

ASTP (USA) MC413/1

Time: 07:05 CDT, 119:43 GET

7/20/75

CMP Houston, Apollo.  
CC-H Go ahead.  
CMP Okay. Do you - on the EUV pad, at 35, do you still  
want an X-ray cal, for background?  
CC-H That's affirmative.  
CMP Okay.  
CC-H And we're watching you - from here -  
PAO Acquisition now, through ATS, for 31 minutes.  
CMP Okay, Crip. We have a GO for the cal.  
CC-H That's affirmative - that's affirmative.  
CMP Okay.  
CMP Cal procedure's complete, Crip.  
CC-H Rog. And - a little bit of good information for you,  
here. That EUV raster scan we did yesterday. We came off with 3/10  
of a degree pointing error, which is great. And - so, we won't have  
to go through and try to do any updates on all those EUV pads. I  
know you guys still have some - we still show the optics on - you  
can secure that (garble) you got your P-52 out of the road and, whenever  
we get a chance, we'll take that data in.  
CMP Okay.

END OF TAPE

ASTP (USA) MC414/1  
Time: 07:15 CDT, 119:53 GET  
7/20/75

CMP Okay, Crip. Here's the P52.

CC-H Okay. Give it to me.

CMP Stars 4 and 14. We had to make a 90 degree roll to find stars from that attitude. NOUN 05 all balls, NOUN 93, plus 00106, minus 00093, minus 00004. I mean - say that one again. Z minus four balls 5. GET, 119:16:25.

CC-H Okay. We got all that and we'll - going to lose you here and we'll see you at Guam at 1 - 120:19 and that's about 25 minutes away.

END OF TAPE

ASTP (USA) MC415/1  
Time: 07:25 CDT, 120:03 GET  
7/20/75

CC-H Apollo, Houston. We terminated our VTR dump, so we're back with you through the ATS. We have you for about 10 more minutes.

CMP Say again, Houston.

CC-H Just telling you that we had terminated our VTR dump. Consequently, I could talk to you again, or you can talk to me - whichever way we desire to go - and we've got you for about 10 minutes.

DMP Okay. Well, we're still trying to get regrouped here, after that last earth obs. So - - some of us starting breakfast, and some trying to finish.

CC-H Okay. Understand. Getting up and getting that pass off early there kind of complicates the morning. But we're with you. We're still standing by for the morning status report, anytime it's convenient for somebody to give it to us. Also, we'd like to get a reading off of the QUAD Alpha propellant, anytime somebody could. We've - we've had a discrepancy between our reading and yours. We think yours is correct and ours has just got a bias on it. Y'all can work those in at your leisure.

DMP Okay. Tom's coming back on the air, here. Let me get -

ACDR Okay, Crip. How do you read me?

CC-H Loud and clear, Tom. How me?

ACDR Loud and clear. What do you - Okay. I got QUAD Alpha for propellant; quantity - we're reading about 85 and 1/2 per cent.

CC-H Okay. Real fine. Thank you very much.

ACDR Okay. For my menu yesterday. For breakfast - I didn't have the coffee. I didn't take those wonderful vitamins. And I had tea with sugar and lemon. For lunch - I didn't eat the soup or the coffee, but I added tea with sugar and lemon. For dinner - I had everything but the vanilla pudding. Added a strawberry drink and tea with sugar and lemon. TRD - today reads: 1-1-0-0-7. 7 hours of good sleep, no medication.

CC-H Tom -

ACDR Go ahead.

CC-H Roger. We copied all that. Standing by for the CP's.

CMP (Garble.)

ACDR Okay.

ACDR Okay. Here we go, for Vance. He had 2 breakfast rolls instead of 1. Knock out the spiced cereal. For lunch - everything. For dinner - no fruit cocktail, but added in a cocoa. Okay. 7 hours of good sleep, TRD reading 4-81-82. No - no medication.

ACDR Okay. Okay, Deke ate everything on his menu, plus strawberry. His reading is 6-1-0-0-6. 7 hours good sleep. 30 gulps. And we got to get busy. Talk to you later.

ASTP (USA) MC415/2  
Time: 07:25 CDT, 120:03 GET  
7/20/75

CC-H Okey doke.  
DMP Houston, Apollo.  
CC-H Go ahead.  
DMP Okay, Crip. I got the helium inject done. The  
temperature is 5 49.  
CC-H Okay, Deke. Thank you very much.  
CC-H Apollo, Houston. We're going to lose you here,  
shortly. And your maneuvers - and we'll have you again at Guam, in 7  
minutes.  
ACDR Roger.

END OF TAPE

ASTP (USA) MC416/1  
Time: 07:35 CDT, 120.13 GET  
7/20/75

ACDR Crip, do you read us?  
CC-H That's affirmative.  
ACDR Do you want us to go to high, FORWARD COMMAND  
and RESET?  
CC-H That's affirmative. And we'll lose you when you go  
do that.  
CC-H Okay. And also we'd like to verify that the glycol  
evaporator water flow is - -  
CC-H Apollo, Houston. We're AOS through Guam for 6 min-  
utes.  
ACDR Roger.

END OF TAPE

ASTP (USA) MC417/1  
Time: 08:18 CDT, 120:56 GET  
7/20/75

CC-H Apollo, Houston. I don't know whether you got my last call regarding it, but on the glycol evaporator water flow valve, we need to make sure that's in the off position - that's center off.

CC-H The reason for that is that we're - our data looks a little bit funny down here now.

ACDR Okay. We had the switch in the wrong position because of the position here it's hard to tell whether it's center off or on.

CC-H Rog. Did you have it in the on position?

ACDR Yeah. Sorry.

CC-H Okay, fine. Thank you.

CC-H Apollo, Houston. We're one minute from LOS. Next station contact through Santiago in 32 minutes at 120:57 - 120:57.

ACDR Okay.

PAO LOS, Guam. Next acquisition 30 minutes away through Santiago, Chili. And flight director Don Puddy has indicated he expects a change of shift briefing to occur at 10:30, about 2 and a half hours from now. At 120:26 ground elapsed time, this is Apollo Control.

PAO 120 hours, 56 minutes ground elapsed time. This is Apollo Control. Apollo about 16 seconds away from acquisition through the tracking site at Santiago - Santiago, Chili - brand new tracking station for ASTP. Hold the line open now for acquisition through Santiago.

CC-H Apollo, Houston. We're locked up through Santiago and we should be with you for about 57 minutes.

DMP Roger.

CC-H Apollo, Houston. If somebody's got a moment, we'd like to verify a switch position on panel 230.

CMP Okay. Stand by.

CMP Okay. What is it Crip?

CC-H Okay. Down in the lower right hand corner there on the - under relay mode control the TV realtime slash is playback. Can you tell us where that is?

CMP Just a minute. Or up TLM rather.

CC-H Sorry Vance, say again please.

CMP Roger. The realtime playback switch is in up TLM position - middle position.

CC-H Okay. Fine. And we have drifted out of attitude, we noticed and somebody's going to have to give us a VERB 58.

END OF TAPE

ASTP (USA) MC418/1  
Time: 08:38 CDT, 121:16 GET  
Date: 7/20/75

CC-H Apollo, Houston. When somebody gets a chance I have the new pad time for rev 73 and also we got a switch verification again we're going to need to do, but no big hurry on either.

CMP Okay, ready.

CC-H Okay. If you want to copy that time down, Vance, it's a - for rev 73 - and understand you are ready to copy?

CMP That's right Crip.

CC-H Okay. it's 121:43:27. 14 - 121:43:27.

CMP Okay. Got it.

CC-H Okay. And that switch we're going to need to make sure it's in the right position for a couple little TV things that we've got. On 181 we need to verify that the CM/DM power switch is ON.

CMP Okay.

CMP Okay. That switch is off, Crip.

CC-H Understand it was OFF? If it was we need - we need turn it ON.

CMP Okay, coming on.

CC-H Okay. And we're just going to leave that switch on now.

CMP Roger.

CMP Crip, are you there?

CC-H That's affirm, Vance. Go ahead.

CMP In line with our recent policy, I'd like to activate the secondary loop for a little while, evaporator 2. If that's okay.

CC-H Standby 1 on that, Vance.

CC-H Vance, we - we think we've got a problem - that little switch problem we had earlier on the primary loop. We believe we've got wa - water in there and its cold and we think - we think we're going to freeze it up so we'd like you to stand by on that. We're getting ready here, we believe to scrub the rev 74 pass so that we can roll the thing over and execute the ECS/SSR2 procedure which is to thaw that vent out.

CMP Understand.

CC-H And I'll - I'll get with you a little bit more information on that shortly.

CMP Okay.

END OF TAPE

ASTP (USA) MC419/1  
Time: 08:44 CDT, 12I 24 GET  
7/20/75

CMP Houston, Apollo.  
CC-H Go ahead.  
CMP Okay, we're maneuvering.  
CC-H Copy.  
CMP VERB 49.  
CC-H Okay, fine. Vance, for your information, we were looking at the small bound of data when we came through Madrid; we're dumping now so we're not - we're dumping DSEC so we're not looking at realtime data. Consequently, we're still trying to ponder whether you're - whether that loop was actually frozen up, and - but right now we're thinkin we can press on. Because it looked like from the blurp of data that we got that it was working properly.  
CMP Okay. It looks to me like the primary loop is working properly. But I'm wondering about the capability of the secondary right now. I could try to turn it on real quick and see for you, if you wish. I - when we talked before, we started to turn it on just for a moment, but it didn't look like it was going to work normal, and turned it right off.  
CC-H Okay. I think, per our agreement on operating these experiments we should not have the - either of the evaporators ON at this time; so I think we'd better hold up on that if that's okay.  
CMP Okay. Well, right now the status of the primary is that it's operating; and it looks like it's operating in a normal range, although it's got the glycol evap temperature down to about 39 or 40. We can turn it OFF right now.  
CC-H Okay. Yeah, we had assumed that you guys had already deactivated that that was called out at 25.  
CMP Okay. We were - -  
CC-H Before you secure - -  
CMP - - hesitating to touch - we were hesitating to touch it, simply because we knew we might have to roll around and unfreeze it.  
CC-H Okay. Why don't you go ahead and give us the steam pressure and - -  
CMP Okay. Steam pressure is .12 on the primary system and the glycol evap temperature's down to about 38. Of course, the secondary coolant loop is ON. We're holding to turn it OFF until we hear from you right now.

END OF TAPE



ASTP (USA) MC420/1  
Time: 08:55 CDT, 121:35 GET  
7/20/75

ACDR            Okay, Crip. Do you read us?  
CC-H            I'm sorry. Say it again, Tom?  
ACDR            Roger. Do you want us to turn that EVAP off now?  
CC-H            Stand by.  
ACDR            Or do you want to look at the data some more?  
CC-H            That's affirmative. We want to go ahead and  
deactivate it.  
ACDR            All right. Turn it off.  
DMP             Houston, Apollo.  
CC-H            Go ahead.  
DMP             Okay. We've deactivated - and Tom's still got his  
thumb on the INCREASE switch. But it looks like the steam pressure  
is not going above about .17 - or .18.  
CC-H            Copy that.  
DMP             Glycol evap temperatures are at 46 right now.  
CC-H            I'm - I'm advised that's a satisfactory reading - that  
you're reading the vapor pressure right now.  
DMP             Okay. Good.  
ACDR            Okay. You want us to press on with the next one?  
CC-H            Yes sir.  
CC-H            Apollo, Houston. We've got a small problem on  
the x-ray high power down on panel 230. We'd like you to take it off  
and then go to 2, if you would. Somebody can get it for us.

END OF TAPE

ASTP (USA) MC421/1  
Time: 09:05 CDT, 121:45 GET  
7/20/75

CC-H                - - and now we've got a small problem on the X-ray high  
power down on panel 230. We'd like you to take it OFF and then go to  
2 if you would - somebody can get it for us.  
ACDR                Understand.  
CC-H                Okay - -  
ACDR                Hold it. What high voltage power to 2?  
CC-H                (Garble)  
CC-H                We want you to delay in off for 5 seconds.  
CC-H                Apollo, Houston in the blind on high gain antenna.  
Would you go to narrow and reacq please - narrow and reacq.  
CC-H                Apollo, Houston. We're locked back up with you.  
We dropped out there awhile.  
CC-H                Apollo, Houston. We see you're a little bit behind  
on the pad there. Recommend you go to the 3 plus 30 DET time and go  
ahead and proceed with that one.  
ACDR                Crip, how do you read?  
CC-H                Loud and clear. How me?  
CC-H                Apollo, Houston. Read you loud and clear.  
CC-H                Apollo, Houston. We're back with you. How do you  
read?  
CC-H                Apollo, Houston. In the blind. If you read, we would  
like you to perform an x-ray POWER DOWN. X-ray POWER DOWN. The data is not  
looking good to us.  
CMP                 Crip, how do you read?  
CC-H                Loud and clear. How me?

END OF TAPE

ASTP (USA) MC422/1

Time: 09:15 CDT, 121:55 GET

7/20/75

ACDR Crip, how do you read?  
CC-H Loud and clear. How me?  
ACDR Crip, how do you read?  
CC-H Loud and clear, Tom. How me?  
CC-H Apollo, Houston. In the blind. We're going LOS  
on the ATS. We'll see you at Orroral in 9.0 minutes. 9 minutes.  
CC-H (Garble) we're in the blind. X-ray power down.

END OF TAPE

ASTP (USA) MC423/1

Time: 09:25 CDT, 122:05 GET

7/20/75

CC-H Apollo, Houston. We're AOS through Orroral, talking to you for 2 minutes and we need the X-ray power down performed please The data on the instrument is not normal.

ACDR X-ray power down. Okay.

CC-H And no need to acknowledge, we were getting down links to you on the ATS awhile ago. We had an uplink problem. Apparently we were locked on a sight lobe, or something (garble) but we're - got a good down link.

ACDR Okay. You want the X-ray power down now.

CC-H That's affirmative.

DMP Okay. X-ray's power down, Crip.

CC-H Okay, Deke. Thank you.

CC-H Okay, we're about 30 seconds from LOS and our next station contact is through the ATS at 122:40 about 34 minutes away.

DMP Okay.

PAO Loss of signal through Orroral Valley. Next acquisition 28 minutes. And that'll be through Santiago, Chile. 122:07, this is Apollo Control.

END OF TAPE

ASTP (USA) MC424/1  
Time: 09:27 CDT, 122:37 GET  
Date: 7/20/75

PAO 122 hours, 35 minutes ground elapsed time. This is Apollo Control. Spacecraft about 20 seconds away from acquisition through Quito. Right now Deke Slayton should be exercising and Tom Stafford is taking Earth observations photographs of the Humboldt Current. That's off the coast of western South America, and the Plains of Nazca area in Peru. Hold the line open now for acquisition through Quito.

CC-H Apollo, Houston. We're here with you very briefly through Quito.

ACDR How do you read, Houston?

CC-H We're reading you clear but scratchy.

ACDR Okay, look, get with Farouk. This attitude for visual obs (Garble) was okay but we - there's no room to get your head around or look upside down (Garble) this makes everything about twice as easy.

CC-H Tom, if you're still reading we're breaking up. I'll get your comment when we get - get in the ATS contact.

PAO Loss of signal through Quito. Low elvation angle, lot of mountains in South America preventing the lockon of the Apollo antenna.

PAO Reacquisition about a minute away through ATS. We'll just keep the line up for that.

CC-H Apollo, Houston in the blind, panel 230 we need UP TELEMETRY to RELAY, please.

CC-H Apollo, Houston, in the blind, panel 230 we need UP TELEMETRY switch to RELAY, please.

ACDR Houston, Apollo. Do you read?

CC-H Apollo, Houston. Reading you loud and clear now, Tom.

ACDR Okay, did you get my last transmission?

CC-H Negative. I - I understood you were having some kind of problem with your vis obs attitude in the window and I'd like to get that again, if I could.

ACDR Okay, look, I'm sure this this is optimized because sometimes you do the vis obs at the mapping appi - attitude. I'm now wings level but I've got a lot of cloud cover, of course, so I can't see much. (Garble) I'm not losing too much by talking to you. What we want to do is to - to just the vis obs only - to roll to heads up. Because if we could sit down behind the couch this attitude wouldn't be bad. But the trouble is there's not enough room to sit down behind the couch and look out where you're going. You can't get in there. You're too high. So we want to roll to HEADS UP, pitch DOWN looking straight foward for the vis obs attitude when it's not associated with the mapping. Can you get Farouk and his troops tracking on that? Over.

CC-H Okay, Tom. I think we understand that and we'll - we'll take a look at it for the upcoming passes.

ACDR Yes, this HEADS DOWN; when you look out like that to get the view, you're straining yourself up against the instrument

ASTP (USA) MC424/2  
Time: 09:27 CDT, 122:37 GET  
Date: 7/20/75

panel, holding your feet in the struts against the tunnel and all you can look is left and right. Well, you can overcome that but you just can't get the lead in. I tried sitting upside down on the couch, but then all you can see it out is through other side of the window. It's really a hell of an awkward situation. So we want to pitch down at least 30 or 40 degrees, nose down and we'll take everything coming head on for the vis obs wings level. Over.

CC-H Okay. If I'm understanding, you're talking about wings level, HEADS UP, PITCH DOWN, about 30 to 40 degrees. Is that correct?

ACDR Yes, at least. Whatever it takes to get that window out good instead of this HEADS DOWN.

ACDR The mapping passes we'll have to leave like they are. We understand that. For when he includes mapping with vis obs, there's nothing we can do about that. But as far as just pure vis obs by itself, we want HEADS UP, PITCH DOWN 30 degrees. You should be able to determine that. I'm going to say - oh at least pitch down at least 30 - 30 - 30 or 40 degrees.

CC-H Okay, fine Tom. And just to make sure that we do understand that we're talking about with docking module FORWARD. Is that correct?

ACDR Oh, yes. Docking module FORWARD, pitch DOWN.

CC-H Okay.

ACDR - - Out window 3.

CC-H Roger that.

CC-H Okay, will somebody get the chance on that panel 230 we can go ahead and go back to UP TELEMETRY on the switch.

END OF TAPE

ASTP (USA) MC425/1

Time: 10:07 CDT, 122:47 GET

7/20/75

CC-H Apollo, Houston, for the AC. Tom, when you get a moment there you can talk a little bit, we'd like a few clarifications on that attitude that you were requesting.

ACDR Yeah, just - for - hang on, I got a target here.

CC-H Go ahead. No problem, we can just get you - whenever you have some time to talk.

ACDR Okay, Crip. Back with you.

CC-H Okay, Tom. One of the things we want to clarify; we're assuming that you want to be with your back to the couch. Is that correct?

ACDR Yeah. Well, (garble) the back to - I'm with my back to the couch now, looking forward. And again, you - you can do it, but it just seems easier if your head's up on it looking down forward. Of course I guess you don't get the high-gain antenna, so that's something to play off.

CC-H Yeah. We're going to have to look at the high gain antenna. One other item: have you got any real preference as to whether the objects are moving from the top of the window, down or from the bottom of the window up?

ACDR No, I don't think so; you talking retrograde?

CC-H That's affirm.

ACDR No. I think it's easier when you get a lead into it coming forward.

CC-H Sorry, I didn't quite get all of that. You said a lead into it; would you prefer coming from the top of the window down, then?

ACDR Well, like right now, yeah, they're coming from the top of the window down, as they're going forward here. Listen, let's just go ahead and see what we've got here for a while. Sometime later on, as we get an opportunity where it's not coming into an antenna angle, we might just take a look at it and do it ourselves.

CC-H Okay. One other - Okay. We'll - we'll go ahead and take a look at it. One of the things we are considering was the - using some - the attitudes similar to the mapping pass that we used for window 5 and only to set it up for window 3. But we'll - we'll get - look at it down here and get back so that we can give you a new one.

ACDR Okay.

END OF TAPE

ASTP (USA) MC426/1  
Time: 10:17 CDT, 122:57 GET  
7/20/75

CC-H Apollo, Houston. For anybody, I guess specifically the CP - probably the one involved - I do have the new start time for the helium scan.

ACDR Okay, Crip. I'm the only one on the headset now.

CC-H Okay. No big hurry here Tom. You want to write it down in the medium growth scan pad, rev 74, 75.

ACDR Okay. Rev 74, 75 helium growth scan. Okay. Deke will count them. I'm still taking some pictures.

CC-H Okay.

ACDR Trying to.

DMP Okay. Go ahead, Crip.

CC-H Okay, Deke. You got that out? The new time is 123:28:21.

DMP Okay. 123:28:21 and that's page 695.

CC-H That's correct and also we need to delete - that is delete x-ray ops from - from this pass.

DMP Understand. Delete X-ray OPS.

CC-H Rog. And I got one item I'd like to go ahead and do now. We'd like you to deactivate the primary evaporator at this time if you would.

DMP Okay. It's done.

CC-H And Deke, no need to respond, but when somebody gets started on these experiments we're going down to panel 230, I got one switch that I need to change and you just tell me when somebody's down there.

DMP Okay. I'll be down there in about 10 seconds.

CC-H Okay. There's no rush.

DMP Okay. Go ahead.

CC-H Okay. What we're going to do is to go ahead and ask you to turn on the X-ray low voltage power at this time and we're going to leave it on. Essentially we'll be leaving it on for the remainder of the mission. What we're trying to do is to get a little heat into that particular instrument because we think that may cure the problem that we're saying was what appears to be some contamination. I would suggest that you either put a little piece of tape over it, and we'll also can modify the SM experiment cue cards you got down there to delete turning the low voltage power off on the X-ray power down.

DMP Okay. So you want me to do is pull the power and higher it(?) all the time.

CC-H That's affirmative. And it's - except for making everything hunky dory under X-ray ops on that cue card if you want to just put a verify after that part where we turn low voltage power on normally that would probably help out.

DMP Okay. We'll fix it. It's on right now.

CC-H Okay. Fine. Thank you very much.

END OF TAPE



ASTP (USA) MC427/1  
Time: 10:34 CDT, 123:14 GET  
7/20/75

CC-H Apollo, Houston. We see that you're sitting here, all squared away, ready for this upcoming helium glow pass. Might just remind you again - the way we'd talked about it - that x-ray that we're not going to be doing is - occurs several times - turning it on and off along with the EUV on this pass. Of course, that's to keep from dragging through the turns. So, remember - we don't want to turn the x-ray back on. And, of course, we do want to get the EUV power down at applicable places, and then power it back up. Might also inform you that, even though my voice hasn't changed, our team has changed. I now represent the voice of the Amber Team, Frank Littleton's team. We're looking forward to the rest of the day's operations with you.

CMP Very good, Crip. Understand. You don't want the x-ray on.

CC-H Roger, Vance.

CMP Houston, Apollo.

CC-H Rog, Vance. Go ahead.

CMP Okay. We've loaded up B-20 option 2. And we see that the start for it is - is a probe at 0-0 on the DEG. Seemed to me we'd load up a time (garble) 34, normally. Don't we?

CC-H Negative.

CMP Don't we want -

CC-H No, Vance. What we're going to be doing - you should have a time and a - and the pass loaded. And we'll be initiating all of these on upside proing on your NOUN 34's.

CMP Okay. As long as the time's in the past, we're okay. Understand. (Garble) 0-0 (garble).

CC-H That's fine. That's what - Okay. And we're about to go LOS, when you initiate this B-20. And we'll have you again, in about 11 minutes, through Orroral. That's at 1:23:36.

CMP Okay. Understand.

END OF TAPE

ASTP (USA) MC428/1  
Time: 10:50 CDT, 123:30 GET  
7/20/75

DEAD AIR TAPE

ASTP (USA) MC429/1  
Time: 11:00 CDT, 123:40 GET  
7/20/75

CC-H - - what we saw was looking good. We were dropping out due to your maneuver there, but everything right now is looking okay. We're not - we're not looking at data at this particular moment. I'm talking to you on VHF only.

ACDR Right. Okay.

CC-H Apollo, Houston. We need UP TELEMETRY to STDN.

ACDR Say again.

CC-H We need that panel 230 switch up telemetry switch to direct, please.

ACDR Okay.

CC-H Apollo, Houston. We are one minute from LOS. Next station contact through Quito in 27 minutes and if we could have the up telemetry switch back to up telemetry when you get a chance.

CMP Okay. Up telemetry switch back to up telemetry.

PAO This is Apollo Control. Loss of signal at Orroral Valley. Next station will be Quito, Ecuador in 25 minutes. Change of shift briefing in the main auditorium at JSC about 10 minutes from now with flight director Don Puddy. That's at 11:15 central daylight in the JSC main auditorium. The interpreter who handles most of the conversations between ASTP technical director Glynn Lunney and his counterpart Professor Konstantin Bushuyev in Moscow is 73 year old Alex Tatistcheff. Alex is somewhat of a amateur poet and he put together a six verse poem in the form of a memorandum at least with a memorandum header. The memorandum starts off to the men of JSC from the AS - the ASTP interpreters. Subject appreciation and thanks on ASTP's finest hour. Then he lapses into 6 verses of 4 lines each which run as follows. Tom Stafford's name is known throughout the length and breath of USA, both Vance and Deke are household names and so are Val's and Alexey's, all people sing their praise on high but who has heard of Glynn and Guy and Pete and Bob our agent Ed who's labors to this success led. At ASTP's finest hour with praises them we want to shower. We who translated every word of wisdom from their mouth we heard. We the interpreters of ASTP we thank you, men of JSC. For you and all your friends with grace made possible this link in space. We thank you for the patient way in which you while the time away and waited for each of us to pass your thoughts on to the Rus. The net result that can't be beat was an unpresedented feat of master minding complex thoughts that link the cosmo/astronauts. And that is the conclusion of Mr. Tatistcheff's poem. At 123 hours, 43 minutes ground elapsed time. Returning in 22 minutes unless the change of shift press conference is still underway. If it is we'll tape the air/ground and play it back at the end of the press conference. This is Apollo Control at 123:44 ground elapsed time.

END OF TAPE

ASTP (USA) MC430/1  
Time: 12:11 CDT, 124:51 GET  
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PAO This is Apollo Control at 124:39 ground elapsed time. Apollo spacecraft now just east of the Black Sea with some 29 minutes remaining in ATS-6 satellite coverage however Apollo is out of attitude for the ATS-6 as shown in the flight plan and are essentially LOS even though under the satellite coverage. Some 6 minutes of air to ground tape was accumulated during the change of shift briefing. We'll play back that tape now and stay up live at the conclusion of the tape playback for the remainder of this ATS-6 satellite pass.

CC-H Apollo, Houston. AOS through Quito for 5 minutes.  
CMP (Garble)  
ACDR Okay.  
CC-H I'm sorry we dropped out there Tom and I didn't catch all your comments.  
CC-H We got (garble) COMM right now. Why don't you wait a moment?  
CC-H Okay, Apollo. I think we locked up pretty good. I'll try to stay out of your hair on this pass.  
ACDR Okay, Crip. Everything seems to be going real good on the (garble).  
CC-H Roger. Thank you.  
ACDR Crip, today seems like kind of a more normal work-day compared to those last five.  
CC-H Well, we hoped you'd be a little bit more relaxed there. Still, it's going to keep you busy I think.  
ACDR (Garble) but it's not like three people trying to crawl over each other for about 16 or 18 hours.  
CC-H Yeah that vehicle's not that big. We're going over the hill and we'll pick you up at MILA in about - about 1 minute.  
CC-H Going over the hill. See you in MILA in about a minute.  
ACDR Okay.  
CC-H Apollo, Houston. We're locked up now through MILA and with the ATS we should have you for about 55 minutes.  
CMP Okay, Dick. I mean Crip. Sorry.  
CC-H Okay, Charlie.  
(Laughter)  
CMP My name's Jack.  
CC-H Roger, Ed.  
CC-H Apollo, Houston for the CP. We don't want to mess up your maneuvering here, but we're going to verify - you told us you tried to turn the secondary evap on after we thought we had the problem there. I'd like to verify that you did that and what you saw with it.  
CMP I turned it on I guess for about a half a minute and I just noticed that the steam pressure didn't want to come down. It only came down a little bit.  
CC-H Okay.  
CMP How's the primary evaporator appear to you from down there now?

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CC-H We're pretty sure that - that we've got a blockage somewhere and we're - we're concerned what we want to do about it.

CC-H How's the cabin temp running for your guys? Getting a little warm?

ACDR No. It's not too bad Crip. It's - it's a little warm. We're all here in our T-shirts, but we got the cabin fan running. I'm sure that's pulled some of the cold air out of the docking module down here.

CC-H Okay.

ACDR It's not cool, but on the other hand, it's not warm like it was before.

CC-H Okay, copy that.

CC-H Apollo, Houston. We're about a minute and a half from LOS through Newfoundland. And we won't have you through the ATS until 124:52. At that time, we'll be talking to you about modifying our attitude so we can put a little sun on the water port and we will also - I'm sorry I was telling you a story we're going to have Madrid in about 5 minutes as INCO corrects me. But, we're going to be deleting activating the primary evaporator and we're going to leave that off the rest of the day if your comfort stays okay. And just kind of let that (garble) out.

ACDR Okay.

ACDR Deke - Dick where are we right this minute.

CC-H Oh, you're north Atlantic. You're just off the coast of Newfoundland probably about 1,000 miles.

ACDR Must be right on the airways. I see a couple of contrails and I can almost pick out one airplane down there. Wow.

CC-H It's probably pretty good - yeah that could be just about the primary route between the States and Europe.

CC-H Apollo, Houston. We're AOS through Madrid for 2 minutes.

ACDR Hey Crip, you may be happy to know that our fish farm is doing well. I don't count any missing ones.

CC-H Very good. Any additional ones?

ACDR Well I was going to just - I was going to ask you that question but I've got 5 in all compartments except one which has 6.

CC-H Okay.

ACDR You might check and see whether there's anything unusual about that.

CC-H Apollo, Houston. Getting ready to go over the hill and again we'll see you when you finish up this (garble).

END OF TAPE

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CC-H Apollo, Houston. We're AOS through the ATS. We have you for 16 minutes.

CC-H Apollo, Houston. We're AOS. If you read, I need to make some modifications to our flight plan here, and if somebody could dig it out -

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

CMP Loud and clear. How do you read, Crip?

CC-H Read you the same, Vance. We're going to have to make some mods here to our flight plan to help out our evaporator situation, which we don't think's a big ditty (sic), but we just want a roll over and point at the sun as I mentioned earlier. And also, we're going to try to solve our X-ray problem that we ran into earlier; and it's going to require a little marking if I can have your time.

ACDR Okay. Go ahead. We're ready to copy it, Crip.

CC-H Okay, Tom. There at about 124:55, where we - I mentioned earlier we had the activate primary evaporator; we want to delete that. We also want to delete at about the same time that verp - VERB 49 maneuver.

ACDR Got them.

CC-H Okay. I'd like at 125:10 to add in a VERB 49 maneuver to 210, 148, 000. And that'll - that'll point the part at the sun.

ACDR Okay. 25:10, VERB 49 to 210, 148, 000.

CC-H Okay. That's good. I'd like you to drop down about 125:40 under Deke's column. It now calls out for X-ray OP and EUV OP. I would like to delete those; in the place of them add an X-ray backup purge, which is on page 1-23 of the experiments checklist.

ACDR Roger. X-ray backup purge, page 1-23 of the experiment checklist.

CC-H Okay. And we need a temporary modification on that thing, and after he finishes up the purge, it tells him to select X-ray high voltage power to 1 and we're going use 2 for the next upcoming operations and wherever you feel's best to put that note - either here or in the flight plan to call your attention to it or to go ahead and pull that checklist out and make a note there for - temporarily we'll want to use X-ray high voltage power number 2.

ACDR We'll put it in both.

CC-H Okay, fine.

CC-H Tom, you still reading okay?

ACDR Loud and clear.

CC-H Okay, fine. The ATS angles I have at 125:45, I've got the modified view to a new attitude - I'm sorry, 125:52. That's a pitch of minus 21, and a yaw of 186, for high gain antenna angle.

ACDR Okay. With the new VERB 49: pitch of minus 21, yaw of plus 186.

CC-H Okay. Also, Tom, I mentioned that X-ray backup purge - we would like that performed on a time of 125:38.

ACDR Roger. X-ray backup purge, 125:38.

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CC-H Okay, fine. That's good. Now if you can pull out your X-ray pad for rev 76, we will go ahead and make - we will make the mods to that pad for time and so forth.

ACDR Okay. Stand by just 1 minute.

CMP Okay, go ahead.

CC-H Okay, Vance. The DET time will be 126:10:09.

CMP Roger. 126:10:09.

CC-H Okay, and I've got a - got a few other mods for that pad I'm going to have to make, due to our attitude change; and also the fact we need to increase accuracy a little bit on a couple of stars. At a DET time, currently of 55, that attitude it calls out - and it says verify the attitude - we will not be there. I would like to modify that DET time to 50, and eliminate the verify; that will have to be a maneuver.

CMP Okay. At 55, just change the 55 to 50; cross out verify.

CC-H Okay, fine. And right below that where it has the OPS, I would like to do at 55. Add in a DET time of 55. For the OPS, eliminate the verify and I would also like a note to use high - -

END OF TAPE

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CC-H - that's 55 - add in a DET time of 55. For the OP - eliminate the verify. And I would also like a note to use high voltage power number 2.

CMP Okay. The next line down from 50, put 55 in the blank. And cross out verify. And add in high voltage power number 2.

CC-H Okay.

CMP Right, sir.

CC-H Okay. And we're almost there. At 10:56 I need to modify that attitude slightly - to read 3-5-0-point-4-0 and 1-2-4-point-5-0.

CMP Okay. Please repeat those.

CC-H Okay. What we're doing is increasing the pointing accuracy for 2 stars which are very faint. We don't think we'll get them otherwise. At 10-56, we need roll of 3-5-0-point-4-0 and pitch of 1-2-4-point-5-0.

CMP Okay. Understand. Instead of 350 - 350.40. Instead of 1-2-4 - 1-2-4-point-5-0.

CC-H Okay. And one more, down at 32-35. For roll - want to make that 3-5-5-point-3-0. For pitch - I want to make that 9-9-point-7-0.

CMP Okay. At 32-35, 355.30 and 99.70.

CC-H Okay. Finally, we got it all through. That's a lot of reading. Hope it wasn't too bad on you. And you can go ahead and have your chow.

CMP Okey doke. Very good.

ACDR Okay. Houston, Apollo.

CC-H Go ahead, Tom.

ACDR Okay, I'm on page 123 of the checklist. And it says x-ray backup purge OFF. Then it says wait 10 minutes. Then x-ray high voltage power 1. What you're saying there is to go right away to x-ray low voltage 2 and omit that high voltage power 1. Right?

CC-H That's - after the, "Wait 10 minutes," down there at the bottom, where it says, "X-ray high voltage power to 1" - we want to use 2. And that's only going to be for this time, we hope.

ACDR I got you. So I'll circle it.

CC-H Thank you very much, Tom.

CC-H Just a little information. What we've been getting is: our counts on that x-ray instrument are just up above normal, what they should be. Also, we're seeing the high voltage running a little bit higher than it should be. And we're not - it almost looks like 2 separate problems, and we're trying to isolate them out.

ACDR Roger.

CMP Have these been going ever since you first looked at the instrument, or - About when did they start?

CC-H It - we first looked - when we first did the power UP, it was basically okay UP. But when we did that raster scan yesterday,



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that EUV raster scan's where we first noted a problem.

CMP I see.

ACDR Hey, Crip. We ran - we were kind of late finishing up last night and missed the news. Sometime today, I don't know, maybe on the next ATS pass, if we got some time, if you could give us some news, we'd appreciate it.

CC-H Oh, I'd love to give you some news. I'm just standing by, here, in the GO mode.

ACDR Okay, then - You could give it to us now, until we got - break lock.

CC-H We're about to break lock. It - probably - a couple of minutes, now, to LOS, and they need to reconfigure the things. So why don't we wait - try to pick it up on one of the - one of the later ones. We got MILA at - about 36 minutes from now. See you there.

ACDR Okay. Real good, Crip.

END OF TAPE

ASTP (USA) MC433/1

Time: 12:32 CDT, 125:12 GET

Date: 7/20/75

PAO                    This is Apollo Control. This is Apollo Control, loss of signal through ATS-6 satellite, 34 minutes away from next station in Merritt Island Launch Area. Meanwhile the members of Team 1 here in the Mission Control Center are going to group together around the flight director's console for the traditional team picture. Johnson Space Center photographer, Pat Patnesky was - make the photos not only of the main control room team but also all the people from the support rooms. In all of the history of space flight there've been a great many firsts. Spunik I was the first satellite. Yuri Gagarin was - aboard Vostok I was the first man in space. Alan Shepard, the first American in space. Alexey Leonov was the first man to take a spacewalk. Valentina Tereshkova was first woman in space. Neil Armstrong, the first man to step on the Moon. And there've been some firsts on this Apollo-Soyuz mission, the first joint flight with docking and crew transfer of spacecraft between two nations. There've also been a great many lasts in Apollo-Soyuz. The last flight of the Apollo type spacecraft. It will be the last water landing of a U.S. spacecraft. Will be the last use of parachutes for U.S. manned spacecraft landing. And the launch on the 15th was the last flight by any of the Saturn family of launch vehicles. At 125:13 ground elapsed time and 32 minutes away from the acquisition through the Merritt Island Launch Area tracking station. This is Apollo Control.

END OF TAPE