds out of the way so I can see the city and not just the clouds.

68 50 34 CC That's the same way I feel, I'm all miffed.

TEXAS

69 25 42 CC Gemini 4, Gemini 4, Houston CAP COM. Over.

69 26 05 CC Gemini 4, Gemini 4, Houston CAP COM. Over.

69 26 13 P Houston CAP COM, Gemini 4. Go ahead.

69 26 16 CC Roger. How are you coming on your Horizon Checks? Over.

69 27 19 CC Gemini 4, Gemini 4, Houston CAP COM. Over.

69 27 29 P Go ahead Houston, Gemini 4.

69 27 32 CC Roger, Gemini 4. How are your Horizon Checks coming?

69 27 37 P We're coming on pretty well. We've got - the Horizon Scan Thruster and the Track Check left to do.

69 27 51 CC Roger. I would like to remind you that the Horizon Scan Thruster Check should not be commenced until you can confirm Canary's AOS. Canaries will give you a call at AOS. Over.

69 28 06 P Roger. Understand. We will wait for Canary's AOS.

69 28 10 CC Roger. And we're interested in the cabin humidity. Is there any noticeable water in the cabin? Over.

69 28 17 P Negative. We were just talking about that a few minutes ago. The humidity is staying low, about 60 to 63 percent, and there is no noticeable moisture. We've been doing a great deal of operations with face-plates open and gloves off.

69 28 32 CC Understand. Face-plates open and gloves off.

[REDACTED]

[REDACTED]

69 28 34 P Affirmative.

69 28 37 CC Roger. We would like to know how much colored film remains. Just an estimate - for the Hasselblad camera and the 16-mm camera. Over.

69 28 46 P Broke up. Say again.

69 28 50 CC Roger. We're interested in an estimate of how much unexposed colored film you have for the Hasselblad and the 16-mm cameras.

69 29 26 CC Gemini 4, Gemini 4, Houston CAP COM. Over.

69 29 32 P Go ahead, this is Gemini 4.

69 29 34 CC Roger. Can you give us an estimate of how much colored film you have remaining for the Hasselblad and 16-mm cameras?

69 29 43 P Roger. We have one magazine of Hasselblad film left and a little under two magazines of 16-mm left.

69 29 52 CC Roger. Understand. You two ready to come home yet?

69 29 56 P Say again.

69 29 59 CC Are you two ready to come home yet?

69 30 06 C I'm sure getting tired of looking at his ugly face. He needs a shave.

69 30 10 EC We're getting tired of hearing that silly voice, too, McDivitt.

69 30 12 C Hello, Frankie.

69 30 15 CC How are you doing?

69 30 17 C Well, I'm waiting until 12:58 so I can fire my thrusters again.

69 30 21 CC Ha! Ha! This is the most fun you've had in 2 days, I'll bet.

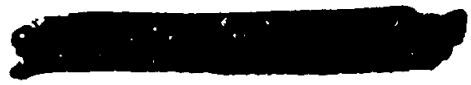
69 30 25 C Yes, it's the first time I've fired the thrusters in 2 days.

69 30 27 CC Have at it, flight-time hogs!

69 30 31 C Too bad this isn't next month; I have my requirements in all ready.

69 30 35 CC Hey, you know I knew that White was a time hog, Jim, but I always thought you were a 55-minute mission man.

[REDACTED]



69 30 41 C You're making me stay up here until we burn out the fuel.

69 30 44 CC Right.

69 30 46 P I don't ever land with them full.

69 30 50 C ..... and we shoot GCA's when we come back.

69 30 51 CC Right. Everything's just real good down here. I saw both of your wives yesterday. Everything's in good shape.

69 30 58 C Okay.

69 31 02 CC We're thinking of extending the mission about a week.

69 31 04 C Better send some more food!

69 31 10 CC Okay. Frank said he would be on his way up as soon as he can make it.

69 31 29 C Houston, Gemini 4. Where am I?

69 31 33 CC Say again, Gemini 4.

69 31 35 C I say, where am I?

69 31 38 CC You don't know? It looks like you're just about southeast of the tip of Florida. Probably about over Cuba.

69 31 49 C I got it. I thought it was an island - turned out it was Florida.

69 32 00 CC Gemini 4, can you give us a reading on OAMS source pressure, temperature, and quantity?

69 32 08 C Roger. The quantity reads 55 percent, but it keeps going up and down. I think that's a pretty good average number right now.

69 32 21 P The OAMS source temperature is 70, pressure is 1900.

69 32 30 CC Roger. We got 55 percent, 70, and 1900.

69 32 35 C That's affirmative.

69 33 56 CC Gemini 4, this is Houston.

69 34 00 C Go ahead, Houston.

69 34 01 CC Roger. It looks like you've used about 15 pounds at a first guess - OAMS.

69 34 08 C I've used how much?

69 34 11 CC A first cut at it, Jim, looks like about 15 pounds so far.



[REDACTED]

69 34 16 C I've used 15 out of 10?

69 34 20 CC Yes, 15 out of 10 available for these checks.

69 34 25 C No, we haven't used that much at all.

69 35 13 CC Gemini, this is Houston. That's just a rough guess on the OAMS usage. We'll get a better cut at it after Canaries. You're still looking good.

69 35 24 C Okay. I got a question. This check that we are supposed to perform at 13:14 which is a One Attitude Thruster Check. Is that the Attitude Thruster Failure Check?

69 35 33 CC Okay. Stand by one.

69 35 53 CC That's affirmative, Jim. That's a One Attitude Thruster Failure Check.

69 35 58 C Okay.

69 36 54 CC Gemini 4, this is Houston. You really sound great, and we'll see you later tonight.

69 37 01 C Okee-dokee.

CANARY ISLANDS

69 42 56 CC Gemini 4, Canary CAP COM.

69 43 08 CC Gemini 4, Canary CAP COM.

69 43 18 C Canary, Gemini 4. Do you read?

69 43 21 CC Roger. We have T/M Acquisition on you now.

69 43 24 C Okay. I'll go ahead with that thruster check.

69 43 30 C All set?

69 43 32 CC Roger.

69 43 42 C Okay. We didn't get any break lock on that.

69 43 46 CC Say again.

69 43 48 C We completed the Thrusting Fire Scanner Check, and we didn't get any break lock on the scanner.

69 43 55 CC Roger.

[REDACTED]

CARNARVON

70 16 58 CC Gemini 4, Carnarvon CAP COM.

70 17 14 C Gemini 4.

70 17 16 CC All right. How're you doing?

70 17 21 CC Looking good down here. How are you looking up there?

70 17 36 CC Gemini 4, Carnarvon. How do you read?

70 17 37 C Very good, Carnarvon. How do you read?

70 17 40 CC Loud and clear. How are you going?

70 17 41 C Fine. How are you doing?

70 17 42 CC A little tired. You're looking real good down here.

70 17 44 C Of course. Everything going along okay up here. Be advised we turned off our computer and powered down the IGS at 13:20.

70 17 54 CC Roger, did you have our computer on ..... checks?

70 17 58 C Yes, we did.

70 18 02 CC Okay, very good. I'll make a Medical Pass Type 1 on the Pilot at Texas at 14 13 15.

70 18 14 C Say, listen. Ed hasn't been to sleep yet. He's just about to go to sleep and I think it would be better for him to go to sleep than to have a Medical Data Pass. How about a medical pass on him right now?

70 18 29 CC How about putting the oral temp probe in his mouth and get on pumping up that gage on that blood pressure?

70 18 59 CC Command Pilot, Carnarvon.

70 19 02 C Go ahead.

70 19 04 CC Did you check any MDIU quantities while the computer was powered up?

70 19 08 C No, we didn't.

70 19 09 CC All right.

70 19 45 CC Cuff is full-scale, coming down, let it down. Okay, we got a valid blood pressure.

70 19 47 C Okay.

[REDACTED]

70 19 54 CC Stand by for Surgeon.

70 19 56 S This is the Carnarvon Surgeon. Take your exercise on your mark.

70 20 02 C MARK!

70 20 48 S The blood pressure looks good, Pilot.

70 20 50 C Okay.

70 20 58 S Could we have some more information on your food and water?

70 21 04 C Is the temperature good?

70 21 09 C Carnarvon Surgeon, is the temperature okay?

70 21 13 S Affirmative, you can take the probe out.

70 21 19 P The Pilot is on the second meal of the third day at the present time and had 7 swallows of water since the last report.

70 21 28 S Okay, have you had a chance to sleep at all since your last Aero-Med Pass?

70 21 34 P No, I don't believe so.

70 21 36 S Okay, that is all we need at this time -

70 21 40 P ..... another 15-minute nap, as a matter of fact.

70 21 41 P What was that again?

70 21 43 P I caught about a 15-minute nap but have been pretty happy for the last couple of hours.

70 21 46 S You received more rest in the last pass or so; we noticed that, but unfortunately, we had to wake you up.

70 21 53 P Right, ..... about 15 minutes.

70 21 54 S Okay, Carnarvon Surgeon out.

70 21 55 P All right.

70 22 02 C ..... sleep right now ..... Power down a little bit.

70 22 05 CC Okay ..... we have got that.

70 22 08 P Okay, see you next time around.

70 22 13 P I'll be asleep.

70 22 38 CC ..... Gemini 4.

70 22 44 C Stand by one.

70 22 48 C We're pointing straight down.

[REDACTED]

[REDACTED]

70 22 49 CC Say again.

70 22 51 C We're pointing straight down.

70 22 53 C Roger. Got that.

70 57 37 CC Gemini 4, Gemini 4, this is Houston CAP COM. Over.

70 57 52 CC Gemini 4, Gemini 4, this is Houston CAP COM. Over.

70 57 56 C Go ahead. This is Gemini 4.

70 57 59 CC Roger, Gemini 4. I'd like to advise you, you'll have a critical tape dump over Canaveral in approximately 4 minutes.

70 58 08 C What was that?

70 58 11 CC Roger, a critical tape dump over Canaveral in about 4 minutes.

70 58 20 CC Hey, Gemini 4. We'd like your Quantity Read Switch ON and I'll tell you when to turn it OFF.

70 58 26 C Roger, it's on. Do you want me to right-side-up when I pass over Canaveral?

70 58 31 CC That's affirmative.

70 58 33 C Okay.

70 58 40 CC How are you doing this morning, Jim?

70 58 43 C ..... just dandy!

70 58 46 CC Doing great.

70 58 48 C .....

70 58 50 CC Affirmative.

70 58 52 C Hello there, how are you?

70 58 54 CC Just fine. After a ling night's sleep!

70 58 58 C Affirmative. We've had a lot of short night's sleep.

70 59 03 C I'm getting along fine, .....

70 59 07 CC You're doing a great job. Jim, we took a hack on your accelerometer bias down here and it - while your platform was powered up - and it looks good to us.

70 59 18 C Okay, thank you.

70 59 20 CC Roger, and I'd like to advise you that any MSC-10 films that you have left over, you can use for targets of opportunity at your own option.

[REDACTED]



70 59 31 C Okay, Ed's got it ..... I don't think we can get anything exciting .....

70 59 40 CC Rog, and concerning S-5 and S-6 you'll have some more weather over the Canaries and the pass over Africa on this Rev. Looks good for S-6.

70 59 56 C Okay, I never did see any clouds down on the Canaries last time.

71 00 02 CC Roger, they're still supposed to be there.

71 00 04 C Okay, I'll look again. I got to get my partner to go to bed. But he doesn't seem to be able to make the grade.

71 00 15 CC I didn't read you that time, Jim. Say again.

71 00 18 C I said, I'm still trying to get my partner here to go to bed but he doesn't seem to be able to make it.

71 00 27 CC Understand you're still trying to get your partner to sleep. Is that right?

71 00 31 C That's right.

71 00 33 CC Okay.

71 00 36 CC You can turn your Quantity Read back off.

71 01 51 C ..... this is Gemini 4.

71 01 57 C ..... for about 3 or 4 hours.

71 02 35 CC Okay.

71 02 40 C Carnarvon says they have been having an awful lot of rain. Do you think that could be what's bothering you?

71 02 56 C What time will we get to the Canaries?

71 03 02 C Yes, I want to know what time we should start looking for any clouds again.

71 03 13 C Roger.

CANARY ISLANDS

71 16 38 CC Gemini 4, Canary CAP COM.

71 16 42 C Canary, Gemini 4.

71 16 46 CC Roger, we have you still powered .....





[REDACTED]

71 17 50 C You have what?  
71 16 52 CC We have you .....  
71 16 54 C That's affirmative. I'm looking for some blood  
..... around here.  
71 16 56 CC Roger.  
71 17 00 C You know where they are? I don't seem to be able  
to find them.  
71 17 27 CC That's northeast of it.  
71 17 30 C Okay.  
71 17 57 CC Gemini 4, Canary CAP COM.  
71 17 59 C Go ahead.  
71 18 02 CC Flight says he doesn't worry about the ACME power.  
71 18 04 C Okay, I'll turn it off as soon as I get over Africa.  
I don't see those clouds floating around any place.  
71 18 11 CC Roger.  
71 18 30 C I'm approaching Africa. I'm going to turn it off  
now.  
71 18 34 CC Roger.

CARNARVON

71 51 02 CC Gemini 4, Carnarvon CAP COM.  
71 51 39 C Hello Carnarvon, hello Carnarvon, Gemini 4.  
71 51 42 CC ..... Gemini 4, Carnarvon. Loud and clear. How me?  
71 51 46 C Loud and clear.  
71 51 47 CC Okay, looking good here on the ground. How are you  
doing?  
71 51 50 C We're doing fine. The Pilot went to sleep about  
half an hour ago and he'll be sleeping probably for  
another 5 or 6 hours.  
71 51 59 CC Okay, we got a couple of things for you that we want  
you to do.  
71 52 02 C Okay.  
71 52 05 CC Guaymas acquisition time 15 44 55.

[REDACTED]

[REDACTED]

[REDACTED]

71 52 13 C Stand by, let me find my data book.

71 52 16 CC Okay, reach up and grab it.

71 51 00 CC Gemini 4, Carnarvon CAP COM.

71 51 40 C Hello Carnarvon, hello Carnarvon, Gemini 4.

71 51 42 CC Gemini 4, Carnarvon. You are loud and clear.  
How me?

71 51 45 C Loud and clear.

71 51 47 CC Okay. You're looking good here on the ground. How  
are you doing?

71 51 50 C We are doing fine. Ed went to sleep about half an  
hour ago and he will be sleeping, oh, maybe for  
another - at least 5 or 6 hours.

71 52 00 CC Okay. Got a couple of things for you they want you  
to do.

71 52 03 C Okay.

71 52 04 CC Guaymas acquisition time 15 44 55. ....

71 52 10 C Stand by a minute. Let me find my data book here.

71 52 12 CC Okay, reach up and grab it.

71 52 32 C Okay, I was sitting on it. Go ahead.

71 52 34 CC All right. At 15 44 55, that's Guaymas acquisition,  
they want you to switch your Real Time T/M to the  
REAL TIME and ACQ AID position.

71 52 48 C Roger. Was that 14:55?

71 52 50 CC Negative. 15 44 55.

71 52 58 C Okay, 15 44 55. My T/M switch to REAL TIME and  
ACQUISITION.

71 53 03 CC Right. Three minutes prior to that they want you to  
put your oral temp probe in your mouth. They want  
a Type 1 Medical Pass over Guaymas.

71 53 12 C Okay. Type 1 over Guaymas.

71 53 14 CC Okay.

71 53 16 C They told me they wanted me right-side-up when I  
went over you. Was that next time or this time?

71 53 21 CC It must have been for the next time. Hold on. I'll  
see what they are talking about.

71 53 25 C Okay. I'm pointing down at the ground again .....

[REDACTED]

[REDACTED]

71 53 43 C I have my T/M .....

71 53 47 CC Okay, we have good T/M. Hold up a second. I want to talk to Flight.

71 53 50 C Okay ..... with T/M.

71 54 01 CC Okay. We are in good shape now, Gemini.

71 54 03 C Okay.

GUAYMAS

72 29 08 CC Gemini 4, Guaymas CAP COM. Will you place your Telemetry Switch to REAL TIME and ACQ AID?

72 29 30 CC Gemini 4, Guaymas CAP COM. We have completed your oral temp.

72 29 48 CC Gemini 4, Guaymas CAP COM. We have completed your oral temp.

72 29 58 S Gemini 4, your cuff is full-scale.

72 30 39 S Gemini 4, your blood pressure is received. Start exercise on your mark.

72 30 50 S Gemini 4, Guaymas Surgeon. Do you read?

72 50 52 C Roger. Do you read?

72 30 54 S Roger, Gemini 4. Start your exercise on your mark. We have received your blood pressure.

72 30 59 C Roger.

72 31 01 C MARK!

72 31 53 S Your cuff is full-scale.

72 32 20 S Gemini 4, your blood pressure is received. We are standing by for your first water and sleep report.

72 32 28 C Roger. I just finished up Meal A of Day 3. Ed has finished one - the same type, too.

72 32 40 S Say again, Gemini.

72 32 41 C I had a lot of water. I don't know how many gulps, but I probably had 20 to 30 gulps along with a couple of meals in the last 2 hours.

72 32 48 S Roger, understand meal Charlie.

[REDACTED]

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72 32 52 C That's right. Now, I've been asleep for about 2 or 3 hours. Ed's going to sleep for about 5 or 6 here, so I probably won't be going again for 6 or 7.

72 33 02 S Roger, understand. Surgeon out.

72 33 04 C Roger.

72 34 31 CC Gemini 4, Houston CAP COM.

72 34 37 C Go ahead, Houston. Gemini 4.

72 34 38 CC Gemini 4, will you turn your computer on?

72 34 51 C Roger, my computer is ON, the COMP LIGHT ought to be on in about 10 seconds.

72 35 01 CC Okay. Go ahead and turn your T/M switch to COMMAND and your Quantity Read Switch ON, also.

72 35 08 C Okay.

72 35 31 CC Gemini 4, Houston CAP COM.

72 35 32 C Go ahead.

72 35 33 CC I've got quite a bit of information to pass up to you, Jim. First of all - first is your 48-1 time. Tell me as soon as you are ready to copy.

72 35 50 C Okay. Go ahead.

72 35 51 CC Okay. 24 ft/sec forward, that's 40 seconds, 120 ft/sec aft, that's 2+32 at 17 20 00. 2+53. 8+55. Continue 48-1 time without burn. 17 14 37. 7+41. 14+29.

72 36 33 C Got it.

72 36 34 CC Okay. Now I've got quite a bit of information to pass up to you here. We would like for the Pilot, who is asleep, to leave his face-plate open and his gloves off. And then we would like for the Pilot that is awake to take off his helmet and gloves and use the light-weight headset for communications if he can. And we would like for you to continue this way up until about 3 hours prior to retrofire. Then, once in orbit, at your convenience, we would like for you to take a wet and dry bulb reading and just at any station give us a report of what it was and what time you took it.

72 37 24 C Okay. We have been operating with the face-plate open and gloves off now for about the last 12 hours, but mostly in that situation we kept oversleeping. When we sleep we generally close the visor and put the ..... cover to keep the light out of our eyes.

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[REDACTED]

72 37 44 CC Roger.

72 37 47 C The humidity stays down around 50 percent.

72 37 52 CC Roger. Okay, Jim, we decided that you've got a little bit of fuel left that we can play with here in the Flight Plan. We would like for you to go to the Horizon Scan Mode for the next 8 hours. That's at an elapsed time of about 80:30, and we want you to use the Primary Scanner. We don't want you to do any controlling in yaw, and if the scanner breaks lock, don't control in roll or pitch either. We want to see - if it breaks lock, we would like to see if it will reacquire.

72 38 33 C Okay. You want the horizon scanners on for the next 8 hours.

72 38 36 CC Affirmative.

72 38 38 C 80 hours elapsed time.

72 38 39 CC Roger.

72 38 41 C Okay, Gus. For flight planning purposes, we haven't been able to do much with D-9, because we haven't been using the fuel for it. We ought to save a little fuel to do that.

72 38 51 CC Okay. We got no problem. Go ahead and use your D-9. Now, on the Apollo landmark no. 2, we would like for you to be in attitude for that at 17:19. G.m.t. of 17:19. And the landmark will be 16 miles north of track, and you should be pitched down about minus 30° at that time. And we would like for you to track this as close as possible and to get some pictures using the 16-mm camera with 75-mm lenses with a nominal lens setting.

72 39 32 C Roger. Will do.

72 39 34 CC Do you want me to repeat any of that?

72 39 36 C Negative. Apollo no. 2 at 17:19. 16 miles north of track. Pitch is down about 30° and use the 75-mm lenses at that time.

72 39 45 CC Roger, and really have at it and track it close. Use your reticle.

72 39 48 C Okay.

[REDACTED]

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72 39 50 CC Okay. Your Orbit Nav Runs 9 and 10 do as scheduled in the Flight Plan. Do it just as you previously planned to do it. Just for information, 9 is scheduled at an elapsed time of 75:30 and 10 at 75:50.

72 40 13 C Okay. We will do Orbit Nav Runs 9 and 10 as scheduled at 75:30 and 75:50.

72 40 18 CC Roger. We are going to come up with some more tracking tasks for you, I think, and we want most of them to be done pretty tight.

72 40 27 C Okay. Very good.

72 40 29 CC Okay, I have a map update for you if you want it now.

72 40 33 C Okay. Go ahead.

72 40 35 CC Okay. 170° East, G.m.t. is 17 00 00. That's Rev 47.

72 40 48 C Okay. 17 East at 17 00 00. Rev 47.

72 40 56 CC Roger. You can bring your Quantity Read OFF.

72 41 03 CC And you can bring your computer OFF also.

BERMUDA

72 41 22 CC Gemini 4, Houston. How do you read now?

72 41 22 C Loud and clear.

72 41 25 CC Okay. Did you get all of that? Did you get the Quantity Read OFF and the computer OFF?

72 41 30 C Yes. I'm getting them now.

72 41 32 CC Okay.

72 41 25 CC Okay, now Flight would like to know if you are going to try sleeping with your helmet off. Try sleeping with your face-plate open, I'm sorry.

72 41 49 C I don't know. The sun really gets in your eyes, Gus. I don't think we'll try that. Ed has tried sleeping with his helmet up and then down and right now he just slipped it up. He's having a tough time with the sun. I tried it, and I can't do it.

72 42 05 CC Okay. Can you just put the shade over anyway?

72 42 10 C Yes. He's sleeping with it about half open. How about that?

72 42 13 CC Okay.

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- [REDACTED]
- 72 42 17 C Actually the last 12 hours or more, maybe as much as 24, we haven't been too careful about keeping our face-plate closed and our ..... bands up because obviously, the humidity isn't going up.
- 72 42 28 CC Yeah. Well, of course, that is what we are trying to do. We are trying to get a good hack on what is happening there. Maybe we don't have a problem like we originally thought.
- 72 42 37 C Yes. I don't think we do. Essentially, Ed hasn't had his face-plate closed for the last 12 hours, and I only had mine closed when I was sleeping.
- 72 42 44 CC Okay. Well, go ahead and do what we asked as near as you can and give us those wet and dry bulbs so we can get a good spot on this thing.
- 72 42 54 C Okay. I have been running them right along and our temperatures are running about - the dry bulbs are running 72 and 75, the wet bulbs between 60 and 64. The relative humidity stands pretty close to around 60 percent.
- 72 43 08 CC Very good.
- 72 43 10 C Yes. And there is no visible moisture. And there isn't any moisture around that blotting paper. Unfortunately, you covered up the walls so that I can't take the temperature, but the worst temperature I can find is about 65.
- 72 43 24 CC Roger.
- 72 43 36 CC Jim, the Flight Surgeon wonders if he can say anything about your eyes. Have you had any problems? Any drying or anything at all?
- 72 43 45 C Yes. Listen, I had a lot of trouble with my eyes at the end of the first day. I wasn't sure I was going to be able to hack it. But they have cleared up now. I think our little problem was taken care of by the suit heat exchanger.
- 72 43 58 CC Okay. You don't have any problem at all now with them?
- 72 44 01 C No problem at all. Though it was really bad between about 18 and 36 hours.
- 72 44 09 CC Roger, understand. Anything else?
- 72 44 13 C No. We are pretty well.
- 72 44 15 CC Very good.
- [REDACTED]



CARNARVON

73 25 04      CC      Gemini 4, Carnarvon CAP COM. You look good here on the ground. We are standing by if you have anything you need.

73 25 13      C      Roger, Carnarvon. This is Gemini 4. We're happy.

73 25 17      CC      Okay, we'll just let you alone and continue on.

73 25 20      C      Roger, thank you. Hey, Ed .....

73 25 26      C      Carnarvon, Gemini 4, has it stopped raining yet?

73 25 29      CC      Oh, let me take a look outside ..... He's sticking his head out the window - wait a second.

73 25 49      C      Okay.

73 26 03      CC      It has stopped raining, a little bit wet though -

73 26 05      C      Very good.

73 26 17      C      There sure have been some wild thunder clouds over Australia here in the last couple of days.

73 25 22      CC      That's affirmative. We've had about 3 inches of rain today. People around here can really use it for their sheep. This is the dry time of the year.

73 26 31      C      Roger.

73 26 34      CC      And the bananas, too.

73 26 37      C      Bananas?

73 26 38      CC      Affirmative. They raise bananas here.

73 26 44      C      I'm trying to think of a banana and a kangaroo joke but I can't put the two together.

73 27 06      CC      Is your buddy awake?

73 27 09      C      No, he's sound asleep.

TEXAS

74 09 12      CC      Gemini 4, Houston CAP COM.

74 09 14      C      Go ahead, this is Gemini 4.

74 09 15      CC      Roger, I'd like to give you your 51-4 time.

74 09 34      C      Okay, go ahead.





[REDACTED]

74 09 36 CC Okay, 25 ft/sec forward, 41 sec 120 aft, 2+32.  
At 23+16+02. 2+42. 8+45. Then without burn  
23+10+17. 7+05. 14+17.

74 10 19 C Okay, got 'em.

74 10 21 CC Okay. Will you turn your computer ON?

74 10 47 CC Jim, did you get your computer ON?

74 10 49 C Roger, I just got it ON about a couple of seconds ago.

74 10 50 CC Okay, fine. Hey, Jim, we've decided not to do an orbit adjust. So you just make one burn prior to retrofire.

74 11 00 C Okay. How big is it going to be?

74 11 02 CC It'll be about 130 ft/sec.

74 11 04 C Okay. What's my orbit right now?

74 11 09 CC Say again.

74 11 10 C What's my current orbit?

74 11 12 CC Stand by, I'll get it for you. This means that we have some extra fuel to play with. So we're in the process now of working in some other tracking tasks, and some other things into your Flight Plan that we'll be passing up to you as you go along.

74 11 24 C Very good.

74 11 27 CC So we're going to do a little bit more controlling.

74 11 30 CC Your orbit right now is 86.3 by 141.6 Staying up very, very well.

74 11 39 C Roger.

74 11 42 CC Hey, did you do a Main Battery Check on the last orbit?

74 11 46 C I don't know if Ed did one or not; I'll do one. Do you want it right now?

74 11 50 CC Well, can you do it? We can wait a little while until Ed wakes up if you want.

74 11 55 C No, he's going to be asleep for awhile. I'll try to do it.

74 12 01 CC Do you want me to read the news to you, while you're trying to do that?

[REDACTED]

[REDACTED]

74 12 08 C I tell you what, why don't I wait and get it at  
Canaries. How about that?

74 12 12 CC Yes, that's a good idea.

74 12 13 C All right, I'll do it while I'm crossing the ocean.

74 12 16 CC Okay, that's good. Hey, you don't go over the  
Canaries.

74 12 19 C I don't go over the Canaries this time?

74 12 21 CC No, but you can do it between now and Carnarvon.

74 12 24 C Okay.

74 12 28 CC Okay. Here's Haney's news release. It says in the  
morning paper that you're not going to go for 5 days.  
This came up in a press conference last night and  
in answer to this question Chris said it looked like  
we had the consumables to make it, but we had no  
plans to do so.

74 12 52 C Roger.

74 12 55 CC There seems to be a move on in Rome to make  
Pope John XXIII a saint. Even though it may take  
a hundred years or so.

74 13 03 C Roger.

74 13 05 CC And the Domed Stadium rental controversy is still  
going on. Then, there's a nice story about Chris  
and the Control Center and your flight team and  
your families in the Chronicle this morning.

74 13 22 C Very good.

74 13 25 CC And then, the last item, the Cards finally beat the  
Astros yesterday, 4-3. Took them 12 innings to do  
it. That's about it.

74 13 37 C Roger.

74 13 39 CC The rest of the news is Gemini 4.

74 13 42 C Roger. I missed that last part, but I guess it's  
okay.

74 13 45 CC Roger. Just about the baseball team.

74 13 48 C Okay. How's everything going down at the Control  
Center?

74 13 52 CC Working better than anybody had reason to expect.

74 14 00 F Really great, Jim.

[REDACTED]

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74 14 19 CC Hey, Jim -  
74 14 26 CC Gemini 4, CAP COM.  
74 15 03 CC Gemini 4.  
74 15 13 F Gemini 4, Houston Flight.  
74 15 41 F Gemini 4, Houston Flight.  
74 15 44 C Hello Houston Flight, Gemini 4.  
74 15 45 F We're real pleased with the way the Control Center is working down here, Jim. The guys have done a great job and deserve a lot of credit. A tremendous flight!  
74 15 56 C Roger, thank you. Glad to see it's all working out.  
74 16 00 F Roger.  
74 16 12 CC Gemini 4, CAP COM. Do you want to turn off your computer?  
74 16 16 C Roger. Already have, Gus.  
74 16 17 CC Okay.

CARNARVON

74 58 05 CC Gemini 4, Carnarvon CAP COM.  
74 58 25 C Hello Carnarvon, Gemini 4.  
74 58 27 CC Okay. You're looking real good here on the ground. How are you doing?  
74 58 30 C Fine, thank you. Stand by for just a second. I want to write something down.  
74 58 33 CC Okay. Get a long piece of paper. I've got a series of updates for you.  
74 58 38 C Okay, .....

74 58 54 C Okay, I've got my ....., but before that I want to tell you that my batteries all checked out over the States. Just after I left the States, I did a Battery Check and they all looked normal.

74 59 05 CC Okay. Very good. You ready to go?  
74 59 06 C Go.  
74 59 08 CC 50-4: 55 forward, 71 aft. 1+31. 1+30. 21 40 33.  
3+26. 9+02.

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[REDACTED]

74 59 24 C Okay.

74 59 32 CC 52-3: 113. 2+24. 00 33 33. 4+03. 9+25.

74 59 56 C Okay.

74 59 57 CC 53-3: 55 forward, 71 aft. 1+31. 1+30. 02 07 19.  
3+17. 9+00.

75 00 22 C Okay.

75 00 23 CC 54-3: 55 forward, 83 aft. 1+31. 1+45. 03 40 13.  
2+46. 8+39.

75 00 48 C Okay.

75 00 50 CC 49-DELTA: 55 forward, 99 aft. 1+31. 2+05.  
19 13 14. 9+09.

75 01 12 C Okay.

75 01 14 CC 50-DELTA: 55 forward, 85 aft. 1+31. 1+48.  
20 46 06. 10+36.

75 01 35 C Okay.

75 01 37 CC 51-DELTA: 55 forward, 73 aft. 1+31. 1+32.  
22 19 00. 11+31.

75 01 58 C Okay.

75 01 59 CC 52-DELTA: 115. 2+25. 23 52 37. 11+44.

75 02 17 C Okay.

75 02 18 CC 53-DELTA: 100. 2+07. 01 26 56. 11+36. Over.

75 02 36 C Say again the GMIRC.

75 02 38 CC 01 26 56.

75 02 42 C Roger. That's 26?

75 02 44 CC I say it again. 01 26 56.

75 02 48 C Roger. 01 26 56.

75 02 51 CC Roger. They intentionally omitted 51-4. You'll  
get that later.

75 02 57 C Okay.

75 03 00 CC Did you get them all?

75 03 02 C Got them all.

75 03 03 CC Okay.

75 03 05 C You're getting pretty proficient at that.

75 03 07 CC I've got a lot of wind.

[REDACTED]

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75 03 11 C You said it, not me.  
75 03 14 CC I did it again.  
75 03 58 CC We'd like to know if your partner's been sleeping straight through.  
75 04 02 C I think so. Every once in a while he opens his eyes, but that's the way you sleep up here - sort of interrupted a lot.  
75 04 09 CC Roger.  
75 05 36 CC Command Pilot, you got your helmet on or off?  
75 05 39 C I've got my helmet on, but I've got the neck ring unfastened. The light-weight headset's over on Ed's side and I don't want to bother him.  
75 05 47 CC Okay.

GUAYMAS

75 36 06 CC Gemini 4, Guaymas CAP COM.  
75 36 17 C Go ahead Guaymas, Gemini 4.  
75 36 19 CC Roger. All systems are green. We've got a change time for your D-9 Experiment, Run 4.  
75 36 25 C Okay. Stand by one.  
75 37 14 C Go ahead, Guaymas.  
75 37 15 CC Roger. Start at sunset on Rev 50 at 20:51 Zulu.  
75 37 27 C That's 20:51 Zulu?  
75 38 29 CC That's affirmative.  
75 42 34 CC Gemini 4, Houston CAP COM.  
75 42 41 C Go ahead, Houston, Gemini 4.  
75 42 44 CC Hey, Jim, will you turn your computer ON?  
75 42 47 C Roger.  
75 42 48 CC Okay. I've got another experiment to pass up to you here.  
75 42 54 C Okay. Just a minute.  
75 43 07 P Go ahead Houston, Gemini 4.  
75 43 11 CC Hey, Ed, you're awake!

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75 43 15 P Rog.

75 43 16 CC This concerns the Zodiacal Light Experiment which is going to be on "5", and they want to find out if they're going to get any fogging of the film from the attitude control thrusters. We'd like for you to use your 35-mm Contarex camera, and you can use either black and white film or color. And set it wide open at f/18 with the range set at 8 feet.

75 43 43 C Roger.

75 43 45 CC Then we'd like for you to put the camera against the window so that the - and hold it so that the nose isn't in the field of view. Then we'd like two sets of photographs. Want you to be in Pulse Mode and have the spacecraft pointed straight down at the earth. This will be - I'll give you the time to start it. But it will be at the black earth on the night side. And then give one pulse-up pitch - pitch pulse-up and get a picture with the shutters of the camera open in the bulb position. And then as you come up through the horizon, get another picture of - with pitch-down pulse with another frame of the camera and again with the shutter wide open at that time. And then we want the same type of picture with pulse-up with the horizon view and with the black earth in view and a picture with pulse-down with the horizon view and the black earth in view.

75 45 05 C Roger. Understand a pulse-up and pulse-down with the bulb position on the 35-mm black and white or color set at f/18 at 8 feet.

75 45 14 CC That's affirmative.

75 45 15 C Okay. Will do.

75 45 16 CC Okay. We recommend you do it on Rev 51, starting at about 21:40 G. m. t.

75 45 26 C Roger. Rev 51 at about 21:40.

75 45 30 CC Roger. You can turn your computer OFF now. We just checked your loading and it's all okay.

75 45 35 C Say, Gus. I've got a question. This D-9 Experiment. Is that an Apollo on no. 4 or is that the other Air Force Run no. 4?

75 45 44 CC It's an Air Force Run.

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75 45 45 C Okay. When are we going to do the Apollo Run 4?  
 That one where we take all those stars.

75 45 50 CC Didn't you do it?

75 45 54 CC Didn't you do the Apollo one?

75 45 56 C No, we haven't done that one yet.

75 45 58 CC Okay, we'll schedule it in for you.

75 46 02 C Okay.

75 46 05 CC Okay, Jim. Would you press on your external lead.  
 Hey, and we have an indication that you're using  
 about 2 ounces more than we think you should.  
 We're wondering what is the position of your suit-  
 band, or do you have something else on that we don't  
 know about?

75 46 26 C Yes, we have the suit-bands at 2. We'll turn them  
 back to 2.

75 46 30 CC That's okay.

75 46 32 C Hey, I still have my Malfunction Light and my Com-  
 puter Light on, but the switch OFF.

75 46 55 CC We show a computer ON and no Malfunction Light.  
 What's your status now with the computer?

75 47 08 C ..... Prelaunch and some .....Mode.

75 47 12 CC Well, what mode were you in when you got your Mal  
 Light?

75 47 15 C What?

75 47 25 CC Well, what mode are you in on your computer now?

75 47 27 C I just went from Prelaunch to Catch-Up. That turned  
 the Comp light OFF. Let's see if it comes back on  
 now. Okay. It's back on. Now we'll turn the whole  
 computer OFF and see what happens.

75 47 53 C I still get the Computer Running Light when I've got  
 the switch OFF.

75 48 00 CC You still have the Computer Running Light with the  
 switch OFF?

75 48 02 C That's affirmative.

75 48 18 CC Hey .....

75 48 23 C What?

75 48 25 CC Hey, we still show that the computer is on.

[REDACTED]

75 48 30 C You say that you still show that the computer is on?

75 48 32 CC That's what we show here.

75 48 34 C Okay.

75 48 36 CC Cycle it one time, Jim.

75 48 41 C Yes, I cycled it a bunch of times already.

75 48 42 CC Say again.

75 48 44 C Yes. Hey, listen. Can you tell what mode I'm in now down there?

75 48 50 CC Affirmative.

75 48 51 C Okay, I'm going to go to Catch-Up and see if it switches over there.

75 49 05 CC It's in Catch-Up.

75 49 06 C Did it switch on?

75 49 07 CC Yes, it sure did.

75 49 17 CC All right, switch it back ON.

75 49 40 C Grissom.

75 49 41 CC Go ahead, Jim.

75 49 43 C What mode am I in now?

75 49 45 CC You're in Catch-Up.

75 49 46 C Is that what it shows down there?

75 49 49 CC It shows you're in Catch-Up and ON. That's correct?

75 49 50 C Okay, I must have - my ON/OFF Switch must have failed in the ON position.

75 50 07 C Yes. Hey, Gus!

75 50 09 CC Go ahead.

75 50 10 C Why don't I just turn the IGS power OFF, let it go back to Prelaunch. Then just turn the IGS power OFF.

75 50 22 CC Just stand by on it a minute, Jim.

75 50 29 CC Did you get that?

75 50 33 CC Gemini 4, Houston CAP COM.

75 50 35 C Go ahead CAP COM, Gemini 4.

75 50 38 CC Leave your computer the way it is for a few minutes. Okay?

[REDACTED]

CONFIDENTIAL



[REDACTED]

75 50 41 C Okay. I'll leave it OFF - switch OFF, in Prelaunch, with the Computer light burning. Actually, the computer's on, I guess.

75 50 47 CC Roger. We've got all the experts going through the books here.

75 50 48 C Okay.

75 50 51 CC Hey, Jim. Did you have your HF ON when you passed over Ascension on the last orbit?

75 51 01 C No, I didn't have my HF ON, but I was reading somebody on UHF.

75 51 07 CC Yes, they gave you a call.

75 51 09 C I answered on UHF, but I never got a response.

75 51 12 CC Okay, fine.

75 52 03 CC Hey, we're still thinking down here.

75 52 12 CC Gemini 4, you still reading?

75 52 25 CC Gemini 4, Houston CAP COM.

75 53 03 CC Gemini 4, Gemini 4, Houston CAP COM.

75 53 12 CC Gemini 4, if you read, turn your IGS OFF.

75 53 22 CC Gemini 4, Houston CAP COM. If you read, turn your IGS OFF.

76 01 14 CC Gemini 4, Houston CAP COM.

76 01 30 CC Gemini 4, Houston CAP COM.

76 01 53 CC Gemini 4, Houston CAP COM transmitting in the blind. We'd like for you to leave your computer running, Computer Switch ON, and your AC Power Switch to ACME.

76 02 18 CC Hello Gemini 4, Cape COM TECH. Do you read? Over.

76 02 40 CC Gemini 4, Houston CAP COM.

76 02 53 CC Gemini 4, Houston CAP COM. We'd like you to leave your Computer Switch ON, your AC Power Switch in ACME.

76 03 34 CC Gemini 4, Houston CAP COM.

76 03 56 CC Gemini 4, Houston CAP COM.

76 04 15 CC Gemini 4, Houston CAP COM. Leave your Computer Switch ON and your AC Power Switch in ACME.

[REDACTED]

[REDACTED]

76 04 40 CC Gemini 4, this is Houston CAP COM. If you're transmitting, we're not receiving, but we'd like for you to leave your Computer Switch ON, your AC Power Switch in ACME.

76 06 15 CC Gemini 4, Houston CAP COM. We'd like for you to leave your Computer Switch ON, your AC power supply in ACME.

76 06 45 C ..... Gemini 4, say again please.

76 06 50 CC Gemini, Houston CAP COM here. Say again.

76 06 55 C ..... Gemini, Houston. Gemini 4.

76 07 00 CC Gemini 4, this is Houston CAP COM. We would like for you to leave your Computer Switch ON and your AC Power Switch in ACME. Do you read?

76 07 20 CC Gemini 4, Houston CAP COM. Leave your Computer Switch ON and your AC Power Switch in ACME.

CARNARVON

76 34 11 CC Gemini 4, Carnarvon CAP COM.

76 34 17 C Hello Carnarvon, Gemini 4. How are you?

76 34 20 CC Roger. Is your Computer Switch in the ON position, your AC Power Switch in the ACME position?

76 34 26 C You want my Computer Switch to ON and the AC on ACME. Is that right?

76 34 28 CC That's affirmative.

76 34 32 C Okay.

76 34 37 CC What position are you in?

76 34 43 C I was in Computer Switch ON and AC power to IGS.

76 34 50 CC Roger, understand. What mode were you in?

76 35 03 CC What computer mode were you in?

76 35 06 C Carnarvon, Gemini 4. I'm in Prelaunch. I have my Computer ON/OFF Switch to OFF. The computer is still running. I have my Power Switch on IGS.

76 35 11 CC Okay.

76 35 33 CC Tell me again what happened when you went to OFF position.

[REDACTED]

~~CONFIDENTIAL~~

76 35 39 C Carnarvon, how do you read Gemini 4?  
76 35 41 CC Read you loud and clear. How me?  
76 35 46 CC Go ahead Gemini 4. Read you loud and clear.  
76 35 54 C Carnarvon, Gemini 4.  
76 35 56 CC Gemini 4, Carnarvon. Go.  
76 36 02 CC Gemini 4, Carnarvon CAP COM.  
76 36 12 C Hello Carnarvon, hello Carnarvon, Gemini 4.  
76 36 16 CC Gemini 4, Carnarvon CAP COM.  
76 36 22 CC Gemini 4, Carnarvon CAP COM.  
76 36 28 CC Gemini 4, Carnarvon CAP COM. Over.  
76 36 38 CC Gemini 4, Carnarvon CAP COM.  
76 36 51 CC Gemini 4, Carnarvon CAP COM.  
76 36 57 C Carnarvon, Gemini 4. Do you read?  
76 36 58 CC Roger. Loud and clear. How me?  
76 37 00 C Loud and clear.  
76 37 02 CC Okay. Tell me briefly what happened when you went to the OFF position over the mainland.  
76 37 08 C Roger. I went to the OFF position and nothing happened.  
76 37 11 CC Did you get a Malfunction Light?  
76 37 12 C What?  
76 37 14 CC Did you get a Malfunction Light?  
76 37 15 C No, I didn't. I got a Malfunction Light when I turned the AC power from IGS to ACME.  
76 37 22 CC Roger, understand.  
76 37 25 C ..... put it on ACME, the Computer Light keeps going on and off and once in a while the Malfunction Light is .....  
76 37 48 CC Gemini 4, Carnarvon. How do you read?

COASTAL SENTRY QUEBEC

76 52 09 CC Gemini 4, CSQ CAP COM. Do you have a Computer Malfunction Light?

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[REDACTED]

76 52 27 C [REDACTED], Gemini 4.

76 52 28 CC Roger. Do you have a Computer Malfunction Light on now?

76 52 36 C Negative, but I've sure got a funny combination of switches. I've got the ACME power on, I've got the Computer ON, and my Computer Light finally went off and finally my Malfunction Light went off.

76 52 49 CC Can you tell me when your Computer Light went off and your Malfunction Light went off?

76 52 53 C Okay. When we put AC Power Switch from IGS to ACME - this is not supposed to power the computer - the Computer Light went off. When the Malfunction Light came on, then the Computer Light came back on again and the Malfunction Light stayed on. Pretty soon both of them got dimmer ..... After 3 or 4 minutes, after we went to ACME power, the Computer Light went out. The Malfunction Light stayed on for about another 4 or 5 minutes, and finally it went out.

76 53 24 CC Roger.

HAWAII

76 59 53 CC Gemini 4, Hawaii.

77 00 06 C Station calling Gemini 4, say again.

77 00 09 CC Roger. Hawaii calling Gemini 4. Would like to remind you, you have a critical tape dump over Guaymas. Acquisition time of Guaymas: 20 25 03. Did you copy? Over.

77 00 32 C Negative. I did not copy.

77 00 34 CC Roger. A critical tape dump over Guaymas. Acquisition time: 20 25 03. Did you copy? Over.

77 00 50 C Roger. I think you said we are critical TM dump over Guaymas at 20:25.

77 00 56 CC Roger, roger.

77 01 00 C Who am I talking to?

77 01 03 CC This is Hawaii.

77 01 04 C Roger, Hawaii. Can you tell me how I'm doing on my electrical power.

[REDACTED]

~~CONFIDENTIAL~~

311

77 01 09 CC Roger. Stand by.  
77 01 17 CC Roger. Flight reports that you are doing great.  
77 01 22 C Above or below the predicted?  
77 01 31 CC You have not used as much as predicted and should be well ahead. You're fat by approximately 160.  
77 01 48 C Roger. Understand I've got 160 amps more than we had planned.  
77 01 54 CC That's affirmative.  
77 01 55 C Okay.  
77 02 02 C Have they got my computer figured out yet?  
77 02 07 CC Negative on that, Gemini 4. They're working on it at the present time.  
77 02 13 C Okay.

CALIFORNIA

77 08 40 CC Gemini 4, Houston CAP COM.  
77 08 44 C Go ahead Houston, Gemini 4.  
77 08 47 CC Roger. Gemini 4, we'd like for you to bring your AC Power Switch back to IGS and your Computer Switch ON, and we'd like for you to watch for a rise in the amperage to make sure it comes on.  
77 09 06 C Okay.  
77 09 07 CC And we want you to leave this ON till you've just about finished your pass over here. We want to check the computer memory.  
77 09 14 C Okay. Coming on now.

GUAYMAS

77 10 00 C This is Gemini 4. I've got the Malfunction Light on now, and it won't go out.  
77 10 07 CC Gemini 4, Guaymas CAP COM.  
77 10 12 C Roger, Guaymas. Gemini 4.

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**[REDACTED]**

77 10 13 CC Roger. I'm not receiving T/M. I'm getting it intermittently now.

77 10 33 CC Gemini 4, Guaymas CAP COM. We're standing by for tape dump.

77 10 39 C Roger. You want me to dump it, or can you dump it by command?

77 10 44 CC You'll have to dump it.

77 10 48 C Okay. Tape playback coming on CONTINUOUS.

77 10 55 C Guaymas CAP COM. Be advised that I can't get my Malfunction Light out on my computer now.

77 11 00 CC Roger.

77 11 19 CC Gemini 4, we're still not receiving dump.

77 11 23 C Okay. I've got the tape playback in CONTINUOUS.

77 11 35 CC Still no modulation, Gemini 4.

77 11 38 C Okay. Stand by.

77 11 09 C Guaymas, Gemini 4. All the switches and circuit breakers are ON. You ought to be getting it.

77 12 13 CC Roger. Stand by.

77 12 40 CC Gemini 4, Guaymas CAP COM.

77 12 43 C Go ahead.

77 12 44 CC Did you place the Telemetry Switch to REAL-TIME and DUMP-TIME?

77 12 50 C REAL-TIME and DELAYED-TIME?

77 12 52 CC Affirmative.

77 12 54 C Okay. We can't command anything on. Is that right?

77 12 59 CC I got it now, Gemini 4.

77 13 01 C Okay.

77 13 23 CC Gemini 4, Houston CAP COM.

77 13 28 CC Gemini 4, Houston CAP COM.

77 13 30 C Go ahead Houston, Gemini 4.

77 13 35 CC Roger. Would you check your Indicator Light Test Circuit Breaker and turn it OFF and see if that turns off your Mal light. Over on your left panel.

77 13 59 CC You know the circuit breaker I mean, Jim?

77 14 06 CC Gemini 4, Houston CAP COM.

**[REDACTED]**

[REDACTED]

77 14 20 CC Gemini 4, Houston CAP COM.

77 14 38 CC Gemini 4, Houston CAP COM.

77 14 40 C Go ahead Houston, Gemini 4. I'm reading you loud and clear.

77 14 42 CC Roger. Turn off your Indicator Light Test Circuit Breaker over on your left circuit breaker panel.

77 14 49 C Roger, I already have Gus, and it doesn't turn off the light.

77 14 52 CC Still doesn't do any good?

77 14 54 C Nope.

77 14 56 CC Will you turn your Quantity Read ON for 10 seconds?

77 15 35 CC Jim, we show that the memory is okay, but we're showing about the same thing that you are otherwise.

77 15 42 C Okay. Let me cycle the computer mode up to, say, Catch-Up and ..... to Prelaunch.

77 15 50 CC Okay.

77 16 15 C That doesn't seem to do any good.

77 16 23 CC You have the Computer Switch ON and your Power Switch on IGS. Right?

77 16 27 C Roger. I have the Computer Switch ON and the Power Switch on IGS. Let me switch the Computer Switch OFF and back ON.

77 16 43 CC Jim, what I told you about your memory isn't correct. We're not able to check your memory this pass.

77 16 49 C Okay. Be advised that even when we turn off the Computer Operate Switch, I still have the Malfunction Light on.

77 16 56 CC Roger. How about going to Catch-Up and hitting START COMP.

77 17 06 C Okay.

77 17 12 CC And nothing happens when you hit your RESET button, huh?

77 17 14 C Yes, the light goes out and then comes back on in a couple of seconds - just like there's a malfunction.

77 17 18 CC Okay. Have you hit the START COMP?

77 17 24 C Yes, that just turned the Computer Light on.

[REDACTED]

[REDACTED]

77 17 44 CC Okay, Jim. Go ahead and put your AC Power Switch to ACME. Leave your Computer Switch ON.

77 17 49 C Leave the Computer Switch ON. Okay.

77 17 52 CC We'll work on it. We'll give you an answer when we get one.

77 17 56 C Okay. Be advised that when we got to ACME the ..... for just a short time, very dimly. Then it goes out.

77 18 05 CC Say that again.

77 18 07 C .....

Note: Voice tape from pass at Tananarive during this period is not available at this time. Tananarive COM TECH reported to Houston CAP COM at 77 54 27 that he had contacted Gemini 4 and the crew had placed the Tape Playback Switch to COMMAND and the T/M Switch to COMMAND. No other report from Tananarive.

COASTAL SENTRY QUEBEC

78 22 09 CC Gemini 4, CSQ. Be advised we do not have a valid oral temp on the Command Pilot.

78 22 22 CC Are you prepared for the Aero-Med Data Pass this station?

78 22 41 CC Gemini 4, CSQ. Do you copy?

78 22 56 CC Gemini 4, CSQ. Do you copy?

78 22 59 C Roger, CSQ. You want an Aero-Med no. 1 Pass on the Pilot. Right?

78 23 04 CC On the Command Pilot. Skip the temperature and just give us the blood pressure.

78 23 10 C Okay.

78 23 16 CC Is the Pilot awake?

78 23 18 C Roger. He is.

78 23 19 CC Would you give me your status on main batteries?

78 23 22 C Roger. Just a minute.

78 23 45 CC Okay. We've got full-scale on the cuff.

78 24 00 CC Turn the Quantity Read Switch OFF.

[REDACTED]



[REDACTED]

78 24 35 CC Gemini 4 Pilot, CSQ. Do you copy?  
78 24 42 P Go ahead. This is the Pilot.  
78 24 44 CC Roger. What is the status on your main batteries?  
78 24 48 P Roger.  
78 24 55 CC Roger. Advise the Command Pilot that the first blood pressure is good. Start exercise on your mark.

78 25 11 P The main batteries are all 9 and 22 1/2.  
78 25 17 P MARK!  
78 25 23 CC What's your status for the 63 Rev?  
78 25 27 P Our status is GO.  
78 25 29 CC Roger. We are GO on the ground also. I am going to update your TR clock with the 63-1 TR.  
78 25 38 P Roger. I read my battery readout back to you as 9 and 22.5.  
78 25 44 CC Roger. Got that.  
78 25 47 P And the adapters are all reading around 2 and 24 1/2.  
78 25 54 CC You say amps reading 2 and voltage 22.5?  
78 25 58 P Roger. About 2 1/2.  
78 26 00 CC Roger.  
78 26 03 CC Be advised that Houston does not know yet what the problem is on the computer. You will be advised later.

78 26 10 P I understand. Thank you.  
78 26 12 CC Okay. We got a full cuff on the blood pressure.  
78 26 28 CC Your 63-1 GMIRC time I've got if you're prepared to copy.

78 26 40 P Roger. Go ahead.  
78 26 41 CC Roger. 63-1: 16 hours 56 minutes 01 second.  
78 26 50 P Roger. 63-1 is 16 56 01.  
78 26 54 CC Roger. And the second blood pressure is good.  
78 27 07 CC Has the Command Pilot been drinking water?

[REDACTED]



78 27 10 C I guess I've been drinking water, and I've had a meal. As a matter of fact, I'm half way through a meal. I started one, and we got involved in an experiment. I'll finish it. If you'll stand by I'll try to .....

78 27 25 P He's half way through - getting rid of half a meal.

78 27 29 CC He said he's half way through one meal?

78 27 31 P That's affirmative.

78 27 35 CC How much water?

78 27 37 C I've had about 10 gulps - 10 gulps in the last 3 hours.

78 27 45 CC Roger. Copy.

78 27 50 CC Okay. I have some flight plan items for you when you're prepared to copy.

78 27 55 P Roger. Go ahead.

78 27 57 CC Roger. Experiment MSC-2 and -3 ON and OFF are pre-scheduled times.

78 28 07 P Roger. Do you have our ..... on that?

78 28 09 CC Roger. The MSC-2 and -3 small-end-forward start at 23 hours 49 minutes. End at 15 minutes on Rev 52.

78 28 28 P You were blocked out on that last transmission. Say again, please.

78 28 31 CC Roger. End of experiment - end of MSC-2 and -3, 15 minutes the next day, Rev 52.

78 28 49 CC Did you copy?

HAWAII

78 33 10 CC Gemini 4, Hawaii CAP COM.

78 33 13 C Hello Hawaii, Gemini 4.

78 33 15 CC Roger. I would like to complete your Flight Plan update. I'd like to confirm you got Item 2, MSC-2 and -3. Are you ready to copy?

78 33 31 C Roger. We're ready to copy but speak slowly. You're breaking up.



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- 78 33 36 CC Roger. Item 2: MSC-2 and -3. JEF pass start at 23:49 Eulu. End at 00:15. Rev 52. Did you copy? Over.
- 78 35 19 P Affirmative. MSC-2 and -3. Small-end-forward 23:49. End at 00:15. Rev 52.
- 78 35 26 CC Roger. D-8 Experiment: Check no. 1. Start at 23:57. Check no. 2. Start at 01:30. Item no. 4, Onboard Map Update: Rev 50, ascending node 102° East at G.m.t. of 21:26. Item no. 5: if possible, S-6 photos of tropical storm off the west coast of Mexico. Tropical storm Victoria. Item no. 6: Delete Apollo Landmark Run no. 7. Area is too cloudy.. Did you copy? Over.
- 78 35 59 P Roger. I copied all the information.
- 78 36 01 CC Roger. You look good here on the ground, Gemini 4.
- 78 36 05 C You look good up here also.
- 78 36 07 CC Roger. Hawaii CAP COM standing by.
- 78 36 09 C Roger.

GUAYMAS

- 78 44 16 CC Gemini 4, Guaymas CAP COM
- 78 44 20 C Go ahead Guaymas, Gemini 4.
- 78 44 23 CC Roger. All systems look green. Flight would like you to think about where you plan on storing the equipment. They'd like to come up with a CG. So, in the next few hours, if you could, we'd like you to think about it and maybe tell us where you're going to put all those things.
- 78 44 39 C Okay. We've already thought about it. We thought about it quite early in the ball game. We're going to put the event pack back down in the wheel well - the foot well on the right-hand side, bolted back down where it was for launch.
- 78 44 55 CC Rog.
- 78 44 56 C We're going to take the cable and Ed's going to hold it between his legs, about level with the bottom of the seat.
- 78 45 06 CC Rog.

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78 45 08 C We're going to put the gun back in our center food box.

78 45 14 CC Roger.

78 45 16 C We're ready to put the film in the center food box.

78 45 20 CC Say again?

78 45 21 C We're going to put the film - the camera film -

78 45 25 CC Roger.

78 45 27 C We're going to put the cameras in the left-hand food box.

78 45 31 CC Roger.

78 45 33 C We're going to put the sextant in the middle food box.

78 45 36 CC Roger.

78 45 38 C And all the refuse is going in the right-hand food box.

78 45 43 CC Roger.

78 45 44 C And I think that takes care of it.

78 45 48 CC Roger. We got it.

78 45 49 C Okay. The refuse that doesn't fit in the right-hand food box will go either in the left-hand food box or the side-wall boxes where we've got the film.

78 45 58 CC Roger.

78 46 02 C The sleeves off Ed's suit and extra thick garment on one of my legs will be stowed in my foot well on the left side.

78 46 12 CC Roger.

78 46 13 C And I think that takes care of it.

78 46 14 CC Sounds like you're kind of crowded up there.

78 46 17 C It's pretty deep. I can just barely see out of the window.

78 46 21 CC We'll see you tomorrow.

78 46 23 C Okay.

78 46 37 CC Gemini 4, Flight would like to know how much that refuse weighs.

78 46 43 C About 3000 pounds!

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78 46 47 CC I'll pass that along.

78 46 50 C ..... the packages that the food came in, the defecation bags, and a lot of waste paper like that. So it shouldn't be too heavy.

78 47 01 CC Roger.

COASTAL SENTRY QUEBEC

79 58 24 CC Gemini 4, CSQ. Do you copy?

79 58 35 C .....

79 58 37 CC Roger. Houston requests we pass the following information to you regarding the computer problem. Do you copy?

79 58 47 C Roger. Stand by one, please.

79 59 03 C Roger. Go ahead.

79 59 05 CC Roger. They report that in ground testing on spacecraft GT-2 and GT-3 this same problem was encountered and it apparently was caused by the computer being too cold. Houston requests you to take the following action. Do you copy?

79 59 23 C Roger, copy and standing by.

79 59 25 CC Roger. Computer Switch to OFF. AC Power Switch to IGS. Then Computer Switch to ON. Do you copy?

79 59 39 C Roger. Computer OFF. IGS to ON and computer ON.

79 59 44 CC Roger. After about 20 minutes, start punching the Malfunction Light to see if it will reset and extinguish.

79 59 53 C Roger. Then wait 20 minutes to see if it will reset and extinguish.

79 59 57 CC Roger.

80 00 16 CC Gemini 4. If the Malfunction Light does not reset the first time, keep trying at intervals of 5 to 10 minutes.

80 00 27 C Roger. If it doesn't reset the first time, try at intervals of 5 to 10 minutes.

80 00 30 CC Roger.

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80 00 36 C If we get that thing operating again, do you want us to leave it to operate.

80 00 39 CC Roger. That will be left on for the rest of the flight.

80 00 43 C Sounds like a good idea to me.

80 00 46 CC Say again.

80 00 47 C I said that sounds like a pretty good idea to me.

80 00 49 CC Roger. This is an attempt to get the computer warmed up and also recharge the ACPU which is probably run down at this time.

80 01 02 C Roger. ....

80 01 05 CC Roger. All systems look good on the ground here. That's all we have unless you have something else to report.

80 01 11 C Report. A negative on the sighting of tropical storm Victoria ..... as when we passed over we were a little bit west of it, and there wasn't a good picture.

80 01 25 CC Roger, understand.

80 01 27 P ..... the Command Pilot.

80 01 33 CC Say again about Command Pilot.

80 01 36 P Command Pilot is retiring for the evening.

80 01 39 CC Roger.

80 01 41 C Good night.

80 01 43 CC Roger.

80 01 46 CC We'll be seeing you next pass.

80 01 50 C Roger. Thank you very much.

80 01 52 CC Roger.

HAWAII

80 09 20 CC Gemini 4, Hawaii CAP COM.

80 09 24 P Go ahead Hawaii, Gemini 4.

80 09 26 CC Roger. We would like to find out if you tried the procedure that was given you over CSQ on your computer.

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[REDACTED]

80 09 32 P That's affirmative. The procedure was given to me 10 minutes ago. I have 10 more minutes to wait until I try to reset.

80 09 44 CC Roger, Gemini 4. We heard that.

80 10 10 P How's everything down there?

80 10 13 CC You're looking good from here, Gemini 4.

80 10 17 P Roger. All is fine up here.

80 10 20 CC Roger.

ROSE KNOT VICTOR

80 28 14 CC Gemini 4, RKV CAP COM.

80 28 18 P Go ahead RKV, Gemini 4.

80 28 20 CC Roger. We're showing an indication here on the ground of the computer being in a Prelaunch Mode. We're also showing a malfunction indication. How does it look up there?

80 28 30 P That's affirmative, and I've been unable to reset it.

80 28 34 CC Roger. Flight advises that it may take a little while. Continue attempting to reset during this Rev.

80 28 42 P Roger. Will do.

80 28 52 CC All your systems look good here on the ground. We'll stand by for the rest of this pass.

80 28 58 P Roger. They're all good up here, also.

80 29 02 CC Roger.

COASTAL SENTRY QUEBEC

81 29 49 CC Gemini 4, CSQ CAP COM. Do you copy?

81 30 05 P Go ahead CSQ, Gemini 4.

81 30 09 CC Roger. Flight advises it may take several orbits for your computer to come on line. Would like for you to leave the computer at the Prelaunch Mode and ground will advise you later.

81 30 28 P Roger. I understand leave the computer in Prelaunch Mode.

[REDACTED]

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81 30 32 CC Roger. Ground will follow trend data and advise you later.

81 30 36 P Roger, I understand.

81 30 39 CC Be advised also that you have a critical tape dump over Hawaii, and also a Medical Pass.

81 30 48 P Roger, I understand.

81 30 50 CC That's in about 7 or 8 minutes.

81 30 53 P Roger.

81 30 59 CC Also, we have the new computations on your orbit. Perigee 85.3 and apogee 139, with a 3-day lifetime.

81 31 15 P ..... Roger, understand. 85 by 139.

81 31 20 CC Roger.

81 31 35 CC Gemini 4, give us your Quantity Read Switch for about 15 seconds.

81 31 40 C Roger. Switch is on READ.

81 31 41 CC Roger. We've got it.

81 32 05 CC Okay, we've got your quantity.

81 32 09 C Quantity OFF.

81 32 20 CC All systems look GO down here.

81 32 21 C They're all GO up here, too.

81 32 23 CC Roger.

81 33 40 CC Gemini 4, CSQ. That's all we have. We're standing by.

81 33 43 C Roger CSQ. Thank you very much.

81 33 47 CC Roger.

HAWAII

81 38 56 CC Gemini 4, Hawaii CAP COM. We have your temperature. You can start your blood pressure and stand by for our Surgeon.

81 39 10 P Roger, Gemini 4.

81 39 42 S Gemini 4, Hawaii Surgeon.

81 39 47 P Go ahead Hawaii, Gemini 4.

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[REDACTED]

81 39 48 S We're having some difficulty recording blood pressure on the ground, but our data is being remoted to Houston. So let's try it once more.

81 39 57 P Roger, pumping it up again.

81 40 08 S Full-scale.

81 40 32 S We have a valid blood pressure. Standing by for exercise on your mark.

81 40 42 P MARK!

81 41 51 S Gemini 4, Hawaii Surgeon. Be advised we had telemetry dropout, and may have missed your second blood pressure. Have you transmitted yet?

81 42 01 P Roger, I have transmitted.

81 42 03 S Roger. Would you give us one more, please?

81 42 06 P Roger. Coming again.

81 42 20 S Cuff is full-scale.

81 42 29 S Looks like this will be a good one. Standing by for your food, water, and sleep report.

81 42 42 P Roger. I've started on the meal 1 of day 4. I've had about 8 swallows of water. I slept about an hour and a half in the last 4 hours' sleep period.

81 42 58 S Roger. Was it good sleep?

81 43 01 P It was good sound sleep and I don't feel that I require anymore.

81 43 06 S Roger. Thank you, Gemini 4. Back over to Hawaii CAP COM.

81 43 10 P Rog.

81 43 13 CC Gemini 4, Hawaii CAP COM. I have a D-9 update for you when you're ready to copy.

81 43 31 CC Gemini 4, Hawaii CAP COM.

81 43 40 CC Gemini 4, Hawaii CAP COM.

81 43 44 P Go ahead Hawaii, Gemini 4.

81 43 46 CC Roger. I have a D-9 update for you whenever you're ready to copy.

81 43 51 P Roger, ready to go.

81 43 53 CC Apollo Run 4. Your start time 00 02 45. Stop time 00 03 21. Did you copy? Over.

[REDACTED]

[REDACTED]

81 44 15 P Roger. Understand Apollo Run 4 is 00 02 45,  
00 03 21.

81 44 20 CC That's it.

81 44 37 CC Gemini 4, Hawaii CAP COM.

81 44 41 P Go ahead Hawaii. Gemini 4.

81 44 43 CC Roger. Those times I gave you were in error. That  
is 02 hours 45 minutes for your start time, 03 hours  
21 minutes for your stop time.

81 44 54 P Roger. 02:45 and 03:21. That - I copied them also.

81 44 59 CC Roger.

81 45 00 P Be advised my last MSC Pass through the anomaly, I  
didn't feel that I had a good yaw reference small-  
end-forward on this run to be sure we have a good  
run. I'll do a modified version of Apollo no. 4.

81 45 17 CC Roger, understand.

81 45 21 CC This is Hawaii CAP COM. Standing by. Everything  
looks good on the ground.

81 45 41 CC Gemini 4, Hawaii CAP COM. Be advised that your  
coolant temperatures are coming up, and we do feel  
optimistic about your computer problem.

81 45 52 CC Did you copy, Gemini 4?

82 01 35 CC Gemini 4, Gemini 4, RKV CAP COM.

82 01 45 P Roger RKV, Gemini 4.

82 01 48 CC Roger. We're showing the pumps ON in both loops on  
the ground. Is that correct?

82 01 55 P That's affirmative. I turned the secondary pump  
ON .....

82 02 08 CC Roger.

82 02 10 P Do you have any .....

82 02 12 CC Say again.

82 02 16 P Do you have any .....

82 02 28 CC Do not understand. Say again, please.

82 02 31 P Roger. Hawaii was trying to give me some type of  
update concerning the fuel consumed when we had LOS.  
Do you have that message for me?

[REDACTED]

[REDACTED]

82 02 40 CC Roger. We sure do. Indications are that the system is beginning to warm up somewhat and we feel that the computer will come on before long.

82 02 56 CC Would you turn the secondary loop back OFF, please.

82 03 00 P Say again, please.

82 03 02 CC Roger. Would you turn the secondary loop OFF again, please.

82 03 08 P Secondary loop OFF.

82 03 11 CC Roger.

82 03 12 CC I have a Pegasus update for you.

82 03 14 P Roger. Ready to copy.

82 03 16 CC Roger. That's Pegasus will be on the horizon. Line of flight near CSQ, your 53 Rev. If you track pitch, you will be at 90° pitch-up. G.m.t. 02:28. Slant range, 268 nautical miles. Do you copy?

82 03 45 P Roger, understand. Pegasus, my 53rd Rev, near the CSQ area. 090 vertical at 02:28.

82 03 55 CC Roger, a slant range 268 nautical miles.

82 03 58 P Roger, 268 nautical miles.

82 04 05 CC We're showing approximately 950 pounds on your oxygen. Would you turn the Repress ON and run that Primary oxygen down a ways?

82 04 16 P Roger.

82 04 22 CC Will you bring it on down to about 850?

82 04 31 P I'd rather not right now. The Command Pilot is sleeping, and we don't have him suited up in glove and helmet.

82 04 51 CC Roger. We concur.

82 05 03 CC Gemini 4, would you attempt another reset on that computer malfunction?

82 05 12 P Set's on.

82 05 15 CC Roger.

82 05 36 CC This is RKV standing by. We have about 3 minutes left.

82 05 44 CC Gemini 4, RKV standing by. We have about 3 minutes left.

[REDACTED]

[REDACTED]

82 05 47 P Roger RTN. Thank you.  
 82 08 10 P RTN, this is Gemini 4.  
 82 08 21 CC Gemini 4, RTN.  
 82 08 23 P Roger. Looks like the whole .....  
 82 08 30 CC Roger, thank you. We saw you during the last pass.

COASTAL SENTRY QUEBEC

83 02 45 CC Gemini 4, CSQ CAP COM. Be advised if you're tracking Pegasus, do not exceed 45° pitch. You've got a critical tape dump. If you are tracking Pegasus, please go to critical tape dump attitude.

83 03 11 CC Please advise.

83 03 25 CC Gemini 4, CSQ. Do you copy?

83 03 36 CC Gemini 4, CSQ. Do you copy?

83 03 39 C CSQ, Gemini 4.

83 03 41 CC Are you tracking Pegasus?

83 03 43 C Trying to find it!

83 03 45 CC Okay. We've got a critical tape dump. Are you in attitude?

83 03 50 C It would be a little hard to track Pegasus and be in attitude, which do you want me to do?

83 03 53 CC Don't exceed 45° pitch. We want this tape dump.

83 03 57 C Roger, understand, Art. To track data at this pass, I've got to get up to 90.

83 04 03 CC Okay. We want the tape dump, so omit Pegasus.

83 04 08 C Roger.

83 04 09 CC Let me know when you're in attitude.

83 04 11 C Roger.

83 04 22 C Gemini 4 is in attitude.

83 04 24 CC Roger.

83 04 30 CC I have an Orbital Map update for you.

83 04 34 C Roger. Let me know when you dump the tape and I'll go back to track it.

[REDACTED]

83 04 38 CC Roger. We will do.  
 83 05 00 CC Gemini 4, CSQ. Had you spotted Pegasus?  
 83 05 07 C Negative. I'm trying to.  
 83 05 11 C As soon as I get my tape dumped I'll get back up.  
 83 05 16 CC Roger, will do.  
 83 05 18 CC Okay, your map update: ascending node Rev 53.  
 longitude 35° East at 01 hours 51 minutes.  
 83 05 32 C Roger, understand. 53rd Rev, longitude 35° East  
 at 01:51.  
 83 05 35 CC Roger. Would you reset your Malfunction Light?  
 83 05 42 C Roger. I have tried to reset it quite a few times  
 and it hasn't been successful.  
 83 05 48 CC Roger. I also have some CLA and PLA updates for you.  
 Are you prepared to copy?  
 83 06 02 CC I'll give you just one and let RKV pass the rest and  
 give you a chance to go back to track.  
 83 06 09 C Roger, prepared.  
 83 06 11 CC Roger. 54-DELTA: 86. 01+49. 03 02 14. 10+36.  
 P Roger, got it.  
 83 08 03 CC Okay. Go ahead, Gemini 4. Resume track to Pegasus.  
 83 08 11 CC Gemini 4, CSQ. You copy?  
 83 08 18 CC Gemini 4, CSQ. Do you copy?  
 84 36 57 CC Gemini 4, CSQ. Do you copy?  
 84 37 02 P Roger, CSQ. Gemini reads you five square.  
 84 37 04 CC Roger. We have some PLA and CLA data, will you  
 prepare to copy?  
 84 37 09 P Roger.  
 84 37 12 CC Roger. Area 55-DELTA: 82. 04 34 10. 9+57.  
 Area 55-3: split burn, 55 aft, 109 forward. 1+31.  
 2+17. 05 15 40. 02+33. 08+47. How's it going?  
 84 38 01 P Roger, we copied.  
 84 38 04 CC You copy that last?  
 84 38 05 P Roger.  
 84 38 06 CC Roger. Area 56-DELTA: 81. 1+42. 06 06 36. 5+11.  
 13+39. Got that one?

[REDACTED]

84 31 31 P Roger.

84 31 31 CC 57-BRAVO: split burn, 19 forward, 14 aft. 1+31. 2+18. 07 35. 7+42. Area BRAVO. 17-BRAVO: split burn, 19 forward, 103 aft. 1. 1+31. 2+10. 08 27 38. 7+22. Do you copy?

84 39 29 P Roger.

84 39 27 CC Roger. Area 57-2: 86. 1+49. 07 42 52. 7+12. 11-52. 58-2: 94. 1+59. 09 16 42. 5+49. 10+41. Area 58-BRAVO: split burn, 55 forward, 51 aft. 1+31. 1+54. 10 00 10. 9+03. Area 55-2: 104. 2+12. 10 50 54. 4+26. 9+45. Do you copy?

84 40 55 P Roger.

84 40 56 CC Roger. We're reading 960 on your primary O<sub>2</sub> pressure, you might watch that.

84 41 00 P Roger, I'll try to hold that. Could you give me 55-DELTA again? You were a little garbled.

84 41 04 CC Roger, first reading. 55-DELTA: 82. 1+44. 04 34 10. 9+57.

84 41 20 P Roger, then the next one was 55-3?

84 41 24 CC The last one: 55-DELTA. 55-DELTA. Do you copy? Gemini 4, CSQ. Did you copy that?

TEXAS

84 43 16 P The light-weight headsets are not comfortable to wear. They have a good generating mark to them.

84 46 46 CC Gemini 4, Houston CAP COM. Over.

84 47 01 C Go ahead Houston, Gemini 4.

84 47 04 CC Gemini 4, this is Houston. We would like information on what D-9 has been accomplished.

84 47 14 C Roger, understand. You'd like information on what D-9 Experiment has been accomplished.

84 47 19 CC That's affirmative. The run numbers that you have completed and also what stars you are using for the Apollo D-9.

[REDACTED]

84 47 26 C Roger. Stand by one, please. On the Apollo D-9 Run 4 we had Antares and Scorpii. And we made a long run on that one and a short one. We made also a run on Antares and the third order magnitude star in Scorpio. We made no Apollo star to booster sightings. We have made three Air Force D-9 runs. Houston, Gemini 4. Are you reading?

84 48 31 CC This is Houston. Reading you loud and clear and understand you have made three Air Force D-9's, an Apollo no. 4 on Antares and one of the stars in Scorpio, a long and a short run. You got a long Antares and the third magnitude on Scorpio. Right?

84 48 47 C Roger. The two stars in Scorpio are Scorpii and Antares. Those are the ones about 21° apart.

84 48 55 CC Roger, I copied those.

84 48 58 C And the Air Force D-9 run - the way they're laid out is difficult to run. We got some runs though, in different order and accomplished basically the information that they wanted in D-9.

84 49 12 CC Understand. You basically accomplished what the Air Force wanted. We'll analyze this in Flight Plan and try to get you a final update for D-9.

84 49 21 C Roger, understand. Thank you.

84 49 33 CC Gemini 4, this is Houston. Did you have any luck tracking Pegasus B on that CSQ pass?

84 49 39 C Negative. I had to come down for that tape dump and when I went back up I didn't have any luck. The sun was just about 90° also. And there's a lot of stuff on the outside of my window which makes a lot of reflection. Very difficult to see.

84 49 56 CC Roger. On your fuel status: latest analysis looks like we're just going to have enough to complete the Flight Plan and still keep our gage in accuracy past there. Try to be as judicious as possible with it now.

84 50 15 C In Horizon Scanners with Pulse only.

84 50 21 CC I didn't copy that.

84 52 31 CC Gemini 4, Houston CAP COM. Over.

84 52 47 CC Gemini 4, Houston CAP COM. If you read, give me your latest relative humidity.

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[REDACTED]

84 53 04 C Houston, Gemini 4. The latest humidity reading is 79 dry bulb, 62 wet bulb.

84 53 11 CC Say again your wet bulb.

84 53 14 C 62, 62.

84 53 16 CC Roger, 79 dry, 62 wet. We'll compute it, thank you.

84 53 20 C Still staying around 62, 63 percent.

84 53 23 CC Roger.

84 53 26 C We've been going with gloves off and visor open, now, for the last day or so.

84 53 34 CC Understand that. Are you trying to get about one reading per Rev and put it in your log?

84 53 41 C We're keeping them up as the experiments display.

84 53 46 CC Okay, thank you. Houston out.

ROSE KNOT VICTOR

85 10 35 CC Gemini 4, Gemini 4, this is RKV CAP COM.

85 10 40 P Go ahead RKV, Gemini 4.

85 10 49 CC Gemini 4, Gemini 4, RKV CAP COM.

85 10 53 P Go ahead, RKV.

85 10 55 CC Roger. We want to take a check on your computer malfunction during this pass. Would like to have you depress it and hold it for 5 seconds. Give me a mark at the beginning and the end.

85 11 10 P Roger, will do. MARK!

85 11 18 P MARK!

85 11 23 CC Roger. Thank you.

85 11 28 CC We'll be standing by on the next pass for Med Type 1 on the Command Pilot if he is awake. The time of that will be approximately 05 hours 58 minutes.

85 11 42 P Roger, 05:58.

85 11 57 P Did you get my mark?

85 12 00 CC Gemini 4, RKV.

[REDACTED]

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[REDACTED]



[REDACTED]

85 12 02 P You might find out if they want to get a Type 1 Medical Pass on the Pilot yet. I'll be going to sleep probably in a little bit.

85 12 09 CC Roger. I'll check right now.

85 12 49 CC Gemini 4, this is RKV. That's affirmative. If the Command Pilot is not awake we'll take a Type 1 on the Pilot.

85 12 56 P Roger. Do you want that the next Rev or now?

85 13 00 CC Roger. That will be on the next Rev.

85 13 02 P The Pilot .....

85 13 06 CC Roger. Do you want to give us a blood pressure on this one?

85 13 09 P Roger. I'll start a temperature for you and then work on a blood pressure.

85 13 13 CC Roger.

85 13 25 S You're full-scale.

85 14 02 S That's a good blood pressure, give your exercises.

85 14 16 P MARK!

85 14 41 S You're full-scale.

85 15 19 S That's a good blood pressure. Could you give me your report?

85 15 23 P Roger. I've finished meal 1 of day 4. I've had 6 swallows of water, and I'll be going to bed here probably in the next hour or two ..... since last report.

85 15 38 S RKV Surgeon. Roger. Good report, thank you.

85 15 40 P Roger. See you next Rev.

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TEXAS

85 34 50 CC Gemini 4, Houston CAP COM. Over.

85 35 01 C Hello Houston, Gemini 4.

85 35 04 CC Gemini 4, this is Houston CAP COM. Put your Tape Playback Switch to RESET, please.

85 35 10 C Roger, going to RESET.

[REDACTED]

[REDACTED]

85 35 13 CC Roger. I'd like to give you a little briefing  
what we came up with for the terminal reentry maneu-  
ver. Are you copying me clearly?

85 35 34 C .....

85 35 36 CC Okay. We looked at all the possible possibilities  
down here. About the worst case we could come up  
with is your 3-sigma error miss distance - worst  
case 70 nautical miles. That's 70. What we would  
like to have you do is an OAMS retro maneuver; then  
we will have a manual retrofire, of course, with no  
computer. We want a zero-lift, rolling reentry.  
That's zero-lift, rolling reentry. The reason for  
the decision on the rolling versus a 90-90 bank is  
that there's less chance of dispersions. They will  
tend to equalize out. We feel we can have a faster  
recovery that way. Also, doing it that way we can  
get an IP prior to your blackout and you should pull  
about 8g's on that reentry. Do you copy?

85 36 43 C Roger. Understand a maximum 3-sigma miss distance  
of 70 nautical miles, an OAMS retro, a manual retro-  
fire, a zero-lift rolling, I got a faster recovery,  
be able to plot point of impact.

85 37 10 CC Roger. You got all of that. Now this zero-lift  
rolling only applies to your terminal maneuvers.  
All your CLA's and PLA's onboard are still the 60°  
bank.

85 37 22 C Roger, understand.

85 37 25 CC Okay. I have a D-9 update for you. It's a Run  
no. 1, Revolution 55 and 56. Start time 05 48 45,  
use stars of opportunity.

85 37 50 C Roger. Rev 55, and no. 1, start time 05 48 55 and  
say the last part.

85 37 57 CC That start time is 05 48 45, use stars of opportunity.

85 38 04 C Stars of opportunity?

85 38 17 CC Gemini 4, I did not get your last transmission. I  
say again, use stars of opportunity.

85 38 24 C Roger, stars of opportunity.

85 38 26 CC Okay, do you have any questions you would like the  
ground to answer with regards to your reentry?

[REDACTED]

85 38 48 CC Gemini 4, this is Houston. We passed up this re-entry so you two could talk it over and come back later on if you have any questions. For your information, the 63-1 weather forecast looks like about 3- to 4-foot waves with 18 knots of wind, visibility and ceiling will be good.

85 39 10 C Roger, understand. Was that an Apollo 9 or D-9 for that Rev 55?

85 39 17 CC That is a D-9 Run no. 1. Stand by and I'll get further clarification.

85 39 34 CC Gemini 4, this is Houston. That is not Apollo, it's just straight D-9.

85 39 39 C All right, D-9.

85 39 41 CC And that's all I have from Houston. Standing by.

85 39 45 C .....

ROSE KNOT VICTOR

86 43 23 CC Gemini 4, Gemini 4, Gemini 4, this is RKV CAP COM.

86 43 30 P Go ahead RKV, Gemini 4.

86 43 32 CC Roger. We have a valid temperature. Would you pump up your blood pressure?

86 43 37 P Pump.

86 44 04 S Gemini 4, this is RKV Surgeon. Would you give us the blood - there it goes. Blood pressure is going up.

86 44 08 P Roger.

86 44 39 S All right, Gemini 4. We have your blood pressure. Give me a mark on your exercise.

86 44 58 P MARK! .....

86 45 21 P MARK!

86 46 16 S Okay, your cuff is full-scale.

86 46 38 S Gemini 4, we have a good blood pressure. Standing by for your food, water, and sleep report.

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86 47 10 C Roger. Gemini 4 here. This is the Command Pilot. I just finished about a 5 and a half hour nap of which the last 3 hours of sleep were quite good. The first 2 and a half were rather fitful. I'm in the process of eating meal 2 of day 4 and I haven't had but about 5 swallows of water since I woke up but I plan on having about another 10 or 15 before I finish, along with the meal.

86 47 38 S Real fine, thank you, Gemini 4. RKV Surgeon out.

86 47 43 P Roger.

86 47 49 CC Gemini 4, RKV CAP COM.

86 47 52 C Go ahead RKV CAP COM, Gemini 4.

86 47 55 CC Roger. Would you give us Quantity Read for 15 seconds?

86 47 59 P Roger.

86 48 18 CC Roger. That's good on the quantity read.

86 48 20 P The switch is OFF. Be advised I dumped the pressure down to about 880 .....

86 48 26 CC Roger.

87 38 22 C The coating on the gingerbread wrappers. It tastes very waxy as it ..... lined the inside of my mouth. It is something comparable to what was on the sandwiches. I put one inside my mouth after I had eaten a little bit. .... feels like somebody spread lard all over your tongue.

88 16 22 CC Gemini 4, RKV CAP COM.

88 16 29 C Hello RKV. Gemini 4.

88 16 31 CC Roger. I have two Apollo Landmark updates for you. Are you prepared to copy?

88 16 38 C Just a moment.

88 17 05 C Go ahead RKV. We copy.

88 17 08 CC Okay. Roger. It will be for Rev 57. Sequence no. 16, at a G.m.t. of 08 hours 11 minutes. Yaw 12°, pitch 30°, use 16-mm camera. Rev 58, sequence 12, G.m.t. 09 hours 36 minutes, yaw 3°, pitch 30°, use 16-mm camera. Do you copy?

87 17 47 C Roger. Rev 57, Sequence 16, 08:11, yaw 12°, pitch 30°, 16-mm camera. Rev 58, sequence 12, 09:36, yaw 3°, pitch 30, using 16-mm camera.

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[REDACTED]

- 88 18 07 CC That's affirmative. We also have the computer test for you. Are you prepared to copy?
- 88 18 12 C Go ahead.
- 88 18 14 CC Okay. We want to check the computer in all modes. There will be three steps to this check. First step: put 10 ft/sec in all IVI windows. Then push the Malfunction Reset. Then press the Start Comp and watch for a Computer Running Light indication. You will do this in all modes. If you do not - I repeat - do not get an indication of computer running, then you will perform another test. In this other test, you will check in all modes. You will turn the computer OFF for 2 seconds - the Computer power OFF for 2 seconds. After the computer has been re-powered, repress the manual Malfunction Reset and also Start Comp. If you get a Computer Running Light in any mode, discontinue this 2-second power off. Do you copy?
- 88 18 14 C Roger. Computer check of all modes. Insert 10 ft/sec in all the IVI's, push the Malfunction Light, and push the Start Comp button. .... is .... turn the computer OFF for 2 seconds, repower and depress the Malfunction Light. If we get those .... at any time, well, we should discontinue the test.
- 88 19 55 CC Roger. That's affirmative. We're standing by here for you to start it. If you can't finish it over our site, go ahead and report the results to the Canary Islands.
- 88 20 02 C Okay. We've done these things already without any results, but I'll go ahead and go over them again.
- 88 20 08 CC Okay.
- 88 20 22 CC Flight advises that if you do get a Running Light indication during the second set of tests, then go back to the first set and repeat that in each mode.
- 88 20 37 C Roger. Will do.
- 88 21 38 CC Gemini 4, RKV. We're standing by for your check on that computer.
- 88 21 43 C Roger. I'm doing it right now.
- 88 21 44 CC Okay.
- 88 21 47 C We can't insert anything in the IVI's .....

[REDACTED]

[REDACTED]

88 21 58 CC Okay. We understand.  
88 22 01 C ..... on the second test.  
88 22 32 CC Gemini 4, on this insertion of the IVI's, you are to do that manually. Is this the way you've been doing it?  
88 22 42 C I've been doing it through the MDIU.  
88 22 43 CC Negative. Do it manually on the IVI indicator there.  
88 22 49 C That doesn't do anything.  
88 23 09 CC That's the way they want you to do it. They want to see if there's any change in the IVI windows as you run through the test.  
88 23 21 C Okay.  
88 23 57 (LOS)  
88 24 09 C ..... going through the test.

CANARY ISLANDS

88 38 44 CC Roger. Everything still looks good from here except your computer. I have a map update for you.  
88 38 50 C Stand by just a minute.  
88 38 56 CC Gemini 4, Canary CAP COM. I'd like to get the results of the computer test first.  
88 39 04 C Thought you'd ask. Nothing happened when IVI ..... went to the IVI's just as they were.  
88 39 14 C It's impossible to put anything through the MDIU. When you tried turning it off, you still got your Malfunction Light back and nothing happened when you started - pressed the Start Comp.  
88 39 43 C That's affirmative.  
88 39 48 CC Roger, here is your map update when you are ready.  
88 39 51 C Okay, go ahead.  
88 39 53 CC It's on Rev 56, longitude at 33° West, at G.m.t. 06 17 00.  
88 40 05 C Roger. Thank you.  
88 40 20 C I tell you, Canary, I think that computer died when we turned the power OFF with the switch stuck ON.

[REDACTED]

88 40 25 CC Say again.

88 40 27 C I said I think that computer died when we turned the power OFF with the switch stuck in the ON position.

88 40 34 CC I think everybody else is thinking the same thing.

88 57 24 C I just made a run on Target 16-A. The air field at Basra, it's right at the Persian Gulf. I picked it up - I picked the Persian Gulf up about ..... an angle of about 30°. ..... I pitched down then picked up the lake. .... northwest of the Persian Gulf. Basra being right on the lakes, very near the lakes, you can just follow over and pick up the airfield right away. So I got the airfield out quite a ways before I got to the target, and then just started tracking on the target. I was actually on the target by the time I was still 20° from the vertical, I would guess - and tracked it on out from the runway to about the 40° point past it, and I stopped tracking. I had this 75-mm lens on the 16-mm camera with the adapter on it to take pictures out the forward end and I had it running from the last experiment ..... for the target -

89 21 55 C Well, we saw Australia for the first time in the daylight. First passed up Basra then across the islands of India. On across India to Malaysia and on across to Australia ..... we certainly - only passed about half so far.

89 22 12 C I've seen an awful lot of North Africa ..... daylight - know quite well. I've just completed D-9 Apollo Landmark run on Target 14. I had a very good pickup. I had seen the target before; I knew where it was. I got right on the thing about 30° below the horizon and got on the area, and picked up the specific target at about 20°, 30° from the vertical. Got on the target at about 30° from the vertical and then tracked it to the vertical and then back off ..... back up, straight on, and then back up.

P ..... picture.

P ..... nice shot.

90 00 17 CC Gemini 4, Gemini 4, this is Houston CAP COM Over.

90 00 32 CC Gemini 4, Gemini 4, this is Houston CAP COM Over.

90 00 37 C Hello Houston, this is Gemini 4.

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90 00 39 CC Roger, hello there, Jim. We'd like a sub-quantity readout, please.

90 00 43 C Roger. Propellant quantity readout. Just a minute.

90 00 54 C Looks like about 48 percent.

90 00 56 CC Roger, understand. 48 percent. There will be no Medical Data Pass at Canaries this time around. No Medical Data Pass at Canaries.

90 01 06 C Okay.

90 01 08 CC And I've got a change to the Apollo Landmark outfit.

90 01 17 C Roger, stand by a minute.

90 01 41 C Okay, go ahead.

90 01 45 CC Okay. You can change - delete Sequence 12 and make it Sequence 14. It'll be on this orbit, Orbit 58. At time 09 40 22. Minus 6° yaw, and minus 30° pitch.

90 02 16 C Okay, it'll be Sequence no. 14 at 09 40 22 minus 6, and minus 30.

90 02 23 CC Roger, and understand Ed will be asleep during this time. Is that correct?

90 02 27 C That is correct.

90 02 28 CC Okay. We want to just advise you to use all the film. This is your last experiment. Use all the film you have at your option. Jim's here and we'd like to discuss this reentry with you a little bit. One other thing, Jim, we have increased the lifetime of your aft thrusters to 131 ft/sec, and you will receive no split burn on OAMS retro.

90 02 54 C Very good, very good. I was wondering what you were going to do about that.

90 02 56 CC Yes, we've been holding on to that for a while and thought we'd surprise you. Here's Jim.

90 03 01 CC Gemini 4, this is Shakey here.

90 03 05 C Hello Shakey here, how are you?

90 03 06 CC Fine. Listen, what are your feelings on a rolling reentry versus the 90° bank angle? We're recommending a rolling here.

90 03 15 C Yes, it's not very imaginative, but it gets the job done. So why don't we go ahead with it?

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[REDACTED]

90 03 19 CC Roger. Here is the format which we'll send up to you for a rolling reentry. We'll give you the  $\Delta V$  and  $\Delta T$  for your OAMS burn. We'll give you the GMTRC. We'll give you a RET of .05g. And then you will also get the RET of drogue, of main, and of landing. Your procedure will be at retro to go to full lift, heads down. At the RET of .05g you will go into a 15° roll rate. When you reach 100 000, when the altimeter comes off the peg, go to full lift. How does that sound to you, Jim?

90 04 12 C Roger. I think I've blocked part of you out. Right after retrofire we go to full lift and at .05g, or at that time, we go to 15 deg/sec and at 100 000 we go to full lift again.

90 04 25 CC That's right. The only difference between the format before is that instead of the RET of 400 000 we'll give you .05g RET when you start your roll rate.

90 04 37 C Okay, that sounds good.

90 04 39 CC This will give you a trim angle into the atmosphere, a roll rate, and then full lift at 100 000 again for your drogue and main deploy.

90 04 47 C Okay, very good.

90 04 50 CC Shades of Mercury, Jim.

90 04 53 C I was going to say I'll bet you Flight Directors were thinking of this one.

90 04 58 C That's why I say not very imaginative, but I guess it gets the job done.

90 05 03 CC Roger. I have a bet with your wife that you'll get within 5 miles. Now you've got to hold up my end here.

90 05 11 C Okay. I'm going to try to hold up my end, too. Remember when I said we'd never make a closed loop?

90 05 19 CC Doesn't look like we'll make one this time.

90 05 21 C Yes.

90 05 28 CC Hey, Jim, we're still going to pass you your updates for 60 through 64-4 with the bank angles in. Just the same as we've been passing them, with the exception of 63-1.

[REDACTED]

**[REDACTED]**

90 05 40 C That's affirmative. Don't change those; we just want the final one.

90 05 45 CC Roger, that'll come up just as it has been coming up and you'll get them at Canary.

90 05 50 C Okay.

90 05 56 CC Hey, listen, are you feeling pretty tired now, or are you pretty good?

90 06 00 C No, I'm pretty - I'm pretty sleepy and tired and I think that Ed probably is, too.

90 06 05 CC Righto, I understand you're kind of sleepy and tired. We're going to try to hold off the last couple orbits just to prepare for reentry.

90 06 14 C Yes, it's going to take us about 3 or 4 hours to get all of this stuff packed.

90 06 19 CC Righto.

90 07 03 CC Gemini 4, this is Houston. It looks like you're going to have good weather in the reentry area - in the splash area.

90 12 00 CC Gemini 4, Canary CAP COM.

90 12 20 C Hello Canary, Gemini 4.

90 12 23 CC Roger. I have ten retro updates for you.

90 12 30 C Okay. Go.

90 12 32 CC 60-1: 92. 1+57. 12 12 54. 6+00. 10+51. 60 - correction - 61-1: 104. 2+11. 13 48 06. 4+23. 9+40. 62-1: 113. 2+23. 15 22 05. 3+16. 10+48. 63-1: 127. 2+40. 16 55 57. 2+25. 15 deg/sec roll. 64-4: 101. 2+07. 19 41 30. 4+27. 9+43. 59-BRAVO: 105. 2+13. 11 32 44. 10+48. 60-BRAVO: 120. 2+32. 13 05 56. 10+58. 61-BRAVO: 93. 1+58 14 45 02. 11+04. 62-BRAVO: 85. 1+47. 16 18 08. 10+29. 63-BRAVO: 82. 1+44. 17 48 43. 10+07. And that's it. Do you have it?

90 12 44 C Roger. Got them.

90 12 50 CC You're still looking good and we're standing by.

90 12 52 C Okay.

90 15 55 C Canaries, Gemini 4 here again.

90 16 00 CC Go ahead.

**[REDACTED]**

90 16 03 C I'd like to have you remind the Assistant Flight Director that we're not going to be able to read out any  $\Delta V$ . It will be just on OAMS firing on time.

90 16 10 CC Roger, will do.

90 16 12 C Thank you.

CARNARVON

90 46 52 CC Gemini 4, Carnarvon CAP COM.

90 47 21 CC Gemini 4, Carnarvon CAP COM.

90 47 27 C Go ahead Carnarvon, Gemini 4.

90 47 30 CC Okay. You're looking good here on the ground. How are you doing?

90 47 33 C Everything is fine up here.

90 47 35 CC Okay, roger.

90 47 39 C Say, I finally saw Australia in the daylight.

90 47 41 CC Can you see the ground?

90 47 43 C Yes. I can see the ground now, and I can see the .....

90 47 48 CC Roger. How does the weather look over the whole coast?

90 47 50 C Well, let's see. I don't know which way I'm pointing right now. Looks quite good along the coast.

90 48 00 CC How much ground can you see?

90 48 03 C .....

90 48 25 C I'm in a bad attitude right now. Let me just fire along here and I'll tell you.

90 48 30 CC Roger.

90 49 16 C I got the curves here ..... Rev 58.

90 49 21 CC Okay.

90 51 15 CC Are you doing a little rolling?

90 51 18 C Roger, I am.

90 51 20 CC Okay.

91 32 31 CC Gemini 4, Gemini 4, Houston CAP COM. Over.

[REDACTED]

91 32 59 CC Gemini 4, Gemini 4, Houston CAP COM. Over.

91 33 06 C Go ahead Houston, Gemini 4.

91 33 08 CC Roger, Jim. We'd like your Quantity Read Switch ON for about 15 seconds and I have a map update if you are ready to copy.

91 33 17 C Okay. Go ahead with the map update.

91 33 19 CC Okay. At the end of Rev 59 ascending node longitude 124° West, G.m.t. 12 10 00.

91 35 13 CC Gemini 4, Houston. You can turn your Quantity Read OFF.

91 46 24 CC Gemini 4, Canary CAP COM.

91 46 26 C Go ahead Canary, Gemini 4.

91 46 29 CC Roger, I just want to remind the Pilot that he has a Medical Pass Type 1. Have the temperature probe inserted.

91 46 38 C Okee-doke. What time is that pass?

91 46 42 CC Stand by.

91 47 01 CC Carnarvon's acquisition 11 53 13.

91 47 09 C 11:35. Roger.

91 47 52 CC Command Pilot, Canary CAP COM. Flight wants to know if you are planning to sleep now.

91 47 58 C Roger, I am. In about another 10 or 15 minutes.

91 48 02 CC Roger.

91 48 58 CC Gemini 4, Canary CAP COM. Have you been lowering your Primary O<sub>2</sub> bottle pressure?

91 49 05 C We have just a little bit. Not by dumping it, but just by letting it bleed into our cabin bringing it up to about 5.3.

91 50 12 CC Roger. We have a slight rise in cabin pressure. Thank you.

91 50 15 C Say that again.

91 50 17 CC We noted a slight rise in cabin pressure. Thank you.

91 50 20 C Roger.

[REDACTED]

CARNARVON

92 19 17 CC Gemini 4, Carnarvon CAP COM.  
92 19 35 P Go ahead, Carnarvon, Gemini 4.  
92 19 38 CC Gemini 4, Carnarvon. Will the Pilot put the oral  
temp probe in his mouth, please.  
92 19 45 P Roger.  
92 20 47 CC Gemini 4, stand by for your .....  
92 20 51 P Roger, sure will. .... from a long way .....  
92 20 56 S Gemini 4, this is Carnarvon Surgeon. We are ready  
to get a blood pressure.  
92 21 26 S Gemini 4, Carnarvon Surgeon. Would you keep the  
temperature probe in your mouth while you're doing  
the blood pressure?  
92 21 32 P Roger, will do.  
92 21 52 S .....  
92 22 32 S Roger, Gemini 4. We have now a blood pressure.  
Ready for the exercise on your mark.  
92 22 39 P MARK!  
92 23 10 S Okay, the first count.  
92 23 26 S Can you give us your state of water in .....  
Gemini 4?  
92 23 32 P Roger. The Pilot just woke up, he had meal 2 of  
day 4, and 5 swallows of water, and had a very good  
rest of around 5 hours.  
92 23 45 S Roger. .... thank you very much.  
92 23 48 P Roger, feel fine.  
92 23 54 CC Gemini 4, Carnarvon CAP COM. You're looking good  
here on the ground, how're you doing?  
92 23 56 P Roger, looking great.  
92 24 00 CC Okay. Need anything at all?  
92 24 03 P No, everything seems to be in pretty good shape up  
here.  
92 24 08 CC Okay. We'll just stand by in case you need anything.  
92 24 10 P All right. How does it look down there?

92 24 13 CC Real fine. The weather has cleared up and everybody's happy. We're standing by for you.

92 24 15 P Roger. Did it finally stop raining?

92 24 17 CC Say again.

92 24 18 P Did it finally stop raining?

92 24 19 CC Roger. The young astronaut did a rain dance.

92 24 21 P Very good. That's supposed to bring rain, isn't it?

92 24 25 CC I don't know. The way he did the dance you can't tell.

92 24 26 P Yes. Who are you with?

92 24 31 CC Dave Scott.

92 24 33 P Okay.

92 24 54 CC Gemini 4, Carnarvon CAP COM. Did you get a briefing on the retrofire procedure?

92 24 58 P Roger, if it hasn't changed from 4 or 5 hours ago, I have.

92 25 14 P We're going to do a manual retro with OAMS - a manual retro with holdup.

92 25 17 CC Affirm.

92 25 18 P Roger.

92 25 31 CC Okay. That'll be a OAMS burn with automatic countdown at TR, backup with a manual retrofire. That'll be a rolling reentry.

92 25 44 P Roger. I thought we were going to make a manual TR.

92 25 51 CC Well, your clock seems to be working real fine, I think they're going to let it go for an auto and then let you back it up.

92 25 57 P Okay. That sounds fair.

TEXAS

93 02 28 CC Gemini 4, Gemini 4, Houston CAP COM. Over.

93 03 47 CC Gemini 4, Gemini 4, Houston CAP COM.

93 04 13 P Go ahead Houston, Gemini 4.

93 04 19 CC Roger, Gemini 4. How are you doing, Ed?

93 04 21 P Pretty good. Had a good night's sleep and .....  
water.

93 04 25 CC Roger. We're discussing this reentry profile and  
we'll get you the final data up just as soon as we  
come up with a final answer.

93 04 36 P Roger, sounds good.

93 04 38 CC It looks like now, however, we're going to power up  
your platform about 45 minutes earlier than the  
Flight Plan calls for. It'll be an elapsed time of  
95+19. That'll be over Carnarvon on the 61st Rev.

93 04 55 P Roger, 95:19.

93 05 27 CC Gemini 4, Houston. Have you been using quite a bit  
of OAMS attitude control for the last orbit or so?

93 05 33 P Say again, Gemini 4.

93 05 52 P Gemini 4, stayed in Pulse - Horizon Scan the whole  
time. There hasn't been much in the way of attitude  
control.

93 06 00 CC Roger. We got that.

93 11 40 CC Gemini 4, Houston.

93 11 48 CC Gemini 4, Houston CAP COM.

93 12 19 CC Gemini 4, Gemini 4, Houston CAP COM. Over.

93 13 15 CC Gemini 4, Gemini 4, Houston CAP COM. Over.

CANARY ISLANDS

93 19 18 CC Gemini 4, Canary CAP COM.

93 19 21 P Go ahead Canary, Gemini 4.

93 19 23 CC Okay Gemini 4. You look good on the ground. Are  
your systems still GO?

93 19 27 P Roger, all systems are GO here.

CARNARVON

93 52 55 CC Gemini 4, Carnarvon CAP COM.

93 53 09 P Go ahead Carnarvon, Gemini 4.

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93 53 11 CC Roger, we'd like you to take and place your Reentry C-band Beacon to the CONTINUOUS position.

93 53 17 P Roger. We have the C-band going to CONTINUOUS.

93 53 19 CC Roger. Your Antenna Selector to REENTRY position.

93 53 23 P Roger. Antenna Select to REENTRY.

93 53 26 CC Roger. Want you to leave it in that position for the remainder of the flight.

93 53 30 P Roger, understand.

93 53 32 CC Okay. I've got a map update for you if you are ready to copy.

93 53 36 P Wait one minute, please.

93 53 44 P Go ahead with the update.

93 53 46 CC Rev 62: longitude 168° East, and a G.m.t. of 16 35 00.

93 54 01 P Roger. Run 62, 168° East and 16 35 00.

93 54 07 CC Roger.

93 54 17 P I was looking for you on that pass .....

93 54 20 CC All right.

93 54 39 CC Okay, you're looking good on the ground.

93 54 41 P Roger. Everything's looking good up here.

93 54 43 CC Roger.

93 54 45 CC Jim is asleep, isn't he?

93 54 48 P Roger .....

93 54 50 CC Roger.

93 55 03 P .....

93 55 05 CC Say again.

93 55 06 P .....

93 55 10 CC Yeah, I bet you.

TEXAS

94 34 55 CC Gemini 4, Gemini 4, this is Houston CAP COM. Over.

94 35 09 CC Gemini 4, Gemini 4, this is Houston CAP COM. Over.

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[REDACTED]

94 35 14 P Go ahead Houston, Gemini 4.

94 35 17 CC Roger, turn your Quantity Read Switch ON please, and we'd like a propellant quantity readout.

94 35 24 P Roger. Propellant quantity reads 45 percent.

94 35 28 CC Understand, 45 percent. And have you had one or two suit fans on?

94 35 36 P We had two suit fans on for about the last 2 hours.

94 35 39 CC Roger, understand. Two suit fans.

94 35 42 P We're to one now.

94 35 44 CC Roger, you're back to one. And what time did the Command Pilot wake?

94 35 47 P Oh, about 15 minutes ago.

94 35 50 CC Roger, 15 minutes ago. Jim, I'm going to pass you the general procedures for the reentry. You'll get the 63-1 update and the details on your next pass over the States from Gus. The general procedure we'd like you to follow is: after retrofire, roll to the normal position to a heads-down position, for full lift to 400 K. We will give you an attitude angle to hold down to 400 K, then we'd like you to roll at 15 deg/sec till the altimeter comes off the peg or approximately 100 K and then back to full lift again till drogue.

94 36 47 C Roger, understand.

94 36 47 CC Roger. The only change since we went over this the last time is that we're using 400 K instead of .05g.

94 37 01 C Roger, understand.

94 37 07 CC Gemini 4, Houston. You can take the Quantity Read Switch off now.

94 37 13 C Okay.

94 37 43 CC Gemini 4, this is Houston.

94 37 47 C Go ahead.

94 37 50 CC Roger, we'd like your propellant temperature and pressure.

94 37 54 C Temperature is about 65, pressure is about - 1700, 1745, something like that.

94 38 04 CC Roger. We got 65 and 1700, 1725.

[REDACTED]

[REDACTED]

94 38 09 P Roger, that's what we got.

94 38 37 C Hey, Houston, Gemini 4.

94 38 38 CC Go ahead, Gemini 4.

94 38 42 C Houston, Gemini 4.

94 38 44 CC This is Houston. Go ahead Gemini 4.

94 38 50 CC Gemini 4, Gemini 4, this is Houston. Go ahead.

94 38 53 C Roger. It's pretty obvious that the computer isn't going to work. Why don't we turn it off?

94 39 09 CC Gemini 4, Houston. We'd like to go ahead and leave it on. Won't go into detail.

94 39 15 C Okay.

94 39 16 CC Roger. And the weather looks very, very good in the recovery area.

94 39 20 C Okay. Don't forget, I want to be recovered in a hurry!

94 39 26 CC Roger. They're on their way. All you got to do is hit the spot.

94 39 29 C Okay.

94 39 36 CC Roger, Jim. It looks real good from here. We got the targeting area and the procedures worked out to get the recovery forces there real quick.

94 39 44 C Okay.

94 39 45 CC And, James, this looks like about an 8g recovery.

94 39 48 C Oh, that's too much for an old man like me, old Shake.

94 39 55 CC You can hack it.

94 40 04 C Hey Houston, this is Gemini 4. We just took our - oops, stand by.

94 41 03 CC Gemini 4, this is Houston. How are you doing?

94 41 08 C Very good. We're just taking a couple of pictures. That's what the "oops" was for.

94 41 10 CC Oh, you had us shook up for a minute. Don't do that, you're giving us heart attacks down here.

94 41 18 C Oh, come on, John, it must have been a long night. If I were you, I'd be looking for a little excitement.

94 41 22 CC Hey, Jim.

94 41 25 C Yes, go ahead.

[REDACTED]

94 41 27 CC With this zero-lift reentry, we'll be able to predict your IP and have the recovery forces moving to your landing point about 15 minutes before you get there. We think that's the safest and quickest way to get there.

94 41 40 C Okay, Chris, I don't disagree at all. I agree.

94 41 42 CC Roger.

94 41 44 C I just think it's old-fashioned.

94 41 47 CC Roger. If you wouldn't foul up our computer.

94 43 15 CC Gemini 4, this is Houston.

94 43 18 C Go.

94 43 19 CC Roger, on your 63-1 update do you have any use for the OAMS  $\Delta V$ ? We were just going to pass the  $\Delta T$ .

94 43 24 C Yeah, send the  $\Delta T$  - will be fine. I also want it without OAMS.

94 43 29 CC Roger, it'll be there.

94 43 32 C Okay. And we'll probably - if we have a short OAMS burn we're going to correct our retrofire time just like we would if we had a short OAMS burn otherwise.

94 43 43 CC Roger. That's good.

CANARY ISLANDS

94 52 27 C Gemini 4, Canary CAP COM.

94 52 31 C Roger Canary, Gemini 4.

94 52 32 CC Roger. We need the oral temp probe in the Pilot's mouth.

94 52 39 P Roger.

94 53 45 CC Gemini 4, Canary CAP COM. Your systems look good, stand by for Surgeon.

94 53 50 C Roger.

94 53 52 S Gemini 4, this is Canary's Surgeon. Leave the oral probe in, but pump up your blood pressure cuff.

94 54 07 S Cuff is full-scale, Canary - Gemini 4.

94 54 48 S Gemini 4, Canary Surgeon. Blood pressure is received. Standing by for your food, water, and sleep reports since your last Medical Data Pass.

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94 54 59 C Roger. I'm preparing to eat meal 3 of the 4th day. I've had 6 swallows of water and I had a very sound 5 hours of sleep.

94 55 12 S Gemini 4, Canary Surgeon. That sleep was all before your last report period?

94 55 19 S I will - Canary Surgeon returning you to Canary CAP COM.

94 55 25 C Roger.

95 32 18 C .....

95 32 20 CC All right.

95 32 22 C I imagine I'll get mine as soon as I hit the water.

95 32 25 CC Roger. I understand.

GUAYMAS

96 04 09 CC Gemini 4, Guaymas CAP COM.

96 04 11 C Go ahead Guaymas, Gemini 4.

96 04 13 CC Roger. We've got telemetry solid.

TEXAS

96 07 19 CC Gemini 4, Houston CAP COM.

96 07 20 C Go ahead Houston, Gemini 4.

96 07 25 CC Gemini 4, Houston. Are you ready to copy your 63-1 time?

96 07 34 C Stand by just a second.

96 07 36 CC Roger.

96 07 38 C Okay, go ahead.

96 07 40 CC Okay. Your time to burn is 2 minutes 40 seconds, at 16 56 01. Time to 400 K is 2 minutes 38 seconds.

96 08 00 P Say it again. The only thing I got was 2 minutes and 38 seconds.

96 08 05 CC Roger. Time to burn is 2+40. GMTFC is 16 56 01. 400 K is 2+38.

96 08 23 P Roger. 2+40. 16 56 01. 2+38.

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[REDACTED]

96 08 30 CC Roger. Your time without OAMS is 16 50 40. 7+03.

96 08 45 P Roger. Is that 16 50 40? 7+03?

96 08 51 CC Affirmative. Your attitude at 400 K should be - on the ball - should be 27° nose above the horizon. And this would be out the window, which would be 23°.

96 09 10 P Roger. 23° out the window. On the ball, 27° nose up.

96 09 20 CC What are your attitudes now?

96 09 22 P Zero, zero, zero.

96 09 25 CC Very good.

96 09 26 C I just started to aline the platform.

96 09 28 CC Roger. Okay, Jim. What control modes are you going to use for the reentry?

96 09 33 C Well, let's try Reentry Rate Command. I was going to do that anyway, and then I decided we couldn't do it because we didn't have the response, but since we don't need to particularly ..... I'll use Reentry Rate Command.

96 09 48 CC Roger. You're going to hold roll in, or are you going to turn your roll rate gyros off?

96 09 52 C Turn the gyro off.

96 09 54 CC Okay, fine.

96 10 03 CC Okay. You want your time to 50 000 to drogue deploy and to splash?

96 10 09 C Roger.

96 10 11 CC Okay. 10+55 to drogue deploy, and 17+10 to splash.

96 10 19 C Roger. How about main chute?

96 10 23 CC We don't have that one yet.

96 10 25 C Roger. 10+55 to drogue, 17+55 to splash, and standing by for chute.

96 10 36 CC In case you don't get your complete OAMS burn, advance your retrofire time by 2 seconds for each second that you're short of your OAMS burn.

96 10 51 C Only 2 seconds?

96 10 52 CC Roger. Two for one.

96 10 55 C Okay. It used to be three for one. What happened?

[REDACTED]

[REDACTED]

96 10 59 CC No, it never was, Jim.

96 11 02 C It was about a week ago.

96 11 06 CC This is a new week.

96 11 11 CC Yes. Remember this is delta time now, not delta velocity.

96 11 16 C Roger.

96 11 18 CC On your checklist, when you pulled your drogue pins, did you pull your seat pins also?

96 11 25 C Roger. We weren't there yet. We'll get them, though.

96 11 34 CC Do you have everything stowed?

96 11 36 C Yes. We've got everything stowed as well as we can stow it.

96 11 38 CC Okay. The weather in your recovery area is scattered clouds, you've got 10 knots of wind and 4-foot waves. It couldn't be better.

96 11 45 C Roger.

96 11 47 CC Okay. The doctors want to talk to you here just a second.

C Okay.

S Jim? Both of you are in real good shape at the present time and all the EKG's look just fine. Your water intake has come up real well and from my last computation here, both of you appear to be really well hydrated for the reentry. I'd like to make sure that both of you feel completely rested. Is that affirmed?

C Oh, we're a little tired, but we're as rested as we can be.

96 12 21 S All right, Jim. Do you feel that there's any need for item bravo?

96 12 25 C Negative.

96 12 28 S Negative. Okay. I'd like to review with you this blood pressure. You are not going to have the adapter on until after you're on the water. Ed already has it on, and we can tell from the data. He's to get one blood pressure after retro, one on the chute before bridle, one after bridle, and then both of you every 15 minutes in the water. Affirm?

[REDACTED]

96 12 58 S Gemini 4, this is Houston Surgeon. Do you read?

96 13 02 C I got that Surgeon. We remember what they are.

96 13 28 S Gemini , this is Houston Surgeon.

96 13 30 C Go ahead Houston Surgeon. I got your message there.

96 13 33 S Roger. Okay. The other thing is the post-landing. We still - just to reaffirm - you would like no more than that 1 hour in the spacecraft. Get your suits off, at your discretion, if the spacecraft has no leak. The open hatch part is strictly your decision. It looks good in the recovery area at the present time for this. Remember the pumping exercise that we did at the time of the physical, and the feet up would be the preferable way. Are there any questions about this at all?

96 14 10 C No questions.

96 14 12 S Roger. We'll look forward to seeing you on the Carrier, then. Surgeon out.

96 14 18 C Okay. When are you coming on, Chuck?

96 14 20 CC This afternoon, Jim. Hope to be there shortly after you are.

96 14 26 C Okay.

96 14 37 CC Is there anything else we can do for you, or is there anything else that you want, Jim?

96 14 41 C Yes, my computer.

96 14 50 CC I wish I had an answer for that.

96 15 05 C What did you say?

96 15 07 CC You'd only have to compare it with my performance.

96 15 13 C You're unbeatable, Chris. I just unplugged it.

96 15 16 CC Roger.

96 15 42 CC Hey, Jim?

96 15 43 C Yes.

96 15 47 CC John just wanted to remind you that the toughest part comes after you get back to the States.

96 15 50 C I've been resting my arm.

96 15 53 CC Better rest your voice, too.

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REMOVAL

96 16 00 C Listen, I just won't shave. I'm so pretty now no-  
body will like me again.

96 16 07 CC That doesn't bother. Just don't take a bath.

96 16 17 C I thought those fumes before were bad!

96 16 20 CC Say again.

96 16 22 C I thought those fumes around 24 hours were bad!  
You ought to be up here now!

96 16 27 CC Roger.

96 16 30 P I'm going to run the tape continuous from now on.  
Let's put another one in here. I got one in there  
now and one later.

96 16 35 C I'm not going .....

96 16 38 P I'm all squared away over here.

96 16 40 C Got your seat pin out?

96 16 50 C I never put it in.

96 16 52 P Okay, .....

96 16 55 CC Jim. Could you give me your last cabin humidity  
reading that you took?

96 16 59 C Roger. I took one about an hour ago. Just before  
I stowed the stuff, and I just took one right in  
the middle of the cabin, and it was 75 or 78 and  
62 wet. It hasn't gained appreciably since take-off.

96 17 14 C Roger.

96 17 16 C ..... since take-off.

96 17 17 CC Roger.

96 17 18 C Okay, Ed babe, I'm going to start the - heck, what  
did I do with my glove? Here they are, here.

96 17 25 C I'm going to start suiting up.

96 17 28 P Okay. You got an hour and twenty to go.

96 17 35 C Hour and twenty?

96 17 47 CC Jim?

96 17 50 C Roger.

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96 17 51 CC We'll be losing you in about 2 minutes here. Hawaii will get your OAMS burn, and Guaymes will count you down to retrofire.

96 17 54 C Okay.

96 18 02 P Hey, let's pick up a good .....

96 18 04 CC .....

96 18 07 CC And as near as we can tell your IMU is in good shape down here.

96 18 08 C Yes, it looks good up here, too.

96 18 11 P Let's get a good Greenwich Mean Time update, too.

96 18 13 C Gus, can you give us the Greenwich Mean Time?

96 18 18 CC Say again?

96 18 25 CC Give you G.m.t. at 15:35.

96 18 28 C Roger.

96 18 30 CC 30 seconds to go.

96 18 30 CC Your TR is very good.

96 18 33 C Roger.

96 18 47 CC 20 seconds.

96 18 49 P How many?

96 18 50 C I don't know, a couple.

96 18 53 CC 15:35 on my mark.

96 18 55 CC MARK!

96 18 56 C Roger. I'd like to know when it's 15 35 30.

96 19 02 CC Roger.

96 19 05 C 20 seconds.

96 19 09 C Make that 32.

96 19 11 CC Okay.

96 19 22 CC 15 35 32, my mark.

96 19 28 CC MARK!

96 19 30 C Roger, thank you.

96 19 50 C Ed, will you get this for me, please?

96 19 52 P Yes sir .....

96 19 54 P Do you want them tight?

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96 20 02 C Just like they are. No, they are all right now.  
96 20 04 P Oh!  
96 20 06 C Just pull them down.  
96 20 16 P Got an extra one here.  
96 20 18 C Okay. Thank you.  
96 20 28 C Where is my other glove?  
96 20 33 P You didn't stow it, did you?  
96 20 45 P Did you find it?  
96 20 46 C No, I didn't. Here it is! Ha!  
96 20 49 P I didn't figure it could have gone too far.  
96 22 23 C Would you fix this one for me, too?  
96 22 40 C Thank you.  
96 22 42 P Roger.  
96 22 45 C ..... really got .....  
96 23 07 C It seems funny to be sitting back down this low again.  
96 23 14 P You really sit right up there, don't you?  
96 23 15 C Yes.  
96 23 25 P Let's see if I eject. I'm going out with this thing - up in here, Jim. Because it'll hang up otherwise.  
96 23 30 C Ed, just flick it. We'll be on our backs.  
96 23 35 P That's why .....  
96 23 36 P Give me that gun, Jim.  
96 23 39 C Why?  
96 23 40 P I'll put it in its bag.  
96 23 42 C I can make it all right, I think.  
96 23 47 P Well, why don't you just put it right in here. It'll be - contain itself. Anything loose like that you have no way to control.  
96 23 50 C Yes, you're right.  
96 23 52 C I'm going to just leave the food bags down here, though.  
96 23 54 P Yes, I'm going to put the food bags in my side thing. Oh, give me that .....  
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96 23 59 C This you mean?

96 24 02 P No, the extra meal. We had an extra meal.

96 24 04 C Yes.

96 24 06 P Here.

96 24 10 C Here it is.

96 24 12 P I'm going to put it all in here.

96 24 23 P Hey, it's not going to be like - we're going to be surprised by ejecting - I don't believe so.

96 24 26 C No.

96 24 28 P We're going to see the chute or aren't we? If we don't, then we know right away that we got to go. I'll plan on you pulling the handle though, and I'll just hold this strap.

96 24 35 C Okay. I'll pull the handle.

96 24 50 C Okay. We ought to start thinking seriously about really doing the checklist.

96 24 52 P Okay.

96 25 40 P You got your helmet tied on tight so in case you couldn't pressurize. Got your suit all squared away so it .....

96 25 50 C .....

96 25 54 P Yes.

96 25 56 P Is it checking right?

96 25 59 P Only think I lack is this thing across my knees.

96 26 01 C Your glove.

96 26 04 P Yes, I'm not going to put that on yet.

96 26 05 C I don't even know if I'm going to put mine on. Oh, I guess I'd better.

96 26 09 P There's no reason why you shouldn't.

96 26 30 P Anytime. Anytime.

96 26 35 C Finally found them?

96 26 36 P Yes.

96 26 45 C Are they really?

96 27 41 C Okay. Go into ORBIT RATE. Okay, now, you've got to plot out the .....

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[REDACTED]

96 27 45 P ..... time?

96 27 46 C Yes.

96 27 47 P Well, I've just got to multiply it by two, Jim, and a second short.

96 27 52 C Okay.

96 27 53 P Or just take a second short and multiply it by two, and that .....

96 27 59 C I mean turn the light ..... Are the gyros on?

96 28 06 P I'll be with you in 1 minute.

96 28 07 C Okay. Yes, why don't you eat that one and then we'll .....

96 28 08 P Case off.

96 28 16 C Check that. Go to RATE COMMAND.

96 28 41 C Boy, that mother's really a tight RATE COMMAND.

96 28 47 P Tight deadband?

96 28 50 C Wow!

96 29 18 P Is that my book or your book?

96 29 21 C Your book.

96 29 22 P I'll put it in my pocket, Jim, if you want me to.

96 29 23 C Okay. Turn MSC-1 on.

96 29 26 P That's on the checklist, isn't it?

96 29 29 C Yes.

96 29 30 P Go ahead.

96 29 32 P All right.

96 29 40 C Okay. Let me finish going over the egress.

96 29 47 C And I splash curtain install, neck dam install, Cabin Air Recirc handle UP. Left Snorkel handle UP, Cabin Vent handle UP. Hatch Release trigger aloof. Verify the Water Seal is DOWN and closed. Attach the lanyard, left hatch open. Stow Command Pilot survival gear over right side of spaceship. Whole recovery loop ..... right side of the spacecraft. What you do is move to the left seat with your survival kit. Throw the Pilot's survival gear on the left hatch over the recovery loop. Inflate the Mae West, be sure it's on the right side of the spacecraft. I break a Pilot ..... up to you. You'll

[REDACTED]

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remove your survival gear from the left hatch and close and lock the hatch. And you attach the right ..... That's the last thing in the world that I want to be doing out there - fooling around in the water.

96 30 41 P I agree.

96 30 47 C Can I give you a hand there?

96 30 48 P No, go ahead. I'm just checking.

96 30 52 C Okay. Let me - I'll go through the - no, I'll wait for you.

96 30 59 P If you're waiting, maybe - no, .....

96 31 02 C Okay.

96 31 04 P ..... thing in there?

96 31 16 C No. Ha! Ha!

96 31 18 P You can't forget it.

96 31 26 P I go with them off most of the time anyhow.

96 31 30 C Almost got it, Ed.

96 31 33 C Which one?

96 31 35 P The middle one.

96 31 36 C The tight one?

96 31 38 P The middle.

96 31 40 C We've only got two.

96 31 42 P Well, let's try that one. Took one off.

96 31 45 C The middle one .....

96 32 11 C Well, we're about ready to come down, Edward.

96 32 14 P I think we are.

96 32 16 C It's been very pleasant on occasion, and unpleasant on other occasions, for the last 4 days.

96 32 18 P Yes. ~~We've had some exciting moments.~~

96 32 23 C Yes.

96 32 28 C Well, I guess I might as well close my mike. Boy, is it beat up. Look at it.

96 32 40 P Yes, so is mine. I bet mine's worse. We've got a pre-retro checklist dump.

~~CONFIDENTIAL~~

**[REDACTED]**

96 32 50 C Okay, here. Stow this away, and we'll go through the Preretro Checklist and we'll do it for real. No skips.

93 33 02 P No skipping .....

96 33 21 C I wonder how ..... Ha! Ha!

96 33 25 P Okay. AC Power, IGS. It's on.

96 33 30 P ..... for the Pilot.

96 33 33 P ACME Bias Power, on PRIMARY.

96 33 35 P Attitude Light Switch breaker is ON.

96 33 38 P Attitude Indicator with FDI.

96 33 39 C With FDI.

96 33 40 P MDU power is OFF.

96 33 45 P Attitude Indicator, with FDI.

96 33 47 C With FDI.

96 33 49 P Computer Power, ON?

96 33 52 C Computer Power's ON.

96 33 54 P Yes.

96 33 55 P Oh, computer to CATCH-UP.

96 33 56 C No, just leave it in PRELAUNCH.

96 33 57 P Okay. Platform alining. It's alined, isn't it?

96 33 58 C It's already alined.

96 33 59 P Scanner's PRIMARY.

96 34 00 C PRIMARY.

96 34 01 P Rate Gyros, PRIMARY.

96 34 02 C PRIMARY.

96 34 03 P Equipment stowed?

96 34 05 C Stowed as best as can be.

96 34 06 P Stowage vents are open. Drogue pins are out.

96 34 11 C Stowage vents are open and drogue pins are out.

96 34 13 P Rog. Survival lanyard. Yours connected. Mine connected. All right, then. My harness and lap belt.

96 34 18 C That's your harness and your belt, aren't they?

**[REDACTED]**

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96 34 19 P Yes.

96 34 21 C Got your shoulder harness now?

96 34 22 P Yes. Secondary O<sub>2</sub>, OPEN.

96 34 23 C My Secondary O<sub>2</sub> is OPEN.

96 34 26 P You're sure .....

96 34 27 C .....

96 34 30 P Okay, I'm putting the new tape in.

96 34 33 C We're going to run out before we get there.

96 34 40 P Okay. I'll hold this and put it in later.

96 34 45 P Okay. Elbow support on your side. Unstowed.

96 34 49 C Yes.

96 34 54 P Sequence Lights Test - AMBER - GREEN - then RED.

96 34 58 C ..... okay.

96 34 59 P Verify all your Circuit Breakers are CLOSED. You're still fooling with that T<sub>R</sub>-5.

---

96 35 03 C No, I'm just putting it ON.

96 35 11 P Verify attitude would indicate with FDI. Attitude Indicator, with FDI.

96 35 13 C With FDI.

96 35 16 P Retro Power, ARM.

96 36 18 C Retro Power's ARM.

96 35 21 P Retro Power RCS, PUSH.

96 35 25 P Got them all. Good.

96 35 28 C Retro Power, OFF.

96 35 30 P Retro Power, SAFE. OAMS Power, OFF.

96 35 33 C OFF.

---

96 35 35 P Attitude Control RATE COMMAND.

96 35 37 C RATE COMMAND.

96 35 40 P Test rings A and B.

96 35 45 C They're firing, aren't they?

96 35 46 P Yes.

96 35 52 C Looks a lot looser this time.

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~~CONFIDENTIAL~~

96 35 57 P Check them both?

96 36 00 C Yes, what's the matter? Okay.

96 36 06 P Did they have return?

96 36 09 C Yes.

96 36 11 P Okay. Did they all check? -- you don't like one of them?

96 36 30 C Let me go to DIRECT.

96 36 33 P Let me make sure that you're in PRIMARY here.

96 37 04 C Getting a lot of yaw with my -- I think we got one of the Ring B thrusters off.

96 37 17 P Which one, Jim? Are you getting some yaw with the pitch?

96 37 25 C Yes, I get some yaw with the pitch.

96 37 28 P You ought to get roll though.

96 37 30 C Yes, but the yaw one is taking it out.

96 37 35 P Yes.

96 37 47 P ..... giving you roll?

96 37 49 P Did you put that in?

96 37 52 C Yes, I put that in.

96 37 54 C Okay. I guess it's okay.

96 37 59 P Okay. Attitude Control, HORIZON SCAN.

96 38 03 C Let's see, you want to go back OFF on these, don't we?

96 38 04 P Yes, I'm sorry, put those OFF. OAMS Power Attitude Thrusters are both good. A is reading 3000. B is reading about 2700. The temperatures are a little over 60 in each one. About 70 in A .....

96 38 23 C No, that's 2400.

96 38 25 P That's right, that's right, that's right. 2500 in A -- a little under 2500. B is about 2350.

96 38 37 C Seems like we don't have much left all of a sudden, though, doesn't it?

96 38 45 P Event Timer in STANDBY.

96 38 48 C STANDBY.

96 38 52 P All set for 36.

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96 38 57 C 36.

96 39 04 P Okay. All overhead circuit breakers are CLOSED.

96 39 18 P Both coolant pumps are ON. Suit fans are both ON. HF transmitting receivers on Reentry. New audio mode is on HF. We're not going to be able to do that. Leave it on RECORD. .... Push-to-talk. No. 2 Audio-HF.

96 49 47 C Let's stay in RECORD for a while.

96 49 49 P Okay.

96 49 52 C Oops! The checklist doesn't want to stay there.

96 49 59 P Okay. We checked our thrusters already.

96 50 04 C We actually made Thruster Check about 16:04.

96 50 13 P I don't know what we're in that anyhow.

96 50 18 C Now each can listen without being able to talk .....

96 51 35 P What do you think of the night retro?

96 51 40 C It's for the birds.

96 51 47 P It's not a bad horizon though.

96 51 49 C No.

96 51 54 P If you had a little moon, you'd be all right.

96 52 00 C I guess you could get down. Ha! Ha!

96 52 21 C My gloves don't feel right.

96 52 23 P You haven't had them on.

96 52 25 C No, that wire's really gouging me in the hand. I wonder - if I bend them.

96 52 30 P Are you sure you haven't got this too tight?

96 52 32 C No, it was really bad before I tightened that up.

96 52 40 P You might go through a few ..... gyrations.

96 52 52 C Okay. We're going to go to CAGE now.

96 52 54 P Yes.

96 53 30 C Okay. What do we do at T<sub>R</sub>-30 seconds?

96 53 34 P We checklist then.

96 53 42 P You've got to start your timers going on a hack from Carnarvon. Then go through and aline the platform again. Get your Controller and stuff out.

[REDACTED]

96 54 41 C ..... pick up early. I don't want to get seasick.

96 54 45 P I don't either.

96 54 47 C Hey, you got a couple up there you probably ought to get out of there.

96 54 49 P Okay.

96 54 51 C You all right?

96 54 57 P Start your burn. It's 16 44 01.

96 54 59 C 16 44 01. All right.

96 55 01 P Retro time 16 56 01 or minus 12.

96 55 31 C 2+40 is OAMS Retro. Right? Is it not?

96 55 37 C How are we going to handle that clock time? Are you going to countdown for me?

96 55 40 P Yes.

96 55 42 C I'll just fly away, and then when we get down to 2:30, you give me a mark when we've been gone through 30 minutes.

96 55 47 P I'll talk to you just as we go along. I'll give you a mark at 1-2-30-20-10 and count. Okay?

96 55 54 C Okay. Why don't you give me a mark at the end of a minute.

96 55 57 P Yes.

96 55 59 C At the end of 2 minutes, then start counting down from 30 when I've got 30 seconds to go. Tell me 30 seconds, 20 seconds, 10 seconds, 5, 4, 3, 2, 1.

96 56 09 P That's exactly what I said. That's good.

95 56 11 C I just wanted to make sure that that's what you said.

96 56 13 P Right. Okay.

96 56 15 C After so many clocks that we've been talking about.

96 56 28 C How long is it to RET? To 400 K? 2+38? Seems awfully short.

96 56 34 P Yes.

96 56 35 P You sure you're looking at the right one?

96 56 37 P Positive.

96 56 40 C Okay.

96 56 49 P We've had lot of them read up to us that short.

[REDACTED]

[REDACTED]

[REDACTED]

96 56 51 C Yes, I guess we did. But none of them were over there. The OAMS retro is always a lot shorter.

96 56 57 P Oh, yes. You're down.

96 57 40 C Don't let me retrofire at 16°. Remember, it's 30°.

96 57 40 P Okay.

96 57 52 C There's something about the amount of fuel that I have shown on my quantity gage, and the amount of retrofire that we got here, that just doesn't figure out.

96 58 01 P It should be higher.

96 58 04 C Yes, it looks like it. No, I mean on my OAMS propellant.

96 58 06 P Oh, you mean - you mean-

96 58 09 C Quantity reading.

96 58 11 P Yes, you mean you feel we're going to burnout short.

96 58 13 C Yes.

96 58 18 C ..... 42 percent. About 100 - 120 pounds showing. That doesn't allow any cushion. Well, if we burnout short, that means we're going to overshoot - long. So we can adjust our retrofire time forward 2 sec/sec.

96 58 52 P Hey, you want to get a few things dead ahead. You're not going to use your FDI scale, are you? Want to set it on HIGH?

96 58 59 C No, I'm going to use in on LOW for rate for the OAMS retrofire.

96 59 02 P Okay.

96 59 11 C Ed .....

96 59 12 P You're going to fly ACME. Right?

96 59 14 C Going to fly ACME.

96 59 16 P Okay. And if you holler, I'll give you a different one.

96 59 20 C Yes, and I'm going to fly roll gyros in all three?

96 59 23 P Right, and I'll be watching when -

95 59 26 C You knock off the roll if it looks as though I need it.

[REDACTED]

[REDACTED]

[REDACTED]

96 59 33 C That sure was a peculiar way that thing was firing out there. I was getting those yaw jets everytime I fired pitch.

96 59 49 P You didn't do that in DIRECT, did you?

96 59 52 C No, I didn't. Yes, I still got them in DIRECT.

96 59 53 P Did you?

96 59 55 C I turned the roll off. No, I turned the roll off and just used pitch.

CARNARVON

97 00 03 CC Gemini 4, Carnarvon CAP COM.

97 00 04 C Roger, Carnarvon, Gemini 4. We're reading you loud and clear.

97 00 07 CC Roger. Read you loud and clear. How are you doing with your Pre-Retro Checklist?

97 00 09 C The Pre-Retro Checklist is complete.

97 00 12 CC Roger. I would like to give you a G.m.t. time hack at 16 17 00.

97 00 18 C Roger. 16 17 00.

97 00 21 CC Roger. About 30 seconds from now.

97 00 23 C Okay. Give me a mark at 30.

97 00 25 CC MARK!

97 00 27 C Okay.

97 00 33 CC Okay. We show your RCS readings ..... You're looking good here.

97 00 37 C Roger.

97 00 39 CC I've got some times for you. Got a pencil and paper ready to copy?

---

97 00 42 P Ready?

97 00 43 C Ready.

97 00 45 CC You say you're ready?

97 00 47 C Roger. We're ready.

97 00 49 CC Begin blackout 5+23. End blackout 9+21. 50 K feet, 10+55. Main chute 12+33. Splash 17+10.

[REDACTED]

**[REDACTED]**

97 01 18 C Get them all?

97 01 21 P Right.

97 01 23 C Okay. We've got those times. Thank you.

97 01 25 CC Roger.

97 01 25 P Don't you want to go ahead and verify the 240?

97 01 30 CC Set up your Event Timer for 36 minutes and in about 2 and 1/2 minutes I'll give you a mark to countdown.

97 01 33 C All right. Will you verify GMIRC for 63-1?

97 01 37 CC Okay. 63-1 with maneuver, 16 56 01. 63-1 without maneuver 16 50 40.

97 01 47 P Well, what we need -

97 01 49 CC .....

97 01 54 C Did you want anything else?

97 01 57 C Okay, roger. Could you give me the time to start rolling 400 000 feet?

97 02 03 CC Okay. With maneuver 2+38. Without maneuver 7+03.

97 02 16 C Roger. Thank you.

97 02 17 CC Roger.

97 02 20 CC Are you ready to check your thrusters 9 and 10?

97 02 23 C I've already checked my thrusters 9 and 10.

97 02 25 CC Okay. Are they very good?

97 02 27 C Roger. Both good.

97 02 28 CC Okay.

97 02 31 C You want to check that?

97 02 33 P What?

97 02 35 C You want to check that. Oh, you're just going to leave that for them.

---

97 02 37 P Yes.

97 02 39 C Okay.

97 03 09 C Smell that ammonia again, Ed?

97 03 11 P Do you?

97 03 24 CC Okay. Have you got your Event Timer all set up?

97 03 28 C All set at 36 minutes.

**[REDACTED]**

**[REDACTED]**

97 03 31 CC Okay, in about 30 seconds I'll give you a countdown.

97 03 52 CC 5,4,3,2,1. MARK!

97 03 59 C Roger. Counting down.

97 04 01 CC Okay. Very good.

97 04 06 P Okay. Got your Event Timer counting down.

97 04 08 C Yes.

96 04 13 P Attitude Control, DIRECT, or whatever you are going to do?

97 04 16 C Yes.

97 04 18 P FDM, Rate.

97 04 19 C Yes.

97 04 20 P FDI, LOW?

97 04 21 C Yes.

97 04 23 P Maneuver Controller, UNSTOWED?

97 04 24 C I think that's okay. Go ahead. Reading now .....

97 04 25 P Yes. I'm just going to go right down the list. OAMS Power, MANEUVER and ATTITUDE.

97 04 28 C Right.

97 04 32 P Spacecraft 0-90-0. Okay. We didn't do that before. No sweat. All right, we completed that.

97 04 37 C Right.

97 04 42 P Okay. Check operation of aft firing thrusters. Spacecraft is 0-80-0. OAMS Power, ATTITUDE.

97 04 49 C Yes.

97 04 52 P Attitude Control, HORIZON SCAN.

97 04 54 C I'm alining. Go ahead.

97 04 56 P FDR, PLATFORM. FDM, ATTITUDE.

97 05 01 C Right.

97 05 03 P Platform blunt-end-forward. Are you sure you want ATTITUDE on there, Jim?

97 05 06 C Yes, I'm alining the platform. Go ahead.

97 05 08 P Okay.

97 05 11 C The Attitude Control, PULSE.

97 05 12 C PULSE.

**[REDACTED]**

97 05 13 P Null FDI's to aline platform.  
 97 05 14 C Right. Nulling FDI's to aline platform. That's what I'm doing now.  
 97 05 18 P Okay. You're ahead of the checklist.  
 97 05 20 C Right.  
 97 05 23 P Now, no ground update.  
 97 05 25 C Where did we end up with the OAMS Power, Maneuver, OAMS Power Switch? MANEUVER and ATTITUDE is in ATTITUDE.  
 97 05 30 P It's in ATTITUDE and you'll get it at the minus 13.  
 97 05 35 C Okay.  
 97 05 54 P Okay. We're good now until minus 22.  
 97 05 56 C All righty. What happens at minus 22?  
 97 06 01 P Platform blunt-end-forward. Attitude Control, PULSE, null FDI's (Ha! Ha!) and aline platform.  
 97 06 06 CC Is there anything else you want up there, Gemini?  
 97 06 08 C Negative. Well, I do still need my computer, but I can't think of any way to bring it up.  
 97 06 15 CC Yes, I know what you mean.  
 97 06 18 P Okay, now till minus 13, there's nothing to do except you get that platform alined.  
 97 06 19 CC I'll buy you a new one.  
 97 06 20 C Okay.  
 97 06 25 P I'm going to go back and re-verify the whole stuff we've done.  
 97 06 28 C Okay. Very good.  
 97 06 32 P Okay. When I finish this, I'll put a new tape in.  
 97 06 37 C Okay.  
 97 06 56 C We're going to have the most alined platform in the world. We will have been alined for an hour. We'll probably come out of the darkness facing sideways.  
 97 07 01 P Yes, that'll be a shock.  
 97 08 06 C Hey, Ed, you know we always said that we were going to make an open loop reentry. I'm much happier that the computer failed and not the .....  
 97 08 14 P Yes, I'd rather be that way.

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97 08 18 C At least we have an attitude reference for retrofire and all the other operations. Hey, did we turn our batteries ON?

97 08 20 P No, they don't come on yet. They come on down here right in the minus 13.

97 08 44 P You have a minute.

97 08 54 C Temperature is not coming down much.

97 08 56 P No.

97 08 59 C Wonder why we don't have the cabin fan ON.

97 09 11 P Wonder if that's not on here.

97 09 16 C Did you go off the checklist?

97 09 18 P Yes.

97 09 37 P The batteries will come on the T<sub>R</sub>-5 checklist.

97 09 40 C All right. I guess we don't have to worry about venting the ECS O<sub>2</sub> anymore, do we? Ha! Ha!

97 09 45 P No.

97 09 54 C You have your Secondary O<sub>2</sub> on too, don't you?

97 09 56 P Yes, mine's been on the whole flight.

97 09 58 C Very good.

97 10 04 C Hm! Hm! ..... circuit breakers on .....

97 10 07 P No, I've been very sedate.

97 10 18 P I don't feel like I can strain as much as I used to be able to.

97 10 20 C Right now, you mean.

97 10 23 P Yes. Do you?

97 10 25 C No. I feel pooped out.

97 10 28 P I tell you, I don't feel like straining anymore.

97 10 30 C Yes.

97 10 31 P You feel that way, too?

97 10 37 C Yes, I feel completely fatigued. Yes .....

97 10 42 P No, it's not a fatigue, I don't know -

97 10 45 C It's a very funny feeling .....

97 10 46 P I can't quite put my finger on it.

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[REDACTED]

97 11 28 P The new tape for the retro is tape no. 15, and I've got tape no. 14 loose and I'll put it -

97 11 42 C Hey, in case you didn't ..... the neck dam. I got two of them.

97 11 44 P Yes. Okay, I did too.

97 11 44 C As a matter of fact, so do you.

97 11 45 P Right.

97 11 48 C Do you have two of them in that suit?

97 11 49 P Yes.

97 11 50 C How many did you have in the other one? Two in that one, too?

97 11 54 P I think I only had one in there.

97 12 03 C I'm going to pop my ears.

97 12 12 C Ears popped.

97 12 14 P Roger.

97 12 16 C You're not going to pop yours, are you?

97 12 18 P No, I just cleared them. They're clear.

97 12 23 C We ..... to clear them like that.

97 12 26 P Ha! Ha!

97 12 38 C Okay. Let's just go through our procedures a little bit.

97 12 44 C T<sub>R</sub>-5. What are you going to do?

97 12 47 P I've got a checklist to complete.

97 12 49 C Okay. What is it?

97 12 52 P I'm going to start the G.m.t. stopwatch per your time hack. I've already done about half of it. I'm going to put the Main Batteries ON. Verify RCS Propellant A and B - ON.

97 13 04 P I'll verify that now. I'll check it again, but -

97 13 06 C Okay.

97 13 09 P Antenna Select to REENTRY, and it's already on REENTRY. Propellant gage RCS-B, and I've already set it to B. Quantity, OFF. Quantity is OFF. Indicate Retro Attitude, and I'll ..... I guess you've got to have something on over there for me to do that, though.

[REDACTED]

[REDACTED]

97 13 32 C I've got to have something what the Retro Power. Remember we've always had that thing out of order.

97 13 38 P Yes. Okay.

97 13 40 P Let's put that Retro Power thing at  $T_{R-}$  for you to do.

97 13 42 C Okay.

97 13 56 P Okay. I'll hit Indicate Retro Attitude, Sections 1 and 2 Power Control-OFF. Then you have some things: Platform-ORBIT RATE, FDR-PLATFORM, FDM-RATE, FDI Scale-High. Verify Rate Gyros-PRIMARY. I've already done this. Attitude-RATE COMMAND.

97 14 20 P You're in PULSE now.

97 14 25 P RCS Power A and B-ACME, OAMS Power OFF, OAMS Propellant - OFF. Control spacecraft to 0. 180 and -30. We're at minus 180 but not minus 30 yet.

97 14 40 C Right.

97 14 42 P At that time you'll put the Retro Power to ARM, but we're going to move that up to the beginning so I can indicate retro attitude.

97 14 49 P Okay.

97 14 50 C Right.

97 14 52 P Then you'll report the minus 5 completed.

97 14 55 C Okay.

97 14 56 P Okay. At that time I'll turn the Transmitter-Receiver HF OFF. No. 2 -- RECORD. We should state that. Now at minus 1 I'll push OAMS, ELECTRIC and ADAPT. OAMS, ELECTRIC and ADAPT.

97 15 10 C Not too fast.

97 15 11 P No. We want to listen carefully so we can tell our good buddies about it.

97 15 13 C Roger.

97 15 16 P Okay, at minus 30 you will arm the squibs-up and at minus 10 seconds. I go to the AUTO RETRO and I'll - no, we won't even use that.

97 15 37 C No. We'll do it, though -

97 15 39 P Let the .....

97 15 42 C Okay.

[REDACTED]

[REDACTED]

97 15 45 P I'll manually fire. We're not going to use auto retros, are we?

97 15 49 C No.

97 15 50 P No, we are too.

97 15 51 C They can still run - I don't know whether they got the load in or not. Did he say they had the load in?

97 15 54 P Yes.

97 15 56 C TRS will fire them.

97 15 58 P TRS is working all right.

97 16 00 C Okay. He said that.

97 16 01 P I'll delay that a little bit. Ha! Ha!

97 16 04 C Yes. Delay it till about 5. How about that?

97 16 06 P Yes. Okay. I'll put that on at minus 5, and I'll fire on the time - on the count of zero. No delay on that time.

97 16 16 C Nope.

97 16 18 P Put you to FREE here, and I'll watch with bated breath as we fire our retro rockets.

97 16 26 C Yes. Don't forget to put me to FREE, because we might not - you know, it may not go.

97 16 33 P I've been putting you to FREE as a regular thing - on all training. After retrofire monitor yaw, check Comp Light-ON. We don't have that Platform-FREE. Okay, I'll have that.

97 16 44 P Report to Guaymas numbers of retros, IVI readings, estimated - all you're going to have to do is report the number and the attitude.

97 16 52 C Good.

97 16 56 P Okay. After retros, ES sensor-OFF. We have a RET checklist to go through. Do you want me to go through that now?

97 17 04 C Yes. Jettison Retro if you want to.

97 17 06 P Yes, the Retro Jettison ARM first. Jettison Retro. Report jettison retros to Guaymas. Retro Power-SAFE, Retro Jet-SAFE, Retro Squibs-SAFE. FDR - might as well leave that on ATTITUDE.

[REDACTED]

[REDACTED]

97 17 22 C No. I'm going to leave it on RATE.

97 17 25 P ATTITUDE or COMP - ! You going to leave it on PLATFORM?

97 17 30 C PLATFORM or COMPUTER. Yes, I'll leave it on PLATFORM.

97 17 32 P Yes. Right.

97 17 37 P You're going to leave it on RATE too, aren't you?

97 17 38 C Yes.

97 17 40 P The FDI will be on LOW.

97 17 43 C Okay.

97 17 44 P The attitude control - you going to use Rate Command or Reentry Rate Command?

97 17 48 C Reentry Rate Command.

97 17 50 C Okay. We're coming up on 22 minutes.

97 17 54 P Okay, aline your platform.

97 17 58 C Ha! Ha! Look, we've driven the temperature down to 55 in here!

97 18 04 P Now we'll suddenly start swimming, huh?

97 18 08 P You read the times off, because you have a good hack around that area.

97 18 22 C Next thing we do is at 13. Right?

97 18 25 P Right.

97 18 30 P Okay. And that should be at 16 43 01. 22+9 minutes.

97 18 44 C It looks like we're still right-side-up out there.

97 18 54 C Boy, I really smell that ammonia.

97 18 59 C Do you?

97 19 01 P No, I don't. Jim, let me tell you something.

97 19 08 C It has something to do with wetting your pants, doesn't it?

97 19 11 C No, this is about the strongest I've ever smelled it. We really screwed up when we went with this padding here. I wonder if - gee, look there at the cabin vent.

97 20 42 P Okay. I'll review a few times - for you.

97 20 45 P Okay.

[REDACTED]

[REDACTED]

97 20 47 P The time to 400 000 K will be 2+38.  
97 20 54 C Right.  
97 20 56 P Blackout will commence at 2+38.  
97 20 59 C Blackout at 2:23.  
97 21 01 P 5+23. Correction.  
97 21 02 C 5+23. Okay.  
97 21 03 P And ends at 9+21.  
97 21 04 C Okay.  
97 21 06 P 50 K and drogue is 10+55.  
97 21 11 C Okay.  
97 21 13 P Main chute at 12+33.  
97 21 15 C Okay.  
97 21 16 P Landing is 17+10.  
97 21 18 C Okay. You'll have to call those out to me again  
when we get going.  
97 21 20 P Yes. I've got them all written here.  
97 21 28 C Okay. We're at 18:30 minutes.  
97 21 40 P And you give me a mark when you start the burn.  
97 21 42 C Right.  
97 21 46 C We'll probably get a countdown from the ground, too.  
We'll have a multiplicity of countdowns.  
97 21 53 P None of which will probably agree in some respects.  
97 21 55 C Yes.  
97 21 59 P Oh, here's your .....  
97 22 01 C Right.  
97 22 02 P That's for really only - that's the important one  
there.  
97 22 04 C Right.  
97 22 25 P And if you should get hurting somewhere in there,  
let me know.  
97 22 30 C Okay.  
97 22 33 C I'll just say, "you've got it."  
97 22 34 P Yes.

[REDACTED]

**CONFIDENTIAL**

97 23 01 C Wonder if Paul Haney has the crowd worked up to a frenzy. Ha! Ha!

97 23 04 C I don't know.

97 23 18 C Come on now. Let's not be burping.

97 23 21 P I'm thinking about the food.

97 23 23 C Ha! Ha!

97 23 25 C Ah, the sun's coming up.

97 23 28 P Okay. I'll recheck all the switches again.

97 23 30 C Very good, old boy.

97 23 36 C All on?

97 23 50 C Got some brilliant fireflies out there. Boy, there is one of them that is really pretty.

97 23 54 P Yes, I see them.

97 23 56 C 16 minutes.

97 24 04 C Retrofire - retrofire's more fun than launch. You know nothing's going to stop it - it just counts down.

97 24 12 P Yes. That's right.

97 24 16 C In launch you have to be concerned about whether the gantry is going down.

97 24 23 P What about that gantry?

97 24 23 C Shades of MA-9!

97 24 25 C Same thing here too, in a way - losing the computer:

97 24 30 P Yes.

97 24 31 C The way Gordo lost the .....

97 24 35 C Where did I have that?

97 24 45 P Boy, I don't have any reference. Do you?

97 24 47 C No.

97 24 49 C I have fireflies.

97 24 52 P This would be a tough retro -

97 24 54 C Oh boy!

97 24 55 P ..... time to retro, wouldn't it?

97 24 56 P You couldn't see anything.

97 24 59 C 15 minutes from now.

**CONFIDENTIAL**

97 25 01 P Okay. We've got 3 minutes till our burn.  
 97 25 07 C Start giving a T<sub>R</sub>-13 checklist at 14.  
 97 25 10 P Okay.  
 97 25 13 P Start Comp. You don't need to do that.  
 97 25 16 C You've got another minute.  
 97 25 18 P Oh, okay.  
 97 25 20 C I've got to wee-wee.  
 97 25 33 C Shoot. I'm going to have the best alined platform  
 we've ever had in the whole world.

HAWAII

97 25 39 CC Gemini 4, Hawaii CAP COM.  
 97 25 40 C Hello Hawaii, Gemini 4.  
 97 25 42 CC Roger. Are you in attitude for your OAMS burn?  
 97 25 44 C I am.  
 97 25 45 CC Roger. I will give you a 5 second countdown to  
 start of OAMS burn.  
 97 25 52 C Roger.  
 97 25 53 CC Stand by, and I will stand by for a mark on com-  
 pletion of OAMS burn from you.  
 97 25 57 C Roger.  
 97 25 59 C Okay, Edward. Let's go through the 14 minute -  
 13 minute checklist.  
 97 26 01 P Okay. Start Comp-PUSH. Platform-ORBIT RATE.  
 Attitude-RATE COMMAND. You're in PULSE.  
 97 26 13 C Okay. Thank you.  
 97 26 14 P Roger. Maneuver Controller-UNSTOWED.  
 97 26 16 C UNSTOWED.  
 97 26 17 P OAMS Power-MANEUVER and ATTITUDE.  
 97 26 18 C MANEUVER and ATTITUDE.  
 97 26 20 P FDM-RATE.  
 97 26 21 C RATE.  
 97 26 23 P 0, 180, 0.

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97 26 24 C 0, 180, 0.  
97 26 27 P You're in good shape.  
97 26 30 P You'll burn at 15 3/4 01, counting on your timer,  
and we'll get a countdown, I guess.  
97 26 38 P I'll still give you some talk.  
97 26 39 C Right.  
97 26 40 P Unless they're bothering us so I can't.  
97 26 42 C No, he said they're going to stand by for my mark.  
97 26 44 P Okay.  
97 26 49 C Okay, I'll tell you when we've got a minute.  
97 26 54 C Thirteen on my mark.  
97 26 59 C MARK!  
97 27 01 P Right.  
97 27 13 C Okay, you ready?  
97 27 16 P I'm ready.  
97 27 20 C 2 minutes and 40 seconds.  
97 27 26 P How much?  
97 27 27 CC 30 seconds to OAMS burn, Gemini 4.  
97 27 30 C Roger.  
97 27 37 P Look at that firefly sparkling.  
97 27 40 C Yes. It is.  
97 27 44 C Okay, 15 seconds.  
97 27 47 C I'm going to put pressure in the line.  
97 27 52 CC 5,4,3,2,1. MARK! Start burn.  
97 28 01 P Okay. I've got a good hack.  
97 28 07 C Attitudes are holding smoothly.  
97 28 54 P Coming up on 1 minute.  
97 28 56 C Thank you.  
97 28 59 P Now.  
97 29 00 C Thank you.  
97 29 23 C ..... grinding away.  
97 29 25 P Yes.

3 ~~CONFIDENTIAL~~



~~CONFIDENTIAL~~

97 29 54 P You're coming - you're coming up on 2 minutes.  
97 29 56 P MARK!  
97 30 02 C Got 10 percent of fuel left.  
97 30 04 P Roger.  
97 30 06 P You're coming up on 30 seconds.  
97 30 16 CC We're standing by for your mark, Gemini 4.  
97 30 18 C Roger.  
97 30 20 P 20 seconds.  
97 30 28 P 10 seconds.  
97 30 32 P 5,4,3,2,1,0  
97 30 37 C MARK!  
97 30 38 P Good show!  
97 30 42 P How about that?  
97 30 43 CC Roger, Gemini 4. How were your attitudes during your firing?  
97 30 45 C They were within about a degree.  
97 30 48 CC Roger. Roger.  
97 30 50 P Okay, IVI. .... QAMS fire attitude.  
97 30 52 C QAMS fire attitude.  
97 30 54 P Maneuver control is STOW.  
97 30 55 CC You looked good here on the ground.  
97 30 56 C Stow.  
97 30 57 P FDR-PLATFORM.  
97 30 58 C PLATFORM.  
97 30 59 P FDM - it says ATTITUDE. You probably want RATE, don't you?  
97 31 02 C RATE. Well, let's go align the platform some more.  
97 31 04 P Attitude Control PULSE - Yep. Blunt-end-forward.  
97 31 06 P Null FDI's to align platform computer REENTRY. Okay.  
97 31 18 P I'll be standing by for the minus 5.  
97 31 28 C It's showing about 3 percent fuel remaining.  
97 31 32 P Okay.

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[REDACTED]

97 31 34 C Now, if that conversion table was right, we got the first part down exactly right.

97 31 43 C Oh, by the way, I checked it and compared with ..... table.

97 31 49 P It shows about 1100.

97 31 52 C Roger.

97 31 53 CC Gemini 4, Hawaii, stand by for an 8 minute mark to retrofire.

97 31 57 CC 1 - MARK!

97 31 59 C Roger, got your mark.

97 32 08 C ..... T<sub>R</sub>-5 and -6. Okay.

97 32 11 P Okay.

97 32 13 C Some of it anyway.

97 32 16 P Yes, well, I can't do much of it, Jim.

97 32 18 C Okay.

97 32 20 P I didn't want to put the main batteries on. All you do there is ORBIT RATE, platform FDM RATE, FDI scale HIGH. Go to RATE COMMAND. ACME. OAMS OFF. And go to minus 30.

97 32 46 C Right.

97 32 48 P Now I'm going to ask for Retro Power ARM right after minus 5.

97 32 52 C Okay.

97 33 18 C I don't know why I'm doing all this in the Platform Alining mode. It's not really good.

97 33 23 P Let's see. You've got a minute and 30 seconds to minus 5, right?

97 33 26 C Yes, on my mark. MARK!

97 33 29 P Okay, I'm half a second from you. I think I can't sweat that.

97 33 32 C You can't have everything, Ed.

97 33 39 P Well, we got somebody's OAMS retro. I'm not sure any more whose that is.

97 33 44 C I don't know who owns the OAMS retro these days.

97 33 46 C Ha! Ha! Ha!

[REDACTED]

**[REDACTED]**

97 33 97 P Right.

97 34 01 C I see little things floating along with us. Ed.

97 34 03 C Yes.

97 34 06 P Hey! I noticed them going the other way the other night.

97 34 08 C Yes, so did I. They were going forward.

97 34 10 P I was small-end-forward, and they were going forward.

97 34 14 C Okay, 5:44.

97 34 15 P Right.

97 34 17 C Everything you want to go on RETRO POWER. Right?

97 34 18 P That's right. At 5, I'm going to start this thing right up here, and then give me RETRO POWER.

97 34 30 C You want me to give you a mark?

97 34 35 P No, I've got mine right here. I'll get from that ..... We're coming up on .....

97 34 42 C 15. MARK!

97 34 44 P Right.

97 34 59 C Okay, we'll be right on time RETRO POWER .....

97 35 01 P Okay.

97 53.03 C Is ARM.

97 35 06 P Retro Power is ARM. My Greenwich watch has stopped. The main batteries are coming on. Verify RCS propellant A and B are ON.

97 35 13 C Rog.

97 35 18 P Indicate - Indicate Retro Attitude has been PUSHED. Sections 1, 2, 3, ..... are all ..... We're on the Main Batteries. And the buses ..... all look good. Platform, ORBIT RATE.

97 35 37 C ORBIT RATE.

97 35 39 P FDR, PLATFORM.

97 35 40 C PLATFORM.

97 35 42 P FDM, RATE.

97 35 44 C RATE.

97 35 46 P FDI Scale, HIGH.

**[REDACTED]**

[REDACTED]

97 35 47 C HIGH.

97 35 49 P Attitude Control, RATE COMMAND.

97 35 51 C RATE COMMAND.

97 35 52 P RCS Power A and B ACME.

97 35 53 C ACME.

97 35 54 P OAMS Power, OFF and OAMS Propellant, OFF.

97 35 56 C Both OFF.

97 35 57 P Go to minus 30.

97 35 59 P Okay, we're all set.

97 36 03 C Report to Guaymas that we've got it.

97 36 11 P You want to report a minus 5 complete, Jim?

97 36 12 C Minus 5 checklist is complete.

97 36 20 P Kind of bright, isn't it?

97 35 22 C Yes, it is.

97 36 23 P Okay, we've got all the lights on.

97 36 30 C Hey, Ed, does that go off?

97 36 32 P No, it doesn't. It goes off later on. I don't see why we leave it on though, do you?

97 36 37 C No.

97 36 39 P Scanners, OFF.

97 36 42 P Trans - HF is OFF now, and I'm on RECORD and have been on RECORD.

97 36 54 P Okay, I'm going to reverify the checklist. I'll be standing by on your Roll Gyro.

97 37 06 P Roger.

97 37 08 C Looks right on in attitude here, look out the window.

97 37 10 P Looks good, Jim.

97 37 18 C Those mothers really fire, don't they?

97 37 20 P Yes, they really jerk you.

97 37 27 C Your deadband is not as tight as it was.

97 37 29 C It is for roll and pitch.

97 37 40 C Okay, we're at 2:18.

[REDACTED]

97 37 42 P Roger.

97 37 47 C If you feel there's something wrong with that RCS, holler, and I'll put you in the DIRECT.

97 37 50 P Okay, very good.

GUAYMAS

97 37 57 CC Gemini 4, Guaymas CAP COM.

97 37 59 C Roger, Guaymas. Gemini 4. T<sub>R</sub>-5 Checklist is complete.

97 38 01 CC Roger. I'll give you a mark at 1 minute 30 seconds.

97 38 03 C Roger.

97 38 11 P All you have to do, Jim, is to fire and fly her through.

97 38 18 P And I'll call for you - arming your switch.

97 38 20 C Okay.

97 38 22 C That's all I got to do, ARM the Squibs, right?

97 38 23 P Yessir.

97 38 25 CC 3,2,1 MARK!

97 38 27 C Roger. Right on.

97 38 51 C Doesn't the RCS propellant firing look good?

97 38 54 P Yes.

97 39 03 C Just a sec.

97 39 05 P Okay, stand by.

97 39 08 P Got the ..... Got the adapter. There is no question about it.

97 39 13 C No question about it. The old adapter's gone.

97 39 19 CC Gemini 4, would you confirm adapter sep?

97 39 20 C Adapter sep., no doubt.

97 39 23 CC We have adapter sep.

97 39 23 P Okay. Stand by to arm your squibs.

97 39 25 C Roger.

97 39 27 P Arm your squibs.

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[REDACTED]

97 39 30 C 1,2,3,4.  
97 39 32 P I think that thing's counting a little early, Jim.  
97 39 35 C Okay.  
97 39 37 P I'm going to fire it by manually.  
97 39 37 C How come we've got a yellow - oh, that's right.  
We're supposed to have .....

97 39 38 P Jim.  
97 39 39 C What?  
97 39 42 P I'll fire it on their MARK. I think that timing's  
early.

97 39 47 C Go ahead and arm it.  
97 39 51 CC 10, 9, 8, 7, 6, 5, 4, 3, 2, 1, - retrofire!  
97 39 59 P It fired a second early.  
97 40 10 C We're home, buddy.  
97 40 13 CC Gemini 4, do you confirm all retros fired?  
97 40 20 C All retros fired auto. They seem to be a minute  
before - a second before your countdown. Attitude  
probably was within about a degree or so.

97 40 25 CC Roger.  
97 40 30 P Okay, Retro Jett, ARM. It was a nice show, Jim.  
97 40 36 P Retro Jett, PUSH.  
97 40 38 C I take it, Eddie, Babe.  
97 40 40 P Yes.  
97 40 42 C You got it?  
97 40 44 P There it goes!  
97 40 47 P Looka there! Hey, there's the pump package! Ha! Ha!  
I see it!  
97 40 48 C Did you?  
97 40 49 C Retro sep., and Ed says he sees a pump package.  
Ha! Ha!  
97 40 51 CC Do you confirm retros sep?  
97 40 54 C Sep, and Ed says he sees the pump package, Ha! Ha!  
97 40 57 CC Say again.  
97 40 58 C Retros sep, and Ed says he saw the pump package.

[REDACTED]

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97 41 00 CC Roger.

97 41 01 P Give John a pat on the back.

97 41 03 P Okay. Retro POWER is SAFE.

97 41 10 P Retro Jett, SAFE.

97 41 11 C Retro Jett, SAFE.

97 41 13 P Retro Squibs, SAFE.

97 41 14 C Retro Squibs, SAFE.

97 41 15 P . . . FDR. Leave it on PLATFORM. Leave it on RATE. FDI is on LOW. You want it on LOW or HIGH, Jim?

97 41 23 C I want it on HIGH.

97 41 27 P Okay. Attitude Control, REENTRY RATE COMMAND, Scanner is OFF. Roll Rate gyros are all ON. Tighten and lock restraint harnesses. Hatch pawls in neutral.

97 41 37 P We're not in neutral, check yours.

97 41 42 C Mine are in neutral.

97 41 44 P Mine were in LOCK, where they should have been.

97 41 46 P Okay, Cabin Fan ON. ECS O<sub>2</sub> heater is OFF. Platform, FREE . . . . . thruster is OFF. Check and lock restraint harness. Hatch pawls should be neutral.

97 42 01 C Okay, let's see.

97 42 06 CC Gemini 4, Guaymas. I can give you a mark at T<sub>R</sub>+3 minutes.

97 42 07 C Okay.

97 42 11 P If you don't have it, I can give it to you anytime. We make these at anytime.

97 42 15 C We make these mistakes all the time, huh?

97 42 17 P Right.

97 42 23 C Okay, I'm going to have it in just a minute here.

97 42 27 C Give it plenty of . . . . .

97 42 30 P Yes, I can. You have 30 seconds to go.

97 42 32 C We'll have to put the roll in shortly.

97 42 42 P The first blood pressure came disconnected. I'm pumping it up again.

97 42 55 CC Stand by for a mark at T<sub>R</sub> +3 minutes.

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[REDACTED]

97 43 00 CC MARK! 3 minutes.  
 97 43 01 P Got that, Jim.  
 97 43 02 C Right.  
 97 43 03 P I've got a blood pressure for them.  
 97 43 05 C Ed has a blood pressure.  
 97 43 13 P Okay, this should be at 400 K, Jim.  
 97 43 15 C I know it.  
 97 43 18 P Starting the roll.  
 97 43 20 C Yes.  
 97 43 21 P Okay.  
 97 43 23 C I started my roll about 30 seconds ago.

TEXAS

97 43 30 CC Gemini 4, Houston CAP COM.  
 97 43 35 C Go ahead, Houston. Gemini 4.  
 97 43 40 CC Roger. You started your rolling reentry?  
 97 43 41 C Yes, I have.  
 97 43 42 CC Roger.  
 97 43 44 P Okay, Jim. We're going to have blackout here in  
 .....  
 97 43 48 CC Your weather is still very good, Jim.  
 97 43 49 C Okay.  
 97 44 56 P About 2 1/2 minutes till blackout, Jim.  
 97 44 01 C There goes the adapter - the retro adapter.  
 97 44 02 P Where?  
 97 44 03 C See the antenna even. Even the antenna sticking up.  
 97 44 05 P Ah! I see it!  
 97 44 06 CC Say again.  
 97 44 10 C We just saw the retro adapter go by. It even had  
 the antenna sticking out.  
 97 44 15 CC Very good.  
 97 44 18 P I can see all those four nice rockets in there.

[REDACTED]



97 44 23 CC Probably go into blackout in about another minute, Jim.

97 44 25 C Okay.

97 44 27 P Hey, tell the Doc I'll get an extra one for bonus points.

97 44 30 C Okay.

97 44 32 P Get ready for the g Hawaii.

97 44 36 CC The call words of the carriers in the area are Sinclair and of the airplanes are Inkspots.

97 44 39 C Sinclair and Inkspots. Roger.

97 44 44 C Okay, at 100 000 feet we get the Landing Arm ON. One thousand, get the High Altitude Drogue.

97 44 49 P That's affirmative.

97 45 01 P Feeling great, how about you?

97 45 03 C Okay.

97 45 05 CC It looks like it may be 11 or 12 miles short, Jim. Very good.

97 45 08 C Okay. I'm sold.

97 45 15 P Hey, look at it burning up, Jim.

97 45 18 C There goes the adapter. It's burning.

97 45 23 C Look at us, we're making fire, too.

97 45 25 P Yes, we're putting out ionization layer. They're not reading us anymore now, probably.

97 45 30 P Look at the adapter burn up!

97 45 31 C Yes.

97 45 37 P Not any doubt about those retros firing, is there?

97 45 38 CC Gemini. Gemini 4. That last distance is wrong. You're probably about 40 or 50 miles short.

97 45 41 P They seem to fire longer though, than I thought they would. I guess you're waiting for them.

97 45 47 C Yes.

97 45 49 P Makes a nice kind of pinkish-orange cast. The fire around it, doesn't it.

97 45 54 C Yes.

97 46 13 P Okay, there's a Reentry Rate Command coming up.

[REDACTED]

97 46 18 C The g's are starting to build.

97 46 23 C I don't have ammonia yet. ....

97 46 27 P It sure is. Look, you can see - looks like three things coming together out there. Cones of fire for some reason.

97 46 35 C Like pieces of rock, isn't it?

97 46 39 P Yes. There goes Florida. Is that Florida?

97 46 42 P I believe it is. See it on your side?

97 46 43 C Yes, here comes the g's.

97 46 49 P Okay. Next thing to look for is 100 K. Sit back and relax. We aren't going to do much about it from here out.

97 47 01 C No. A lot better than the centrifuge.

97 47 03 P Yes, I see a little bit of a green in that - I guess that it's just the sun reflecting. Now here they come. Is that 3?

97 47 13 C No, we haven't gotten any on the indicator yet.

97 47 20 P Oh, I thought you said we already had some.

97 47 23 C Well, I thought we did. The back part was on ..... it sort of settled down .....

97 47 30 P See the green in the .....

97 47 32 P You know, it's not as much as fire as I thought there'd be.

97 47 35 C No, there isn't. Yes, there is green, isn't there?.

97 47 37 P Ah, there comes the g's.

97 47 39 C Yes, the g meter's not working.

97 47 40 P Okay.

97 47 44 P Milt says the g meter isn't working, and I agree.

97 47 47 P I think we've got now about 5 g's. Wouldn't you say so?

97 47 51 C Yes, it's only gone up to 2 right now.

97 47 54 C You know, it's kind of nice to have some g's back again.

97 47 59 P Yes, it is.

97 48 01 C It's making me dizzy going around in circles. Look at paint coming off my window.

[REDACTED]

~~CONFIDENTIAL~~

97 48 06 P Yes. Now we're really getting a little more layer.

97 48 13 C There's 3 g's now.

97 48 15 P Okay, I guess it's right.

97 48 17 C Yes.

97 48 25 P Boy, these RCS thrusters in yaw are firing an awful lot.

97 48 33 C Five.

97 48 37 P They're red hot, Jim.

97 48 39 C Yes.

97 48 42 C Six.

97 48 48 C Seven.

97 48 52 P You can take, old buddy.

97 48 54 C You're right, it is. Isn't it? .....

97 48 58 C There's 100 000.

97 49 01 P Why don't you .....

97 49 09 CC Gemini 4, Houston CAP COM.

97 49 13 P ..... the fire.

97 49 15 CC Gemini 4, Houston CAP COM.

97 49 25 C I'm reading you loud and clear. How me?

97 49 33 CC Gemini 4, Houston CAP COM.

97 49 37 C Okay.

97 49 41 C We're climbing back up again, it says now.

97 49 44 C Four g's.

97 49 44 CC Gemini 4, Houston CAP COM. We'll have a helo over you by the time you're on the water.

97 49 46 C Go ahead, Houston. Gemini 4.

97 49 49 CC Gemini 4, Houston CAP COM.

97 49 53 CC Gemini 4, Houston CAP COM. We should have a helo over you by the time you're on the water. His call sign will be Sinclair 52.

97 50 01 C ..... 52. Roger.

97 50 05 CC Roger. What is your altitude now?

97 50 07 C We're going through 82. The g's are down to about 2. Landing Arm's ON.

~~CONFIDENTIAL~~

[REDACTED]

97 50 13 CC Say again.

97 50 20 C I said the Landing Bus is ON.

97 50 23 P Okay. What's our altitude?

97 50 23 CC Say again altitude.

97 50 25 C We're coming up on 50.

97 50 26 CC Gemini 4, I missed that last transmission, but you should be coming on drogue chute deploy in another 20 seconds.

97 50 27 P Okay.

97 50 35 P Got the drogue out, Jim?

97 50 37 C No, not yet. I'm waiting for 40 000.

97 50 41 CC Landing bus armed?

97 50 42 P Okay. The Landing Bus is Armed. Isn't it?

97 50 44 P Got the drogue?

97 50 47 C I'm coming on with the drogue now.

97 50 49 P Okay. We're starting to oscillate. The drogue caught it.

97 50 53 CC Gemini 4, you should have drogue by now.

97 50 54 C We've got the drogue out now.

97 50 56 P About 40° oscillation.

97 50 59 P Whang, whang, whang. - Okay.

97 51 01 C Let's go to RATE COMMAND.

97 51 03 P Rog.

97 51 06 P Pretty good oscillation, old buddy.

97 51 08 C Yes. It is, isn't it?

97 51 11 P Yes, the Rate Command doesn't seem to - Ah! Dampened it out.

97 51 13 C Okay, we're at 28 000, Ed.

97 51 15 P Okay, I can see the drogue up there, too.

97 51 18 C We got a good drogue. It's holding fine.

97 51 25 C 23.

97 51 27 P Okay.

97 51 30 C Let me see if the drogue is going to hold it by itself.

[REDACTED]

[REDACTED]

97 51 31 P I've got one of your arm rests. Get your D-ring.  
97 51 35 C Okay.  
97 51 35 P Get your D-ring out, Jim.  
97 51 37 C Roger. .... coming off. Have I got it?  
97 51 40 P Yes.  
97 51 43 C I guess I should get our D-ring out, shouldn't I?  
97 51 45 P Huh? Right.  
97 51 49 C Okay, 16 000.  
97 51 51 P Okay, I'm in a position to eject, if necessary.  
97 51 52 C Okay, Ed. Let's hope we don't have to.  
97 51 58 C Roger, Cape Control. We're just about ready to put  
the parachute out. Stand by.  
97 52 05 C Okay, parachute's coming.  
97 52 11 C See it?  
97 52 12 P I don't see it yet.  
97 52 13 C Yes, I see it.  
97 52 15 C It looks good, Ed, babe.  
97 52 16 P Right in the sun. I can't see it.  
97 52 20 C Looks good.  
97 52 21 P Good chute.  
97 52 22 C There's the de-reef.  
97 52 23 P And it's a good one, isn't it?  
97 52 25 C Nobody can read me now, but does that parachute look  
great!  
97 52 29 CC Gemini 4, you should be coming upon main chute  
deploy.  
97 52 30 P You're not kidding!  
97 52 32 C Okay, take your blood pressure quickly.  
97 52 33 P All right.  
97 52 35 C We're at 6000 .....

97 52 37 P Ah, shoot. It came out.  
97 52 40 C Did it come out?  
97 52 42 P Yes. Stand by.

[REDACTED]

[REDACTED]

97 52 43 C Hurry up, we can't wait too much longer.  
97 52 45 P This is the important one for them though.  
97 52 47 C I know it, I know it.  
97 52 49 C How do you feel? I feel great.  
97 52 52 P I felt kind of funny during the spinning.  
97 52 53 C I was dizzy during .....  
97 52 54 P I was, too. Okay, it's coming out now.  
97 52 55 C Coming out now?  
97 52 59 P Oh, no, no, no! Don't go yet.  
97 53 00 C Okay.  
97 52 06 C Ready?  
97 53 07 P No.  
97 53 10 C Come on, I'm not going to wait past 5000.  
97 53 14 CC Gemini 4, Houston CAP COM. Do you read?  
97 53 15 P Okay, just a minute. Make sure it goes all the way down.  
  
97 53 17 C Okay, you ready?  
97 53 18 C We're at 5000 on my mark.  
97 53 20 C 2, 1, MARK!  
97 53 23 P That wasn't so bad.  
97 53 25 CC Gemini 4, Houston CAP COM.  
97 53 26 C Couple of broken arms, and you're all right.  
97 53 27 P Okay.  
97 53 30 C Gemini 4, here. We're right-side up. Two point on the parachute, and everything's fine.  
  
97 53 36 CC Roger. Understand. Everything is fine. We should have a helo to you in about 5 or 10 minutes after you're on the water.  
  
97 53 40 C Okay. Don't let them wait too long. I want to get rescued in a hurry. Tell Doc Berry we got a blood pressure.  
  
97 53 42 P Okay, D-ring covered.  
97 53 49 C Take another one, too.  
97 53 51 P Yes. D-ring?

[REDACTED]

~~CONFIDENTIAL~~

97 53 53 C D-ring covered. We don't want that one out.

97 53 54 P No.

97 53 55 C How you feeling, Ed?

97 53 56 P I feel good. How about you?

97 53 59 C So do I. I feel great.

97 54 00 P Feel like a tiger. Feel like I could eat him up.

97 54 03 C Feel a little warm. Let's see.

97 54 04 P Okay.

97 54 05 C Cabin temperature's only 55. Suits are 70.

97 54 14 CC Say again, Jim.

97 54 16 C The cabin temperature is only 55. The suits are up to about 70.

97 54 25 C Our poor spacecraft's all burned up.

97 54 28 CC Roger. Both of you feeling okay?

97 54 30 C Yes, we're both feeling great, Gus.

97 54 31 CC Good.

97 54 32 P Clean the electrical switches out, Jim, while I sit here.

97 54 35 C Okay. Let me get them.

97 54 45 P I've got the Rescue Beacon ON already.

97 54 51 C Rog.

97 54 53 CC Let us know as soon as you're on the water.

97 55 01 C Hey, we got some weather .....

97 55 02 P Okay, the heater's OFF. You got it? Good RCS.

97 55 06 C How are you feeling, Ed?

97 55 07 P I feel good.

97 55 09 C Hey, there goes the R & R can off to one side.

97 55 17 CC Say again.

97 55 20 C The R & R can is floating down with us.

97 55 22 CC You're coming in a little garbled. Try to talk slower.

97 55 26 C Our R & R can is coming down right next to us.

97 55 30 CC We can't reach you, Jim, you're fading out too much.

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[REDACTED]

97 55 31 C Okay, we're at 1000 feet, Ed.

97 55 32 P Okay.

97 55 35 C Now get ready. Remember water.

97 55 40 P I'll stand by. Water seal. Let's go down -

97 55 41 CC Oh! Okay. The R & R can is floating by.

97 55 44 C Let's go down now. Okay, you get the Inlet Snorkel UP when we hit.

97 55 45 P When we hit. I'm standing by on it.

97 55 46 C I'll jettison the parachute.

97 55 52 P Get ready for arrival.

97 55 55 C Roger. We got 300 feet.

97 55 56 P 300 feet.

97 55 57 C As John says, how do you get ready for the arrival?

97 56 00 CC We figure you ought to be touching down in about 20 seconds.

97 56 02 C Roger, we're indicating 100 feet right now.

97 56 08 P Pretty good impact. Okay. Jettison the chute.

97 56 14 C Chute's gone.

97 56 15 P Yes, and your inlet snorkel's UP.

97 56 19 C Okay, let's see if we're leaking.

97 56 22 C Yes, but are we leaking? That's the big thing.

97 56 24 P No, I don't think we're fuming. I don't hear any gurgling.

97 56 28 P Okay.

97 56 30 P Whoo! I smell something, but I don't think it's bad. Gee, I feel great!

97 56 38 C So do I, Ed! That wasn't too bad!

97 56 40 P Yes, buddy. Good show!

97 56 43 C Okay, let's finish up the checklist.

97 56 47 P Let's clean every switch up in this mother.

97 56 58 C Gemini 4's on the water, and we're floating fine. No leaks.

97 57 01 P I smell a little of that stuff.

97 57 02 C Yes.

[REDACTED]



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97 57 13 C Oh, are our sea dye markers out?

97 57 15 C Let's see. You got the Rescue Beacon ON?

97 57 16 P Yes. I put that on right away.

97 57 20 C Put it on with the light if they're that close.

97 57 22 P Okay.

97 57 27 CC Gemini 4, Houston CAP COM. How do you read?

97 57 30 P Okay, let's go to HF.

97 57 31 C Okay.

97 57 35 P Ye-hoo!

97 57 36 P Okay, let me give you this one, Jim.

97 57 40 C Don't you have one over there, really?

97 51 41 P Yeah, it's packed with garbage on top of it. It really stinks in here, doesn't it? Let's go to O<sub>2</sub> High Rate, you want to? Get some fresh air?

97 57 45 P Yes.

97 57 52 C What's the matter? O<sub>2</sub> High Rate doesn't come on. I guess we must have all the lights off .....

97 58 20 P Negative, Omnibus.

97 58 25 P Roger, read you 5 square, Omnibus.

97 58 27 P Hello, Omnibus ..... Gemini 4.

97 58 40 CC Gemini 4, Houston.

97 58 45 P You're coming through five square, and you're sounding great. There's nothing you can do but pull us out.

97 59 01 P Well, what alternatives do we have right now?

97 59 15 P Roger, can you put the collar on us with the helo?

97 59 19 P Can you put the collar on us with the helo?

97 59 24 P Roger. We'd like to come out with the collar and with the helo.

97 59 38 C Listen, we'd better get those.

97 59 55 CC Gemini 4, Houston. You're about 40 to 50 miles from the aircraft carrier.

98 20 41 CC Gemini 4, this is Omnibus 64. Your rescue helo is coming in to put the collar on for you now. Over.

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98 20 50 C Coming now. Roger. Roger. Roger.  
98 20 53 CC The Peek-a-boo would like to know the condition of  
you two. Are you both in good shape?  
98 20 58 C We're both in excellent shape. That's affirmative.  
98 21 00 CC Roger! Roger!  
98 21 56 CC Gemini 4. The doctors would like to know if you're  
going to return in your space suits or not. Over.  
98 22 00 C Roger. We'll stay in our space suits for one more  
blood pressure.

(The astronauts get out of the capsule)

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