ASTP (USA) MC652/1
Time: 13:16 CDT, 197:56 GET
7/23/75

CC-H Apollo, Houston. We are 1 minute from LOS. Next station contact in 19 minutes, through Goldstone, at 198:13. 198:13.

CMP Okay. Crip, see you there.

CC-H Okeydoke.

PAO This is Apollo Control. Loss of signal, through tracking ship Vanguard, for the 121st revolution we'll have Vanguard again. Next rev, about an hour and a half from now. And during Vanguard pass, next revolution, a docking module jettison is scheduled, at ground elapsed time of 199:23:48. The crew reported just now that 1 crewman was in his spacesuit, and another one was halfway suited. 2 maneuvers follow the docking module jettison, the so-called DM1 and DM2 maneuvers. The first one is at 200 hours even - a posigrade maneuver of 30.2 feet per second. The second - this first maneuver puts the spacecraft in somewhat higher orbit, thereby allowing the docking module to get out ahead of the spacecraft. And when the separation reaches about 300 kilometers, some 4 hours later, the second maneuver is performed, at 204:12:55. That'll be a 23.1 foot per second maneuver - retrograde - that is, to cancel out the first maneuver and set up an equal period orbit between the 2 craft. The orbit at that time will be 113.7 nautical miles at perigee and 120.7 at apogee. A reminder - at 3 P.M. Houston time - a science status briefing on ASTP science results, or at least what is known about the science experiments at this time, participants being Doctors Tom Giuli, Stuart Bowyer, Seth Shulman, Theodore Pepin, Farouk El-Baz, George Weiffenbach, Thomas Budinger, Harry Wiedemeier, Robert Snyder, and Robert Allen. 3 P.M., in the main auditorium. It will not be carried on the public affairs broadcast line. To hear it, one must go to the auditorium. We'll return, in 14 minutes, for Goldstone and ATS-6 satellite. As the crew continues preparations for docking module jettison, this is Apollo Control, at 197:58.

END OF TAPE

ASTP (USA) MC653/1
Time: 13:34 CDT, 198:14 GET
7/23/75

PAO This is Apollo Control 198:12 ground elasped time. Acquisition through Goldstone in 50 seconds. Crew still in the midst of preparations for docking module jettison. Checking out the suit circuit. Assuming all three have donned their pressure garments. At last contact over Vanguard 1 and a half crewmen were in their suits. 50 percent of the crew.

CC-H Apollo, Houston. We're AOS Goldstone. We have you for three minutes.

CMP Okay. Loud and clear.

CC-H You guys manage to get all tucked away in your suits there?

CMP Yeah, we're in suits. Sort of standing by for the integrity check.

CC-H Okay, copy that.

CC-H Vance, while we're standingby one item I might mention was a late change. I think you were aware of it, but right after you jettisoned, we used to delay 2 seconds, before going CMC mode hold, and we're now doing that at 15. That allows you to get back in the retrograde maneuver and should be able to pick the thing up a little bit better.

CMP Okay, yeah. I realize that but I appreciate the reminder.

CC-H We show the purge tank going down and have a high02 flow now.

CMP Yeah, that was because we had the suit return valve OPEN earlier

CC-H Copy.

CMP Checking it out. It's easier to work in zero g than it is in (garble).

CC-H Certainly couldn't be any harder.

CMP And I think that's the case, a guy can get a good position for (garble).

CC-H Okay, Vance, be advised I'm reading you pretty weak. I guess your mouth is a little bit aways from the mike there. Probably kind of hard to do it. We're about a minute from LOS and see you at Rosman - correction, see you at Newfoundland in about 8 minutes.

CMP Roger.

CC-H Somewhere along in there, it'd probably be better to wait until Madrid, I'll give you an update on your DM 1. Well I'll give you the DM 1 pads.

CMP Okay.

CMP Yeah, if we could get that before we get buttoned up in suits, that would be great.

CC-h Well, I've got it whenever you want to - got a convenient time to copy it.

CMP Okay, ready to copy DM 1 pads.

CC-H Why don't we - we're going over the hill here, we better wait until we get to Newfoundland, Vance, I'm afraid. It's 6 minutes from now.

CMP Okay.

CC-H Apollo, Houston. We're AOS through Newfoundland. Should be with you total about 50 minutes with the ATS,

ASTP (USA) MC653/2
Time: 13:34 CDT, 198:14 GET
7/23/75

CC-H Apollo, Houston. We're with you through Newfoundland if you're reading (garble) enough, we can go ahead and try to get this pad up.
CMP Standby.
CC-H Okay. No rush.
ACDR Crip, go ahead.
CC-H Okay. Would you guys like to copy down the pad now. Is that correct?
ACDR That's right.
CC-H It's on page 64-A. For DM 1. Starting out with your NOUN 33. 200, 00, 00:00; plus 0185, all balls, minus 0250; 358, 351, 003; 0131, 0001. Delta VC at ignition and tail off are not applicable. Your weight is 25,450. Trim angles, minus 009, and minus 076. Like you to note that contrary to your cue card, your tail off should be 18 feet per second, and if you guys are gonna be able to reach them after part of this burn to set them up, your high gain antenna angles will be minus 58 and 334. Which would allow us to see the burn and I don't know if you can get to them with your suits on and helmet and gloves off, which is configuration. You'll probably be in when you get there.
ACDR Yes, we can get them.
CC-H And, standingby for readback when you can give it to me.
ACDR Okay. 200, 00, 00:00; plus 0185, all balls, minus 0250; 358, 351, 003; 0131, 0001. Delta ignition, delta V tail off is in - a 25,450. Pitch minus 009, yaw trim minus 076. Over.
CC-H Okay. That was a good read back, Tom.
ACDR I got the high gain angles, pitch is minus 58 and yaw 334. Yeah, if the suit pressure, cabin pressure is good, there will be no problem in getting it at all. After the burn right?
CC-H Well, if you could get them - when you get to the burn attitude, if you could set them in, that would help.
ACDR That'll be no problem.
CC-h Okay, fine. While I've got you on the line, Tom, our friendly flight surgeon are some what concerned about the Lomotil, and I guess they would kind of like to know when you took them yesterday, and what the symptoms were.
ACDR Yesterday evening, prophylactic, and I'll discuss it with them after I get on the ground. Over.
CC-H Copy that.

END OF TAPE

ASTP (USA) MC654/1
Time: 13:53 CDT, 198:33 GET
Date: 7/23/75

CC-H - - when you get to the burn attitude. If you could set them in that would help.
ACDR That'll be no problem.
CC-H Okay, fine. While I got you on the line, Tom, our friendly flight surgeons are somewhat concerned about the Lomotil and I guess they would kind of like to know when you took them yesterday and what the symtoms were.
ACDR Yesterday evening, prophylactic, and I'll discuss it with them after I get on the ground. Over.
CC-H Copy that.
CC-H Okay and as soon as we lock up here at Madrid which is about a minute and a half away, we'll need ACCEPT and we'll go ahead and give you a target load for this burn.
ACDR Roger. Said you'd be locked on - on ATS in a couple of minutes.
CC-H No. We've got you on ATS right now. You can go ahead and give us ACCEPT and when we get to Madrid we're going to go ahead and give you a target load.
ACDR Roger. You've got ACCEPT.
CC-H Apollo, Houston. We just saw a MC&W but we can't correlate it with anything. Can you help us?
ACDR We assume ats' high O2 again, although we didn't see it.
CC-H You do not see it. Okay, we associated it about the time that B MAG came on back there but could not correlate it directly.
CC-H Apollo, Houston. We've completed our target load and the computer belongs to you again. You can go back to (Garble).
ACDR Okay. And as you can see we're in the middle of our pressure integrity check.
CC-H Roger. EECOM's down here watching it very intently.
CMP I think we have a good tight signal.
CC-H Roger.
CC-H Hey. One item, Vance, I might - -

END OF TAPE

ASTP (USA) MC655/1
Time: 14:03 CDT, 198:43 GET
7/23/75

DMP Looks like we have a good, tight signal.
CC-H Roger.
CC-H Hey, one item, Vance, I might ought to mention to you a little bit ahead of time - I don't think it makes that much difference, but right after you finish up that burn you're going to go to a VIS OBS attitude. And we never did update - change your NOUN 78 R2 value from 9,000 to 6,000. Figured you catch that on your own, too.
CC-H Okay. We copy. It looks like you've finished your suit integrity check. And Vance, did you copy what I was talking about for your VIS OBS attitude, following the burn?
CMP Yeah. Tom got it.
CC-H Okay. That's fine. Only 1 other item is that - probably going to take you pretty close to gimbal lock, and you may have to fly around the (garble).
CMP Okay. Thanks for the warning.
ACDR Hello. Houston, Apollo.
CC-H Go ahead, Tom.
ACDR Okay. Just looking at the event timer. Okay, I - Never mind. We got it squared away.
CC-H Okay. We copy. DET is probably coming up on 22 right now. You got it set?
ACDR Mark it. 22.
CC-H Rog.
ACDR How do you read, Crip?
CC-H Loud and clear. How me?
CC-H Apollo, Houston. Were you trying to get to me for something?
CC-H Apollo, Houston. How do you read?
CMP Read you loud and clear.
CC-H Okay. I thought - Tom's been trying to call me there and couldn't get back to me.
ACDR No, you - I called once, and you came back with the right answer.
CC-H Okay.
CC-H Apollo, Houston. 1 other comment regarding your DM-1 burn. That - there's a note in your flight plan, there, about trimming all axes to 0.2 feet per second. And we want to follow that unless, for some reason, we get a residual as large as - like, 2 feet per second - and in that case, we do not want to trim it out. Something would have been wrong, and we'll work that.
CMP Okay. If it's less than 2 feet per second, we trim it out to less than 0.2.
CC-H That's affirm.
CC-H And I don't know if you noticed, there, but that attitude for that burn is about 180 degrees in roll different from

what we had originally planned. And that is to allow us to have ATS coverage here. It's like I talked earlier to Tom, about how - and the angles that we've got will give us that.

DMP Okay.

ACDR Crip, we're now going through the prejet checklist.

CC-H Roger.

ACDR Okay. And we're up to the point where it says coordinate next 2 steps with STDN, if possible. So it looks like it is possible. So, circuit breaker secs ARM 2 coming closed.

ACDR Okay. SECS LOGIC 2 on, up. (Garble) I hope everything looks - -

CC-H And we're GO - It looks good here. We're GO for PYRO ARM, as required.

ACDR Sounds good.

CC-H Okay. A couple items. We didn't see you put the FDAI scale to 55. And also, we need - we'dlike a verify for panel 227 - that the scientific instrument power is ON - if you can see it.

ACDR It's on.

CC-H Okay.

CC-H Okay. All looks good here.

CC-H Apollo, Houston. This will give you a warm feeling. We're GO for DM jet.

CMP Super.

CMP So are we.

CC-H Super.

END OF TAPE

ASTP (USA) MC656/1
Time: 14:26 CDT, 199:28
7/23/74

ACDR Okay. Crip, we're maneuvering on 39 on the DET.
CC-H Roger that.
CC-H We've still got you for about 9 minutes and we're watching the data.
ACDR Okay.
CC-H And we may lose you a little bit early due to the maneuver here. If I do, I'll have VHF at - through Orroral in about 11 minutes.
ACDR All right.
CC-H We're going over the hill; see you at Orroral in 6 minutes.
ACDR Okay.
CC-H Maybe we won't, we - looks like we've done arrived there.
CMP Good-bye and hello.
CC-H Well, I hate to leave you. That's the most exciting event we've had in couple of days. We got the - the whole control room full down here.
CC-H 50 or 79 or 50 thousand (garble)
CC-H Apollo, Houston. You copy regarding our 1079?
CMP Rog.
CC-H Apollo, that looks super from here.
ACDR Okay.
CMP Thank you.
CC-H This time, we really are going to leave you. Call you on VHF next.
CMP Okay.
CC-H Apollo, Houston. AOS Orroral for about 3 minutes.
CMP Roger. (Garble)
CC-H Roger.
CC-H Going over the hill at Orroral. See you at Vanguard in about 2-1/2 minutes.
CMP Rog.
CC-H Apollo, Houston. AOS Vanguard. 7 minutes.
ACDR Rog.
CMP Roger, Crip.
ACDR You'll be able to monitor the whole sequence. Over.
CC-H That's why - that's why we got the Vanguard under way so we could do that.
CMP We're maneuvering.
CC-H Roger.
CMP Okay. She went off real good Crip. We don't see her in the window yet. We went to hold at 15 seconds.
CC-H Roger that. Nice job.
CMP You want to get those pictures though too.
CC-H That's affirm.

END OF TAPE

ASTP (USA) MC657/1
Time: 14:48 CDT, 199:28 GET
Date: 7/23/75

ACDR Okay, Crip. Pressure's looking (garble) here. We're going to these suits and helmets to try to look for the bear.

CC-H Okeydoke.

CC-H Okay, we're a minute from LOS. Our next station contact will be Goldstone in 18 minutes. That's at 199:46. Good luck on spotting it.

ACDR Okay. We got it now, Crip.

CC-H Very good.

CC-H A little reminder when you get to it, the - the (Garble) suit circuit return OPEN, but no rush.

DMP Get the which?

CC-H Suit circuit return valve. We monitor it closed. Now that was the reason for the CO2 flow.

DMP Okay.

PAO This is Apollo Control. Loss of station at tracking ship, Vanguard. Successfully separating or jettisoning the docking module, the Apollo crew had it sight after going back into attitude hold. Next they will begin to doff their pressure suits aand upcoming at 200 hours even, about 31 minutes from now, will be a 3.2 foot per second posigrade maneuver to set up the 300 kilometer distance spacing away from the docking module. We'll return in 16 minutes at Goldstone and after 21 missions this is this commentator's final word.

END OF TAPE

ASTP (USA) MC658/1
Time: 15:05 CDT, 199:45 GET
7/23/75

PAO Apollo Control. Ground elapsed time 199 hours and 43 minutes. We're 17 minutes away for another maneuver by the command module, to place it in the proper attitude for the continuation of the Doppler experiment. The - at ground elapsed time of 200 hours even, a 30.2 feet per second posigrade maneuver will be performed by the command module, to put it into a 118 by 125 mile orbit, to set up the 300 kilometer, or 186 mile orbit, to make a 186 mile separation from the docking module, at which time the experiment will be performed. And we are scheduled to begin a science briefing with Doctor Tom Giuli and PIs for the science program, at the main auditorium, in Building 2, beginning at the - immediately - at the Building 2 main auditorium.

CC-H Apollo, Houston. We are AOS, Goldstone, 3 1/2 minutes.

CMP Okay. We finally caught sight of the DM, below and to the left of us, and got a lot of good movie film of it. It seemed to be tumbling the way everybody wanted it to. With reference to the Earth, it was in a vertical plane that tumbled.

CC-H Okay, Vance. Super job. At least 2 or 3 atta boy's for that one. It seemed to be quite a bit low, and you said - how much to the left? Very much?

CMP Oh, I'd guess - had to get very close to the window to see it, so I'd guess - 20 to 30 degrees. Or - more than that. Maybe 40 - 30 to 40.

CC-H To the left.

CMP Right. Correct. To the left.

CC-H Okay. To the left would've been - I was trying to look at it from your perspective, there. That would've meant that we should've kept going more than the 15 seconds - Is that what you - what you think?

CMP Left.

CC-H Oh yeah. Okay. Yeah, it would've meant left, okay, because you were yawing it around to the right.

CMP Right.

CMP I timed a 3:60 rotation on it (garble) about 6 degrees a second from what I could tell.

CC-H I'm sorry. I couldn't copy that last -

CMP I timed a 1 - or, a 3:60 rev, I think, and it looked like it was doing about 6 degrees a second. That was really pretty -

CC-H I'm sor- - You guys are down so soft, I can't hardly hear you.

CMP It was really a pretty sight, seeing it tumbling off toward the ocean. I might add that it was - the clouds on the surface of the ocean were so bright that it was impossible to see the - anything in the COAS. So that sort of substantiates the problem that Deke and Tom had with the COAS during docking.y.

CC-H Okay. Understand that. And, Vance, I (garble) it - the way you saw it - it looked - did look like it was turning about the 1 axis that we had - we had wanted. And that - didn't appear to be any tumble to it.

ASTP (USA) MC658/2
Time: 15:05 CDT, 199:45 GET
7/23/75

CMP That's right. It looked to be stable and in a - tumbling about 1 axis. The one we wanted.
CC-H Okay. Very fine. Super.
CC-H Apollo, Houston. We're looking at some data down here that shows circuit breakers on panel 274, for the DM furnace crystal growth, are closed. We would like to get those opened, if we could, please. If you can reach them. We're about to go LOS. And then we'll have you again at Newfoundland in 5 minutes.
CC-H Apollo, Houston. AOS, Newfoundland. 7 minutes.
CC-H And if you can't find a chance to get those ATS signals, I bet you a minus 58 and yaw of 334 will be able to get you on the ATS and watch you burn.
DMP You're ahead of us. I hope you got it.
CC-H Okay, fine. Well, we're not quite there, yet. Thank you, Deke.
DMP (Garble) that 274 breaker I can't get at.
CC-H Understand.

END OF TAPE

ASTP (USA) MC659/1
Time: 15:24 CDT, 199:59 GET
Date: 7/23/75

ACDR Houston, Apollo.
CC-H Go ahead.
ACDR Okay. Burn was on time. And residuals are now to 0, minus 1, and 0. Delta VC reads minus 18.0.
CC-H Roger.
CC-H Sounds super.
CC-H And once more a little warning enroute to this - this obs attitude again which I corrected earlier: that's R2 for your vis obs is 6000 by 9000 and watch out for gimbal lock enroute.
CC-H Okay. And one other item here. You guys doing such a super job up there. Farouk was real impressed by some of the TV stuff you got out of the window while we were doing docking scenes earlier and we don't know if it's going to be possible - depends on how long it takes to get out of your suits but you got a vis obs pads upcoming about 250 - 200:52, and if we can we're going - we'd like to get the TV set up by a prep 2.9 and I can read that to you or however you want to do it. And - so we can have TV out the window when you're doing it. And that's kind of your option. Whether you say it's possible.
DMP Okay. We'll try her.
CC-H Okay. If you think you're going to make it let me know. There're a couple of modifications we're going to have to make, just minor ones and that that camera - it's going to be in MASTER and your prep tells you that it'll be in SLAVE. And we need to get the interlever switch on and a few other things. We'll let you get out of the suits and get squared away though.
DMP Okay.
DMP Tell you, we've got all of our cameras stowed for entry right now as a matter of fact.
CC-H Okay. Understand.
DMP We cleaned out the DM this morning, and went through that exercise. We might be able to dig something out again in time. We'll work on it.
CC-H I'm sorry, Deke, I couldn't catch your last.
DMP I said we've got it all stored. We might be able to dig something out in time and put it back together. We'll see how it goes here.
CC-H Okay.
ACDR Okay, Crip. Can we go ahead and start maneuver to the vis obs attitude now?
CC-H That's affirmative. The sooner you get started the better.
ACDR On the way.
CC-H If we potentially lose lock enroute, we need a small modification on that angle. That's in your flight plan, yaw is 116, with a pitch of minus 62 and a yaw of 116, in case we lose locks in the maneuvering.

ASTP (USA) MC659/2
Time: 15:24 CDT, 199:59 GET
Date: 7/23/75

ACDR Roger. Have 116 in yaw.
DMP Houston, Apollo.
CC-H Go ahead.
DMP Okay. You stayed with us during the maneuver.
CC-H Yes. We wouldn't run off and leave you. We weren't positive of you-that was why. Wanted to mention the angle to you but we're still here.
ACDR Roger.
DMP Incidently we have a minor malfunction in the orb rate apparatus there to report to you. The ball 1 sometimes does not flip to orb rate when you move the orb rate (Garble) 1 orb rate switch.
CC-H Okay, it's a common intermittant device, malfunction rather. It works sometime and does not work at others. Is that correct?
DMP Well, it's sort of that way. It generally doesn't work. But once or twice we got it to work correctly and then once or twice it changed but it did not change to the right position. And this was not evident on ball 2. So we used ball 2 to get the DM off. We just restricted use of RD on ball 1.
CC-H Okay. Understand that. And that was - thank you for moving over to the other ball.
DMP We would have reported it soon but we were kind of busy just before getting the DM off and we weren't too worried about it because we had time from back and - -
CC-H Yes, that's good. I can appreciate you being busy there. You worked through that nice and smooth.
DMP Thank you.
CMP Houston, Apollo.
CC-H Go ahead Vance.
CMP Crip, a little while ago you called for us to do something with a circuit breaker 274 and we were all suited. I couldn't get down there. Now's Deke's down there and wondering - we'd like you to have you repeat what you asked him.
CC-H Okay. It looks like it's on 274. It's the DM furnace flash crystal growth, the circuit breakers-there are three of them - and they should be opened
CMP Okay.
DMP Crip, how do you read?
CC-H Loud and clear, Deke.
DMP Okay. I'm out of that old suit (garble) pass; I take it right now.
CC-H Okay. I guess two items. The - do you think you've got time to try to find a TV camera to put in the window?
ACDR Well, I'm going to take time to do it. If you just tell me which one, I'll do it.
CC-H Okay. We're recommending that if you can find you're cue card there, that you use TV prep 2.9 which is one of the onces we used for a tour, and it basically works on 605 there.

ASTP (USA) MC659/3
Time: 15:24 CDT, 199:59 GET
Date: 7/23/75

The only modification for that - that camera does have to be a MASTER and not SLAVE as called for. We're also going to have to get the interlever power ON down on 400 for the V - -

END OF TAPE

ASTP (USA) MC660/1
Time: 15:47 CDT, 200:24 GET
7/23/75

CC-H - - going to have to get the interlever power ON, down on 400 for the VTR.
CMP Okay.
CC-H And - and - we'll have to take a CM2 TV station power to ON/OFF.
DMP Okay, got that.
CC-H Okay. One item I might also tell you, since this target down there is of the Anzsus Eddy. We've had a ship spotted recently and it's reported that there is a large cumulus cloud just about over the center of the eddy and it's slightly southwest of where it's indicated in your - your book there.
DMP Okay. Thank you.
CC-H Other than that, might as well get cracking and see if we can get some TV of it. Won't bother you any more.
CC-H Apollo, Houston. We're about to lose you through the ATS and we'll see you again at Orroral in about 18 minutes.
CMP Okay, Crip. Looks like we're going to get the TV cameras set up; I think we're proceeding very well.
CC-H Great, if you do, we're going to also not only look at that eddy area, but when you come across Hawaii, we're going to be looking at that one. I was going to give you some words at Orroral, Vance, regarding eddies; we had a lot of them reported southwest of Hawaii and we were going to get you to look at them and try to give us a, you know, size, number and extent and that kind of stuff.
CMP Okay. Pacific ocean - ocean's just - -
PAO Apollo Control. Ground elapsed time, 200 hours; 34 minutes with loss of signal through the ATS-6 satellite. Next acquisition will be through Orroral Valley tracking station in 12 minutes. As the Apollo command module passes over Australia, they'll again be asked to see if they can observe any of the manifitation - manifestations of Anzsus Eddy which lies off the coast of Sidney, Australia; they'll be asked to obtain stereophotographs of this area. Next acquisition in 12 minutes and 15 seconds; at ground elapsed time of 200 hours and 35 minutes, this is Apollo Control.

END OF TAPE

ASTP (USA) MC661/1
Time: 16:10 CDT, 200:48 GET
7/23/75

CC-H Apollo, Houston. We are AOS through Orroral for 4 minutes.
ACDR Okay, Crip and we got the TV camera up and running.
CC-H Okay. Great. We're talking at you on VHF now as soon as we lock on with S-band we're going to go ahead and command that camera on.
ACDR Okay.
ACDR (Garble)
CC-H Go ahead.
ACDR (Garble)
CC-H I'm sorry you're unreadable - way down in the mud.
ACDR Yeah. We're concerned whether we got the right configuration here to give you the TV you're looking for.
CC-H Okay. We've got it. It's - it's coming down. We're not getting to look at it here, we're just dumping it to the site so we can get it later.
ACDR Oh. I see. Okay. But the site does have it then?
CC-H That's affirmative.
ACDR Okay.
ACDR Where are we right now, Crip?
CC-H I'm sorry. You're just over the - the coast of Australia right now.
ACDR Okay.
CC-H You should be getting pretty close Sydney there.
ACDR Well, okay, Crip. We're over where we think we ought to be about Sydney and we're in solid cloud cover here right now.
CC-H Yeah. Kind of hard to pick a cumulous cloud out amongst all the clouds then, huh?
ACDR Right.
CC-H Okay. Copy that.
CC-H Like to give you this quick blurb regarding the eddies I mentioned earlier south of Hawaii. It's known to have a series of eddies southwest of the Island due to the current flow being broken by the Island and the size and the number and extent of them are unknown. We'd like you to attempt to observe the orientation, the sizes and how many you can see. You should have a chance to look at them on this upcoming pass across at about 201:09 and we think it should be visible out of window 1.
CC-H We're also going to be - again beaming down this TV to Hawaii when we - when we come across there, so we can look at it later. We are one minute from LOS and our next station contact will be Hawaii in 14 minutes.
PAO Apollo Control. Ground elapsed time 201 hours and 2 minutes. We'll have acquisition through Hawaii in 4 minutes and 40 seconds. We will have a change of shift briefing with off going flight director Frank Littleton and Cap Comm Bob Crippen in the main auditorium of building 2 at 5 p.m. sharp. At 5 p.m. off going flight director Frank Littleton and astronaut Cap Comm Bob Crippen for a change of shift briefing in building 2 main auditorium. Next acquisition 4 minutes and 15 seconds. At ground elapsed time of 201 hours and 3 minutes, this is Apollo Control.

END OF TAPE

DMP - clear over most of this area, and scattered clouds that drift outline the eddies. In fact, we've got a couple super big ones coming up on our right, right now, at 201:07:25.

CC-H Roger.

DMP Are you guys getting TV of this, incidentally, Dick?

CC-H I'm sorry, Deke. Say again?

DMP Are you guys getting TV, or are we just putting it on tape?

CC-H We're not getting it live, Deke. I think we are dumping it down to the Hawaii tracking station, and that station reports that they are receiving it.

DMP Okay.

CC-H And incidentally, this is - you're very close to being right overhead your splashdown point. This is the - just about the same sort of ascending rev that you'll be coming home on, tomorrow.

DMP Okay. If the weather's like this tomorrow, it'll be super.

CC-H I'm sure it will be. That's the way we schedule it, anyway.

DMP Yeah. You guys have good control of things down there, we've noticed.

CC-H Darn right.

CMP This eddie Deke just called out's about 50 kilometers across.

CC-H Roger, Vance.

DMP Say, a question for Farouk, on the eddies. Today he wants stereos of that - We're going to get a little short on film, but if they need stereos - fine, we'll shoot it up. But if the stereo doesn't do much for him we might as well save the film.

CC-H Let me - let me check real quick. Hang on.

DMP Okay.

CC-H Deke, Houston. We did talk to Farouk in the back room. And he says he would like some stereo photography of the eddies.

DMP Okay. You got a million eddies out here, and -

CC-H Rog. He says, Deke - he gives the advice to pick out 1 good looking site and get good stereo of that and not try to document the whole area, Deke.

DMP Okay.

DMP And it looks to us, for Farouk's information, like we're almost running parallel with a large ocean current, here - the cloud banners on both sides and the clouds within it look a good deal like a Gulf Stream type current.

CC-H Roger, Deke. Copy.

CC-H Apollo, Houston. We are 1 minute to LOS. Newfoundland comes up at 2:01 plus 28. I do have 1 note for you. Back to that

ordeal problem that you had. I don't think you're using it anymore, but we would recommend that you select INERTIAL on the ordeal FDAI number 1 switch and discontinue trying to use it with FDAI 1. It turns out that there are some potential failure modes caused by contamination, in that switch, that could cause the loss of that ball. So just give up on it and stay on number 2.

DMP Okay. Understand. From now on, we don't use FDAI 1 for anything, then

CC-H Well, don't use the ordeal on FDAI 1. That's what I mean.

DMP Oh, okay. Yeah.

CC-H Yeah, the ball is okay now.

DMP Right.

CC-H We just don't want to change that.

CC-H Apollo, Houston. Newfoundland for 7 minutes.

CC-H Apollo, Houston.

ACDR (Garble), Houston.

CC-H Roger. It turns out, because of this different pitch attitude on the P20 for this - that we're in for the Earth OBS - we are going to be able to acquire the ATS right now, if anybody will give it a try - the angles that are printed over there, at a time of 201 plus 45 - we think will be good. And we'll lose it, then, oh - maybe 5 minutes earlier than it's printed in the flight plan. But we think if somebody has a chance to try, we should be able to lock up.

CMP Okay. 201:45 (garble).

CC-H Okay.

DMP Okay, Dick, got you on ATS?

CC-H Roger, Deke. We'll inhibit the Newfoundland VHF and be talking to you through ATS. Thank you a lot.

DMP All right.

ACDR Houston, Apollo.

CC-H Go ahead, Tom.

ACDR Yeah, hey, if this TV comes out - I was wondering, you know, we-so-use so much film that you can budget to shoot, as far as what it looks like, you know, from space, looking down on the Earth - and most the time, like Skylab, those guys very seldom had, you know, a local horizontal attitude. But if you can put on a tape recorder, you got some good passes coming up, like the United States. Why don't we put it on TV, on the VTR, and then you can dump it? I think it'd be pretty fantastic what you see. Over. Just something for you to think about.

CC-H Okay, we have - we have been talking about some - some about that on the ground, Tom. And we'll talk about it some more and get back to you.

DMP Yeah, you know, just as a for instance, we just came off this Pacific pass and kind of all climbed back in the cockpit

and all of a sudden looked out the window - and man, we're dead center over Seattle on the most clear day I've ever seen there. And nothing running. The TV was running, but it didn't go anywhere, I don't think.

CC-H Roger. Understand.

CC-H Apollo, Houston. We have no further scheduled use of the VTR. As far as we're concerned, you can use it for out the window passes of the U.S. or other clear area targets of opportunity. And we'll either dump it, or we'll bring it home full.

ACDR Okay. Super.

CC-H Great.

DMP Incidentally, I didn't scramble to get a camera and get a few shots of that area. Wasn't planned very well.

CC-H Okay. Well, I tell you what, your next couple of revs are going to pass right over that same general area again. So, as you come across it you probably can get - get another chance.

END OF TAPE

ASTP (USA) MC663/1
Time: 16:58 CDT, 201:37 GET
7/23/75

CC-H - - pass right over that same general area again, so as you come across it you probably can get - get another chance.

CMP Yeah, right. We noticed that.

DMP You betcha, thank you.

CC-H Okay.

DMP Hey, we sure do miss our old utility outhouse up here.

CC-H I'm sorry, Deke. Say again.

DMP I say, we sure do miss our old utility outhouse up here since we jettisoned it.

CC-H Roger.

DMP I think I'd better twist the words; it's be the back porch - -

CC-H Roger.

DMP - - for about everything you can imagine.

CC-H Right.

PAO Apollo Control; ground elapsed time, 201 hours and 37 minutes. We have the change of shift briefing to begin at the main auditorium in building 2. We'll record any air-to-ground during this change of shift and play it at the close of the briefing. At ground elapsed time of 201 hours and 37 minutes, this is Apollo Control.

END OF TAPE

ASTP (USA) MC 664/1
Time: 17:20 CDT 202:03 GET
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PAO Apollo Control. Ground elapsed time 202 hours and 3 minutes. We have accumulated approximately 5 minutes of air-to-ground tape, recorded during the change-of-shift briefing. We are presently in revolution 124. Less than 24 hours to splashdown for the crew of Apollo, the ASTP mission 31st manned spaceflight in the U.S. Space Program. We'll bring the line up, play the tape, and then bring the line up live, with CAP COMM Dick Truly. Flight director is Neil Hutchinson.

CC-H Apollo, Houston, for Vance. Vance, when you get a chance, if you could get out the Earth obs book, and look at site number 4, I've got a note here I wanted to pass up to you from Farouk about this upcoming Earth obs pass.

DMP He's not on comm right now, Dick.

CC-H Okay. There's no - -

DMP How much time we got?

CC-H Oh, we got lots of time. I got another 35 minutes in this ATS pass, Deke. I've also got a suggestion from Farouk that you ought to take just as that for this TV out the window, ground TV for the VTR. Sometimes - Okay, if you've got a pencil, Deke, I could give you some ON/OFF times for the VTR, which would get a daylight pass of starting at Australia, going up to cover the area where the eddies are, and then turn it off over the clouds over the Pacific, and start it again over the - around Seattle, and then let it run to completion.

DMP Okay. Standby 1, and I'll copy her.

DMP Okay, Dick. I'm ready.

CC-H Okay. VTR ON at time 202 plus 21; VTR OFF at 202 plus 33; VTR ON at 202 plus 47; and then this proposal would just run the VTR until it's out of tape and turn it off at 203 plus 05.

DMP Okay. Copy that. 202:21, ON; 202:33, OFF; back on at 47, OFF at 05, or when we run out.

CC-H Okay. And just take that as a suggestion. If you see a better way to run it, or something out the window you'd rather take, anything would be fine with us.

DMP Understood here. Thank you.

CC-H Apollo, Houston. We're going to be losing ATS on this pass in about 6 or 7 minutes. I've got one flight plan update, and also wanted to talk to Vance about this upcoming Earth obs pass.

CMP Okay. Go ahead, Dick. I just came inside.

CC-H Okay. Vance, I wanted to pass up a note to you from Farouk, and it might help if you were looking the Earth obs book at the pictures of site 4 page in there.

CMP Stand by 1.

CC-H Okay. And also the - do have a flight plan update for somebody to copy on - at 203 hours and 10 minutes.

DMP Okay Dick, ready with the flight plan change.

CC-H Okay. We want to change that VERB 49 maneuver to

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the DM attitude to read to the following angles. 001, 143, 356. And I also want to change the high gain angles to read plus 35, and yaw 262. Over.

DMP Okay. Copy. 001, 143, 356. And (garble) plus 35, and 262.

CC-H That's right. You'll notice we had the sign wrong on that pitch and that was the main reason for the change, also the difference in the VERB 49 slightly. Thanks Deke.

DMP Okay. Thank you.

CMP Okay. And I'm ready copy whatever you've got for me.

CC-H Okay, Vance. It turns out that we have another candidate site for sea farming from Captain Cousteau, and it's the body of water north of Puget Sound there. And if you look on that little map, it's generally that body of water to the west of Vancouver. And you'll be passing on rev 24 to the north of it, and when looking at site 4A, you'll be looking right down the Sound there, and - or right down the body of water looking at site 4A. It's the water that separates Canada from Vancouver Island, and it should be visible from command module window 1 at the same time as site 4A is visible. And if you have a chance, if you'd like to get a color wheel reading, I think the whole length - because the water generally in there is still, and doesn't have a current running through it - I think, just about anywhere in there would be good. I think probably your best chance of getting a color wheel reading though, might be where you have a little more water down towards the south end. But at any rate, there won't be much time to look down there, and so do the best you can.

CMP Okay. So photos, not necessarily stereo, but more or less to cover the Strait of Georgia series, and color wheel reading of the water there.

CC-H That's affirm. Real fine. Thanks a lot.

CMP Sure enough.

CC-H Apollo, Houston. We're about 1 minute from LOS. We'll be seeing you again when we - -

END OF TAPE

ASTP (USA) MC665/1
Time: 17:44 CDT, 202:22 GET
7/23/75

PAO Ap - Apollo Control. Ground elapsed time 202 hours, 25 minutes. Next acquisition in 5 - 35 minutes and 35 seconds will be through Bermuda tracking station. As Apollo concludes the 124th revolution, and as the crew completes their scientific experiments for the day, preparation for final meal - final evening meal and presleep activities for their final night in orbit. Next acquisition in 35 minutes and 10 seconds, this is Apollo Control.

END OF TAPE