ASTP (USA) MC641/1
Time: 09 32 CDT, 194:12 GET
Date: 7/23/75

PAO This is Apollo Control. Still in acquisition for the next 17 minutes through ATS-6 satellite. To correct an error in an earlier discussion on this loop about the two maneuvers following docking module jettison. I believe I erroneously mentioned 6-1/2 feet per second, it should have been meters. The actual calculated maneuver strengths for - on the first maneuver at 200 hours even will be 30.2 feet per second, that's feet per second, which will move Apollo into an orbit measuring 118.3 by 125.2. Second maneuver to produce the equit - equal period, equidistant orbit between the docking module and Apollo will come at 204:12 55 and will be 23.1 feet per second, yielding an orbit measuring 113.7 by 120.7. Docking module jettison is scheduled at ground elapsed time of 199:25, approximatley 5 minutes - 4 minutes later than the flight plan original time, premission flight plan. Still up live for 15 minutes over ATS-6 satellite. 194:19 Apollo Control standing by.

END OF TAPE

ASTP (USA) MC642/1
Time: 09:45 CDT, 194:25 GET
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CC-H Apollo, Houston. We're getting down to about the time where you should be getting ready to turn on your SIM BAY experiments and we would like on this time instead of using detector 2 on the EUV, we would like to use detector 1.
ACDR Okay.
CMP Okay, Crip. How do you read?
CC-H Loud and clear Vance.
CC-H And Apollo, we've been sitting here considering - while we're setting in tight deadband and doesn't appear to be any real requirement, to save us a little propellant, we recommend you go ahead and change your DAP to 5 degrees, for deadband.
CMP Okay. Will do.
CMP Houston, Apollo.
CC-H Go ahead, Vance.
CMP Okay. I'm not in a position to see that light, what was it?
CC-H It was the O2 flow. It - it's still due to those - We were trying to find out if we could - -
CMP Okay.
CC-H - - if we could get away - around - going ahead and getting this purge out without getting those - those flow. And we're still looking at that. Hate - hate to put you all the trouble for the C&Ws.
CMP Yeah. The only problem with that is, is when it goes so much, we tend to get careless and it's like the guy that cried wolf too many times.
CC-H I sympathize with that, wholely. I - you know, as long as we're got you through the ATS here, I can certainly come up and tell you each time what it is because we're looking at it, if you'd like that.
CMP Why don't you do it right during this period because we - have the guys packing things and stuff.
CC-H Sure. We'll do it. And we're assuming you're going to get the SIM BAY stuff there pretty soon. Is that correct?
CMP Tom - I'm looking at it right now.
CC-H Rog. Okay. And also, whenever somebody gets a chance to work it up, we're still standing by for that morning status report.
CMP Okay. So we're going to the ops on the X-ray helium glow and EUV per flight plan. Right?
CC-H That's affirmative. Only modification is that on EUV, we want to use detector 1.
CMP Okay.
CC-H Vance, I'd like to mod my mod. We want - with looking at that 5 degree dead-band we just went to EUV we'd like to use detector 2 as nominal on the flight - on the cue card.
CMP Roger. Back to detector 2.
CC-H Just shows you got to be flexible.
CMP That's right. Okay. And, do you want high voltage power on, I guess, on the X-ray - you still want it on or not?
CC-H That's affirm. We want it - we want to turn it on and leave it.

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CMP Okay. That should take care of the SIM BAY and that'll get you a P52.

CC-H Okay. Looking great here, and if we can watch at all, we'll do so. Otherwise, we'll pick up the report probably over Orroral. We're - we got you for about 3 more minutes here

CMP Rog.

CC-H Okay. We're going to be losing you shortly on the - on the ATS and I'm going to have you at VHF at Orroral here in about a minute and a half. And we're watching the 52. If we don't get it all, we'll hollar at you later.

CMP Okay, Crip.

CC-H Apollo, Houston. We're with you on VHF for about 5 minutes here.

CMP Okay, Crip.

CC-H And Vance, you no - no need to acknowledge if you're working on 52 there. We did not see detector 2 selected on that EUV when we went over the hill. Just a reminder

CMP I couldn't here you Crip. You're too weak. Please repeat (garble).

CC-H Roger. We're saying, did not see detector 2 on the EUV. If you get a chance you might reselect that for us.

CMP Okay. Now we're reselecting detector 2.

CC-H Thank you.

CMP Okay. Did you see her.

CC-H We're VHF and don't have data right now.

CMP Okay. Well we can try it again.

CC-H Apollo, Houston. We're one minute from LOS - come to - see you in about 30 minutes at Quito.

CMP See you at Quito.

END OF TAPE

ASTP (USA) MC643/1
Time: 10:02 CDT, 194:42 GET
7/23/75

PAO This is Apollo Control. Loss of signal at Orroral Valley. Next station, upcoming, final pass this morning through Quito, Ecuador - followed by Merritt Island Launch Area, Bermuda and, of course, ATS-6. We'll return in 25 minutes, at Quito. This is Apollo Control, at 194:41.

END OF TAPE

ASTP (USA) MC644/1
Time: 10:28 CDT, 195:08 GET
7/23/75

SPEAKER All stations stand by for an Apollo Control announcement in 1 minute.

PAO This is Apollo Control, at 195:06 ground elapsed time. 50 seconds away from acquisition through Quito, Ecuador, with a brief dropout to Merritt Island and, of course, the faithful ATS-6 satellite, that served so well during these past 8 days. After the mission, the satellite will revert to its intended purpose of educational television in the Indian subcontinent. Standing by for AOS at Quito.

ACDR Hello. Houston, Apollo.

CC-H We're with you, Tom. Talking to you through Quito, for 4 minutes.

CC-H Apollo, Houston. How do you read?

ACDR Hello. Houston, Apollo.

CC-H Apollo, Houston. We're with you, Tom. Sometimes it takes us a few minutes to get locked up on uplink.

DMP Hey, Crip - I want to check a quick thing with you, on this Doppler transmitter.

CC-H Go ahead.

DMP Guess we were about 50 minutes ago - the transmitter would operate. But about 10 minutes ago, here, we were trying to get your 45 de- - We turned all the lights were - from warmup mode to - to OPERATE. And I discovered I was taking warm up to OFF. So it was off for about 10 minutes, before we discovered our problem, here. And I went back to WARMUP.

CC-H Okay.

DMP - - that's about it. See if you can see any problem.

CC-H Okay. Understand it. That's fine. Thank you.

CC-H Hey, Deke - while I got you here, could - you know, we're doing this purge, and we're trying to understand what our PPO2 reading, that we're getting out of the docking module, is. And we need to - need to verify what our configuration is, because it doesn't seem like the PPO2 is coming up as rapidly as we thought it was going to be. Can you tell us whether you ever installed that DM duct into the command module? And is it installed there now?

ACDR No, we didn't.

CC-H Okay, fine. And do we still have the DM fan running?

DMP Yeah, the fan's running.

CC-H Okay, fine. And we are only operating with one suit hose into the docking module. Is that correct?

DMP That's affirmative.

CC-H Okay. Real -

DMP We're getting regular master alarms on our 02 flow, so -

CC-H Yeah. We're - we're - we know we're purging through at - I guess we'd done some preflight judgement on how fast that PPO2 was going to be coming up. And it doesn't seem to be quite as fast.

Probably, part of that is explainable by only running with 1 suit hose.

DMP Okay. And I'm reading about 200 on both A and P, up here in the DM.

CC-H Rog. We're getting there. It's just taking a little bit longer than we had anticipated.

ACDR Yeah, Crip. Isn't 200 play? I wonder - I can't understand why people are in a sweat about it. Over.

CC-H No, Tom. It's not really a sweat. I guess - We had predicted the rate at which it was going to come up. It just seemed to be a little bit slower than what we had anticipated. No problem.

ACDR Okay.

CMP In the consideration of - purely - us working up there, or what? I - I (garble) why you'd require a high PPO2, Crip.

CC-H Oh, they're just looking at worst case, after we shut off the docking module - for this cryo freezer, on the nitrogen - If it was worst case putting - putting out nitrogen, they want to make sure we keep the PPO2 kind of - It's got lots of balances for safety, there.

CMP Okay.

ACDR Okay, Crip. I got the Doppler receive to operate on, exactly on time, at 195:03:00.

CC-H Okay. We're going to go over the hill, here, shortly. Pick you up again at MILA in about 2 minutes.

CC-H Apollo, Houston. AOS through MILA. Sould - be with you about 55 minutes, here.

ACDR Okay. And why don't you check with the Doppler experimenter, Crip. How long does it take for - How fast do these Doppler reels -

CC-H Okay. What - if you're looking at that tape recorder, the reels - when they're going - you can - it's obvious to you. They're really spinning around. But if - there - there's a long periods of time they're on and off. But we can get some more details for you.

ACDR Okay. Well, they're not recording now.

CC-H Okay.

CC-H What you do is - when you look at it a little bit later, and you can just verify that the position has changed.

ACDR Okay.

CC-H And my surgeon is anxiously standing by, anytime you guys have managed to put together your morning report.

ACDR He can just stand by for awhile. We've got snakes all over this place.

CC-H Roger that.

CC-H Apollo, Houston. We show that the furnace is still operating. And it's still got those samples in it, we assume, so don't want to - don't want to forget and leave those there.

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CMP Right. Deke's turning it off now.
CC-H Okeydoke.
CC-H And that was a high 02 flow on your C and W.
ACDR Crip, I'll get these - these angles set in for you, for the ATS.
CC-H Okay. Appreciate it.
CC-H And, for Vance - whenever you get a chance, we'll take some P52 results.
ACDR Okay - if you're still through MILA - ATS is trying to lock, although, it's got lots of static.
CC-H Okay. How do you read me now?
CC-H Okay. We should be back with you, now, through the ATS.
ACDR Crip, what would Gilley do to get ATS locked on? Over.
CC-H Okay. Might try a VERB 30 and look at the GNP if you haven't got the angles.
CC-H How about trying minus 25 at 221?
CC-H Okay. I've got VHF through Newfoundland, talking at you till you get ATS locked up, Tom.
ACDR That should do it.
CC-H How do you read me now?
ACDR Loud and clear.
ACDR Are you ready? The one thing where the (garble) the timeline is about the time it takes to stow and - transfer this equipment. That's why I'm glad we started early.
CC-H Rog. How you doing now? You think you're going to make it all with no problem?
ACDR Yeah, we will. But we started about 40 minutes early. That's how we're going to make it.
CC-H Roger.

END OF TAPE

ASTP (USA) MC645/1
Time: 10:45 CDT, 195:25 GET
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ACDR Crip, how do you read?
CC-H Loud and clear. How me?
ACDR Okay. Just to review, you want up in the docking module that DM to - on the doppler from WARMUP to OPERATE there on time in the flight plan which shows about doppler's stress to operate about 195:55?
CC-H That is affirmative.
ACDR All right.
CC-H That's another HIGH O2 FLOW.
ACDR Thank you.
ACDR Houston, Apollo.
CC-H Go ahead.
CC-H Apollo, Houston. Go ahead.
ACDR Stand by, Crip.
CC-H Okay.
DMP Hey, Crip. The question is page 13-2 DM chet - prep. Paragraph 5 says remove from E2 the alternate contingency flight plan and stow it in E3 and Tom's questioning why do you want it?
CC-H Stand by one.
CC-H The reason that we put that in there is if per chance that we should lose the ATS between now and entry. That has a no ATS plan in there and that would just minimize the call ups that we would have to - have to make to you. And that's the only reason we have it there.
ACDR Okay. We'll pull it out and keep it.
CC-H And, that's another HIGH O2 FLOW you got.
CMP Okay.
CC-H Apollo, Houston for the AC. Tom, when you have had a chance to go back and check the Doppler or tape recorder, we would appreciate verification that it was operating.
ACDR I already checked it again. I - I recorded it when I hooked the thing up a couple of days ago - you know, in the warmup. I went to - went to operate and those reels didn't move from the time - from when I first checked it in that warmup. I'll check it again.
CC-H Yeah. They're - they - you wouldn't expect them to. They should have changed now after a period of 30 minutes of the last, they should have at least run sometime.
ACDR Stand by.
CC-H Okeydoke.
ACDR Hello, Crip.
CC-H Go ahead, Tom.
ACDR These reels haven't moved.
CC-H Roger. Understand. They've not moved. And we can verify that everything, as far as you can tell, is hooked up properly. Is that correct?
ACDR Yeah. Roger. The other day I put - we had the doppler - UVA doppler in and A circuit breaker in, I went to WARMUP, you know, exactly on time. Then I went to operate and it's been in operate ever -

exactly at the call on time 95:03:00. And I recorded these reels when I first hooked it up and I recorded them when we went to operate and these babies haven't changed one bit.

CC-H Okay. Is that true on both sides of the units, all four of them?

ACDR That's right. All four reels are recorded A, B, C, and D.

CC-H Okay. Thank you.

ACDR I've rechecked all the connections. I've got the orange band on each connector and everything.

CC-H Apollo, Houston. I - I could use the DP if he's got a minute there. I'm afraid we're going to have to interrupt his work there to have him run a small procedure.

ACDR Okay. Maybe I can run it for him and we'll - unless he's up there. He's getting the probe squared away.

CC-H Okay, Tom. Let me - let me tell you what it is. Regarding this PPO2 purge we've been trying to raise up, we would like to go ahead and get - get all the O2 in there that we can. And what we would like to do is to run through just DM/CM O2 purge and take advantage of the last 6 pounds of O2 that we've got left in the DM tanks. That's going to require (garble) that procedure that's on 15-1. The only small thing is that we anticipate running the tanks dry so we're going to not be able to get the PPO2 up to the 250 milimeters called out for in the procedure, we're just going to have to run it till we get the O2 quantity down to zero or the - you - you feel the O2 stop coming out that little nozel.

ACDR Is that in the systems book?

CC-H No sir. That's in the DM checklist.

ACDR Okay. Deke's on the headset; he's reading you.

CC-H Okay, Deke.

ACDR I can -

CC-H Did you - did you copy what I was telling Tom about we wanted to run that DM/CM O2 purge?

DMP Yeah. I did, Dick.

CC-H Okay. Again - a caution about the - the tanks are going to run out and your - before you get to PPO2 up to what it's called for, the 250 milimeters and so you can go ahead and stop it as soon as you feel the tanks are empty. One other item that's in there. You might as well go ahead and open up the supplemental O2 flow also to get all of the flow you can out.

DMP Good idea. Okay. We'll do her.

CC-H Okay. And before you initiate that if you can get somebody in the command module to go ahead and close the waste stowage vent valve, we'll stop that purge through there.

ACDR Okay. I'm taking the waste stowage vent to QD off.

CC-H Okay. Tom, if you want, it's surely your option, we would like to keep that pin on there in case we need to put in a little bit later. You can just go ahead and turn the valve to - to off and leave the QD on. It's okay to go ahead and enter with it there. We are going to probably be doing some more purges later because we don't have

enough 02 - don't have enough 02 in the DM.

ACDR Did - just one point on this procedure - not that we were ever going to use it again - but I forgot to mention last time, it never tells you to turn on the 02 regulators and when out of line, you can't purge. At least not in this vehicle.

CC-H You're right.

END OF TAPE

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CC-H - - probably be doing some more purges later bacause we don't have enought 02. Don't have enough 02 in the DM.
ACDR There's just one point on this procedure, not that we're ever going to use it again but forgot to mention the last time, it never tells you to turn on the 02 regulators and without them on you can't purge. At least not on this vehicle.
CC-H You're right.
ACDR Hey, Crip there's another point here in this procedure. I don't think we buy anything by going to supplemental because we got to maintain pressure between 250 or 275 otherwise we going to start (Garble) in the DM as I understand it.
CC-H Okay. We weren't sure that - that you might not need it just to get it up get flow enough to keep that, but you can play that by ear.
ACDR Okay.
CMP Purge is underway.
CC-H And for the AC, Tom, the - only idea we come up with right now on that doppler recorder is that there are two connectors on the recorder itself. One is a GSE connector and the other on is a flight one. The cable will go into either one of them. Want to verify that if you will please that it is connected to the flight connector.
ACDR Okay. I checked that before. Let me check it again. Better believe it. It's connected to flight.
CC-H Okay. And the circuit breaker on 270. Before you reminded us of that already. Right?
ACDR I check that every night and every morning and at warm up and then I went exactly to operate on time.
CC-H Roger.
ACDR I can put my hands on this recorder here in the silver box. It feels like there's little vibrations in there. Like something's going on.
CC-H Okay. Copy that.
ACDR Crip, don't suppose that when they labeled this flight GSE that they got the things backwards do you?
ACDR I'm sure it's all been checked out.
CC-H Well, I ran it once at the Cape and I connected it to the flight one and it ran.
ACDR Okay.
ACDR Crip, when you ran this thing at the Cape, how fast do these reels turn over? Can you see motion when those numbers turn?
CC-H Yes sir. It's real obvious when it goes - when it starts going around. (Garble) problem is runs liks every 12 minutes for only a short period of time.

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CC-H It only runs about 10 or 11 seconds when it is running.
ACDR How many numbers does it go through?
CC-H Oh itspins a - it's a little wheel down there and it goes all the way around several times.
ACDR Have you got any other suggestions on this bear?
CC-H I'm afraid we haven't right now. We're still scratching our heads.
ACDR I have quadruple rechecked everything. We got the white dot to the white dot on the flight recorder thing and the switches, the breakers, everything.
CC-H Okay, Tom. We appreciate all your efforts.
CC-H Okay, Tom. Right now we're - we're pondering cycling switches and that kind of stuff. You can carry on with your other activities and we'd like you to come back and take another look at it a little bit later. About 5 minutes or so to see whether - to see whether anything's changed.
ACDR Okay.
CC-H And for Vance, don't know if I mentioned earlier or if you heard me earlier but anytime he gets the chance, we'll take his P52.
CMP Okay. We'll give you the P52.
CC-H The results that is.
ACDR Crip?
CC-H Yes, sir.
ACDR Crip. Our cabin pressure's now below around 5, 5 and 1/2 I mean.
CC-H That's affirm. We watched it here.
ACDR I'm keeping on eye on it up here so we don't get over 275.
CC-H Okeydoke.
CC-H For the DP, Deke, why you're sitting there playing with your PTO2 you got time to listen to some words about Red Tide?
DMP No, not unless its time critical, Crip, because I'm not sitting here. I'm still trying to get things tied down.
CC-H Okay. Go ahead.
DMP If it's time critical - -
CC-H Well - If it's critical, I'll take it.
CC-H Well let me go ahead tell you - you just listen to me and you go ahead and do your work to the - where the next time we come across the States we are going to be - be back in a position to get the Red Tide, basically same area we talked about yesterday. Adn all we're going to do is just ask you to photograph a strip starting by Cape Code going up - going up the Eastcoast and if you can go ahead and do that up to about Nova Scotia, well that's all we're after and I can talk to you about it when we get there.

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DMP Sure.
ACDR Okay (Garble) will do her.
CC-H We see -
CC-H Deke, we see the cabin pressure coming down now if you think the tanks are empty you might well go ahead and stop it.
DMP Okay, she's - about 8 percent.
CC-H Cabin's pressure's coming down now, why don't we go ahead and terminate it?
DMP Okay.
DMP Okay, Crip. I closed the dump. I'll let her bleed on down here a little bit and keep a close eye on the pressure.
CC-H Okay, fine.
CC-H And, for the AC, Tom, since we were talking to you through that time period, we'll need to verify that we did get the doppler transmitter to operate.
ACDR Deke's working on it right now.
CC-H Okay.

END OF TAPE

CC-H - - if we were talking to you through that time, we need to verify that we did get the Doppler transmitter to operate.
ACDR Deke's working that right now.
CC-H Okay.
ACDR Okay.
CC-H And when you did that, of course, we - -
ACDR 960137 was the Doppler operating tones.
CC-H Okay, fine. And we need to get a verification on that on the systems meter down in the command module, too.
ACDR 195.
CMP Okay, Crip. Here's your P52 results.
CC-H Send it to me.
CMP Stars 4 and 34, NOUN 5, all zips; NOUN 93, plus 00112, minus 00104, minus 00036; port torqued at 194:34:50.
CC-H Thank you very much, Vance.
CMP All right.
CC-H Okay. Since we've terminated the DM-CM purge, we'd like to go ahead and open up that waste stowage vent valve and we'll continue to purge in that manner. Also, X-ray's still a problem and we'd like to go ahead and turn the high voltage off on the X-ray instrument down there at 230.
CMP Okay. You want to go back to waste purge and X-ray high voltage OFF.
CC-H Thank you very much.
CMP And, Crip. You might tell John Boyd that D3 isn't a whole lot easier to get in in weightlessness than it is at 1 G.
CC-H Didn't think it'd be too much; alignment's kind of a problem there.
CMP Yeah.
CC-H Apollo, Houston. For the AC: Tom, if you've got a chance now, we would appreciate it to recheck that recorder; we've got a couple of minutes left here on ATS.
CC-H Also, Deke, to make everybody feel comfortable here: Tom, when he pulled out the last samples out of the furnace there, can verify that putting the Crytox helped them come out fairly easy?
ACDR Yeah, they did, Crip. No problem at all.
CC-H Okay, fine.
DMP They're out and the furnace is shut down and the samples are stowed in the CSM.
CC-H Roger.
ACDR Okay, Crip. These reels haven't moved a bit.
CC-H Okay. When we go out over the hill here, we're going to have you go ahead and cycle the receiver switch to - to warm up for 30 seconds and then put it back to OPERATE. And then take another look at it about 15 minutes and see what happened.
ACDR All right, good. What time do you want that?

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CC-H You can - you can - you've got a GO to go ahead and do it now, I guess and we're going to go ahead and go over the hill here and see you about 36 minutes at MILA.

ACDR Okay. I'll cycle them back to WARM UP and then back to ON and check it in 15 minutes.

CC-H Okay. And when you do cycle that, don't - don't drop any off the station. In other words, take it through pretty rapidly to WARM UP.

ACDR Okay, it's done.

CC-H Okay. Thank you.

ACDR And check it 15 minutes, roger?

CC-H Affirm.

CC-H And Apollo, Houston. You've got a GO to go ahead and close up the DM.

CC-H Then when you've got everything tucked away like it's supposed to be.

ACDR Yeah, we're still working.

CC-H Rog. Well, we're certain that you're going to pace that up while we're over the hill.

PAO This is Apollo Control. Loss of signal through ATS-6 satellite as the Apollo crew is closing out the docking module, gathering up all the onboard garbage to leave aboard the docking module as they prepare to jettison it later on today. And in activating the Doppler receiver aboard the docking module, a data recorder is apparently acting somewhat balky, and through switch cycling it is hoped to get the recorder in motion. We'll return at next station which is Merritt Island Launch Area in 33 minutes. This is Apollo Control at 196:10.

END OF TAPE

ASTP (USA) MC648/1
Time: 12:05 CDT, 196:55 GET
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PAO This is Apollo Control. 196:43 AOS Merritt Island Launch Area in about 20 seconds. Trouble shooting still going on on the ground and aboard the spacecraft on the noppler experiment data recorder. Apparently it won't budge. We have acquisition at this time for the next 57 minutes through MILA, Bermuda and ATS-6.

CC-H Apollo. Houston. We're AOS at MILA, should be with you about an hour.

ACDR Roger. We've got tunnel hatch number 1 in and we're checking the integrity now.

CC-H Okay, Tom. Anything - any success with that recorder?

ACDR Yeah, I got some good news on part of it. I'm just recorded. Reel A and B had moved. That worked on A and B. It looked like C and D had not moved at all, or else they may have moved and came back to same place.

CC-H Okay, it's kind of unlikely they would have come back to the same place, but that's certainly good news about A and B.

ACDR So, I'm standing by and see if you want to do the procedure again. Just what do you want to do down there?

CC-H Okay, did you use - that you thought moved after you cycled that switch when we went over the hill or while ago right?

ACDR I cycled to switch, then checked when in 15 minutes and they had moved.

CC-H Good.

CMP And Cripp, hatch number 1 is in and we're venting the tunnel 1 right now.

CC-H Apollo, Houston. If you can give us a readout on the reels, we'd appreciate it.

ACDR Standby.

CMP Okay, Crip. Originally the A was 5-1/2 B 17, C 11 and D 12. After that it was going to warm up in back real fast to operate, I checked in 15 minutes, A was 9, B was 13 -1/2, C was 11 and D was still, C and D were the same. C was 11 and D was 12. Over.

CC-H Okay, we got. Thanks a lot Tom.

CC-H I guess, while we're sitting here a couple of hours, what we do need to get out of the road is, we see that battery Alpha is still charged and sometime when you get to it, we'd like to terminate that charge and also we can go ahead and set up for our logic sequency check - probably ought to just go ahead and wait on that one until we get tied up with the ATS, here, a few more minutes.

DMP Okay, I can turn that charge now if you want.

CC-H Houston, just for a little bit of information. Of course, those recorders are redumdant so A and B will, suffice if its working properly to - which it sounds like it is, to get data on it and we have seen a lock indication here on the transmitter, so we know all that's working properly.

ACDR Sounds good.

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CC-H I talked to Deke briefly awhile ago about coming up on the Red Tide which we're going to do here, about this time, and it's coming up kind of close. I don't know if you guys are gonna be set up for it or try to get the photos or not. Whatever you' want to do. It's be - it's out of window 3.

DMP Okay, how much time we got?

CC-H Oh, you're about 3 minutes away from an initiation of it. That's pretty quick.

ACDR Okay, you want the 150 millimeter lens. If they give me a couple quick settings, will get a new mag and try it.

CC-H Okay. Recommend a 50 millimeter lens, and f-stop of 6.7, (garble) 250. And recommend the orange filter if you got time to get it on.

DMP Okay, ready to go Crip.

CC-H Okay. you should be coming up on it shortly here. If you could - what they'd do is like you to just photograph coming up along Cape Cod here, all the way up to the Bay there, coming in on Nova Scotia.

ACDR Roger, Crip. Check your windows again. I think window 3's looking at the Sun right now.

CC-H Oh, yes? (Garble)

CC-H How do you read now?

DMP The only place I can see ground at all is out of window 5 right this minute.

CC-H Okay, we had thought window 3 was going to be down. Whatever one you think looks best.

ACDR Crip, what time do you want us to start that sequence?

CC-H On the photos?

ACDR Yeah.

CC-H You can go ahead and start it up on the upcoming 52. I told you orange filter, while ago, that's filters only applicable if we've got an IF mag in.

ACDR Hey, Crip.

CC-H Yes, Sir, go ahead.

CC-H Apollo, Houston. How do you read?

MCC-H Houston, comm tech, Houston comm tech. (Garble) voice check.

SPKR Roger. You're loud and clear.

MCC-H Okay.

CC-H Apollo, Houston. We should be back with you now, how do you read?

DMP Yeah, we've reading Crip. I'll tell you the problem here bottom of window 3, coming right across Cape Cod and right up the coast of Boston and the whole works. The problem is that we're so close on top of it, that there's no way to get a camera to the window to shoot it.

CC-H Roger. Understand.

ACDR And, we're already by it.

CC-H Copy.

DMP As far as visual's concerned, I didn't see anything any different then yesterday. There's a lot of sediment, all along the

coastline there. And, I'd sure hesitate to call anything Red Tide in there that I've seen. It looks to me like it's all sediment coming out of those rivers because it's same color as the flow out of the rivers.

CC-H Okay. That's a good comment.

CC-H Say, some of the support ships we got out there they been sampling and recording the high chlorphyll content in the water and maybe that's some - they've been suspecting that's coming out due to heavy rains they've had up there.

DMP Roger.

ACDR Hello, Houston, Apollo.

CC-H Go ahead.

ACDR Can we go ahead and get that EUV powered down and the X-ray and helium glow so, we can dump some urine overboard, before we go and hit those suits?

CC-H We'll get a quick check on that, don't see any problem. One item we would like, though, is that we do want to get a contingency power down on the X-ray, which is going to basically just purge all the gas out of that unit so it allows (garble) engineering check on it. When you do the power down, I would like you to do the X-ray contingency power down which is in the checklist, experiment checklist page 1-24.

ACDR Okay.

CC-H An additional item on that is after we get it powered down, I'll give you a reminder that we do want to go ahead and turn off the low voltage power when we complete it.

CC-H Apollo, Houston. You got a go to go ahead and start securing those experiments in SIM BAY.

ACDR Roger.

CMP And, Crip, hatch 1 passed the leak check and now we're venting it the rest of the way.

CC-H Okay, fine. Thanks alot Vance.

CC-H Apollo, Houston. For the DP, Deke one stem I'd like to verify when you was doing that CMD and the 02 purge, awhile ago. Dis you close the 02 purge valve?

DMP Yes, I did.

CC-H Okay. Makes everybody feel nice and comfortable down here knowing that. Thank you.

ACDR Okay, Crip. Did you want - on this contingency purge - the X-ray low voltage power to stay on?

CC-H Want it to stay on for the duration there. When you get down to the last you can go ahead and after we close the cover well go ahead and turn it off at that point.

ACDR Roger.

ACDR Okay, we're on the contingency power down, X-ray purge starting now.

CC-H Okay, Vance. Thank you.

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CC-H They - some of the support ships that we've got out there that have been sampling have been reporting a high chlorophyll content in the water and maybe that's - may have been suspecting that's coming out due to heavy rains they've had up there.

CMP Roger.

ACDR Apollo - Houston, Apollo.

CC-H Go ahead.

ACDR Can we go ahead and get that EUV power down and the X-ray and helium glow, so we can dump some urine overboard before we go and hit those suits?

CC-H We'll get a quick check on that; don't see a big problem. One item we would like though, is that we did want to do a contingency power down on the X-ray, which is going to basically just purge all the gas out of that unit so it'll allow us to do sort of an engineering check on it. When you do the power down, I would like you to do the X-ray contingency power down which is in the checklist - experiment checklist, page 1-24.

ACDR Okay.

CC-H An additional item on that is: after we get it powered down, then I'll give you a reminder that we do want to go ahead and turn off the low voltage power - what we completed.

CC-H Apollo, Houston. You've got a GO to go ahead and start securing those experiments from SIM BAY.

ACDR Roger.

CMP And, Crip. Hatch 1 passed the leak check and now we're venting it the rest of the way.

CC-H Okay, fine. Thanks a lot, Vance.

CC-H Apollo, Houston. For the DP. Deke, one item we'd like to verify when we had you doing that CM-DM O2 purge awhile ago, did you close the O2 purge valve?

DMP Yes, I did.

CC-H Okay. Makes everybody feel nice and comfortable down here knowing that. Thank you.

ACDR Okay, Crip. Did you want - on this contingency purge - did you want the X-ray low voltage power to stay ON?

CC-H Want it to stay ON for the duration there; when you get right down to the last - you can go ahead and - after we close the cover, we'll go ahead and turn it OFF at that point.

ACDR Roger.

CMP Okay. We're on the contingency power down, X-ray purge START now.

CC-H Okay, Vance. Thank you.

CC-H Apollo, Houston. At - at your convenience, we are standing by for the logic sequency check.

ACDR Okay, we're waiting 5 minutes on that last - next to the last X-ray low voltage power (garble)

CC-H Roger that.

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ACDR Okay. Deke has the data report so as your surgeon won't be nervous anymore.
CC-H Okay. I'm sure the surgeon would be - he's been waiting down here all morning just to hear it.
DMP Okay. Ready to copy?
CC-H Yes, sir. Shoot it to us.
DMP Okay. AC: Meal A - He ate everything except coffee and substituted tea; Meal B - everything; Meal 1 everything. Oh, he had two extra coffees in there somewhere later. Okay, medical log: PRD is 11013; 16 hours of good; 2 lomos; and a full tank of water.
CC-H Okay.
ACDR Deke, why don't you get that off, and we'll do the logic sequency check next.
DMP Take lunch to get that off then we'll give you the launching sequence (garble).
DMP Okay, CP: Meal A is complete as written; meal B, the same except for cookies; meal C, complete. Okay, medical: PRD, 48295; 6 good; no medication; and about 70 seconds.
CC-H I'm sorry, would you say the PRD again. I don't think I got that right.
DMP Okay. It was 48295.
CC-H Very good. Thank you.
DMP Okay. I have the DP: Breakfast - everything; lunch - scratch the macaroni and add a salmon; and in the evening, scratch potatoes and cherry nut cake, add an orange drink. And medical: PRD, 61001; 6 hours for sleep; no medication; 60 to 70 swallows.
CC-H Okay. We got all that.
DMP Okay.
ACDR Okay, now that we've got the important stuff out of the way, we're rushing for some minor thing like logic sequency check.
CC-H Okay. We'll take that minor little thing.
ACDR Okay. We're ready to go. We're down to where it says (garble) the next two steps. STDN and we're ready to close the circuit breaker 6 RM.
CC-H We're GO.
ACDR 6 R1 and 2 are not - were closed. Seque logic on and up.
CMP And we're GO.
CC-H Okay, and we are GO for power ON as required.
CMP Roger.
CC-H Okay. And whenever you guys want it, I have got your DM jet pad which is over on the next page.
DMP Stand by, Crip.
CC-H Okay.
ACDR Crip, we have completed the X-ray contingency power down.
CC-H Okay. Thanks a lot.
ACDR - - still on as per checklist.
CC-H Okay, if you've completed and you've already got the cover closed, we'll go ahead and take the low voltage power to OFF, please

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ACDR You want me to OFF.
CC-H Okay, Tom. I'll get the other two items before you guys start getting all suited up there I wanted to get up to your DM check pad and also, we would like to get one more look at that Doppler recorder; see what the numbers are reading now.
ACDR Okay, give me the jet - jet pad first.
CC-H Okay. And you got that out, it's - should be over on the next page of your flight plan.
CC-H 62B.
CC-H I'll come at you when you - when you tell me you're ready to copy.
ACDR Okay, ready to copy.
CC-H Okay. For time 199:23:48:00; attitude, 089, 332, 003; set time is 199:25:00:00. Read this back, please.
ACDR Okay. DM jet 199:23:48, 00; 089, 332, 003; 199: 25:00:00. Over.
CC-H Okay. That's a good readback, Tom. And for your information, due to Vanguard being sailing and us moving it slightly, we now are going to be in ground contact when we do the spin and we'll be able to watch the jettison here to be of whatever help we can be and hopefully no hindrance.
ACDR Roger.
CC-H One - while you've got that page open there, I might point out one - when we have - our attitude is not exactly what is was when we - were initiating this maneuvers - what we thought it was going to; consequently, to get there on time it would probably help if you initiated your VERB 49 maneuver at 39 minutes on the DET vice 40, and I can guess - that's not clear to you; I can talk about it a little bit later. We drifted off a while ago when we were doing a P52, we think.
ACDR Yeah, okay. It's 39 instead of 40. We can go there quite a bit earlier, too.
CC-H Yeah, there's no problem on that.

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CC-H Apollo, Houston. Whenever you get a chance, we're standingby to hear how the recorder looked, to get all the numbers.

ACDR We're still trying to work out some other problems here. We'll get it - get back with you in a minute.

CC-H Okay, no problem. I'll stay out of your hair, I know you've got to get suited up and so forth.

ACDR Hey, Crip.

CC-H Go ahead.

ACDR Can somebody in experiments room tell us real quick, do we do any more crystal growth or (garble) photos?

CC-H I'll check that for you.

ACDR We can look it up ourselves, but -

CC-H We - we - it's a heck of a lot easier for us to do it.

CC-H Deke, you've got 1 more today and 1 more tomorrow.

DMP Both of those. Okay, thank you.

ACDR Okay, Crip. Reel A now reads five and a half, B reads two and a quarter, C reads eleven, and D, 12. C and D have not moved.

CC-H Roger. Understand.

CC-H Apollo, Houston. One item before you get in a position with the suits where you can't do it, which we hope you aren't yet, we do want to get the waste stowage vent valve closed. We'd like to keep the vent going as long as we can, though.

CC-H Apollo, Houston. If you've copied my call on the waste stowage vent, I'd appreciate the acknowledgment.

DMP Yeah, we got that.

CC-H Okay, thank you, Deke.

CMP Houston, Apollo.

CC-H Go ahead.

CMP Got some good news and some bad news. The good news is that the tunnel is all vented, we're kind of on schedule. The bad news is that I can't find the DAC timing cables in A-6.

CC-H Let's see if we can help you out.

ACDR Okay, Crip. We're back with you. Did you have another call that we missed?

CC-H That's negative. I was - we're still trying to find where the timing cable might have been located. It was supposed to have been in A-6. I don't believe, don't believe you guys have used that particular cable this mission yet, have you?

ACDR No, I'm sure we haven't. And I recollect seeing it in A-6 sometime or another, so I that's where it is. Okay. Just found it. It was in A-6, just a little obscure.

CC-H Yeah, keep a lot of stuff in there, well tha's good. Well, at least you - you had a flurrying around down here for a minute. Need to give Nigra(?) something to do anyhow.

PAO This is Apollo Control. Apollo crew is reported having closed out the docking module. And now are climbing into the pressure suits for the upcoming jettison on the next revolution, which is

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scheduled at 199:23:48 ground elapsed time. Just at Vanguard actually, REV after next. At 3 p.m., central daylight time, there will be a press conference on the science activities aboard ASTP and the knowledge to date of the status of these experiments. The participants will be the principal investigators for ASTP experiments. Mission Scientist Dr. Tom Giuli, Drs. Stuart Bowyer, Seth Shulman, Theodore Pepin, Farouk El-Baz, George Weiffenbach, Thomas Budinger, Harry Weideimier, Robert Snyder, and Robert Allen. This is at 3 p.m., main auditorium, it'll be run in parallel with the air-ground broadcast line. The press conference will be transcribed, but will not be carried on the broadcast line to hear it, a newsperson must go to the auditorium. 13 minutes remain now in this ATS satellite pass. We pick up Vanguard this revolution, as it steams near its stay in Sidney, Australia. 197:28 standingby Apollo Control.

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ACDR Houston, Apollo.
CC-H Go ahead, Tom.
ACDR Okay. Look in page 1-29, of the experiments checklist, please.
CC-H Stand by 1.
CC-H Go ahead. We're with you.
ACDR Okay. With - it shows here when I hook up this - we're supposed to run for 10 seconds with the lens covered and then turn it off and we do the same thing at the end. Can you find out why they want that done, because we're running out of magazine here which we think may or may not last through this whole thing. And, we sure hate to waste any film, unnecessarily.
CC-H Okay. It's - what - what it is, is just protective film to make sure that - that what we get of the jet is - is good. We would like to go ahead and run it if you can.
ACDR Okay. They'd just soon get that and if we run out before we get to the end, they don't care?
CC-H That's - that's my understanding, but let's get verification on it.
ACDR Okay.
CC-H Deke, we see, looking at that, that we're (garble) 15 percent. Can you tell us what - what kind of reading we got on the mag now?
DMP Well, number 1, we haven't even got that mag - -
CC-H Oh.
DMP - - (garble) got a mag CX04. We're scratching around here like mad trying to find film. And we might have 15 percent on this mag, I don't know. (Garble)
CC-H Understand. CX04 in there now.
DMP That's correct. We're just about out of 16 milimeter and we've been scratching around for magazines that have got anything left on them. And this is one of the few we've got with anything left.
CC-H Okay.
ACDR Crip, how soon are we going to have the DM1 maneuver pad?
CC-H Well we're working on the pad right now. We - are you interested in the time of it? Is that correct?
ACDR I assume the time is as per flight plan.
CC-H That's affirm. Well, it's going to about - running about 5 minutes later than what you've got in there because we've delayed the jets slightly.
ACDR Roger.
CC-H Apollo, Houston. We're coming up on LOS from the ATS and we'll see you again at Vanguard in about 9 and a half minutes and we're reverifying the settings for that - that camera since we're using a different kind of film in it for Deke.
ACDR Okay.
PAO This is Apollo Control. We're in an LOS period lasting about another 5 minutes between ATS-6 satellite coverage south

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of Australia as the spacecraft comes up on revolution 121. And we should have tracking ship Vanguard in about 5 minutes. Vanguard no longer at the location shown on the mis - mission control center projection screen. It's been moving westward for the last 3 days. We'll stand by for Vanguard.

CC-H Apollo, Houston. We're AOS Vanguard for 5-1/2 minutes.

ACDR/CMP Okay, Crip.

ACDR/CMP We have 1 and - 1-1/2 of the people suited.

CC-H Very good. I'm not going to ask who's the half or which half.

CMP Well. Right. Actually 1 person suited and 1 guy half suited.

CC-H Roger.

END OF TAPE