

ASTP (USA) MC434/1  
Time: 13:06 CDT, 125:46  
Date: 7/20/75

PAO This is Apollo Control at 125:44 ground elapsed time and we're in contact through Merritt Island Launch Area with Apollo spacecraft. However, this will be delayed somewhat and playback recorded. Incoming from Moscow, are - is some television from Salyut space station with their cosmonauts Peter Klymouk and Vitaly Sevastyanov. And a conversation between the Salyut and Soyuz. We're rolling at this time.

USSR (Good day, today.)

CC-M (I have 30 seconds and in 2 minutes you will meet over the Yuri Gagarin ship.)

USSR (Roger.)

KIO (This is Soviet Mission Control Center. In one minute the Soyuz 19 spacecraft will enter the zone of coverage of the Yuri Gagarin tracking ship. We would like remind you that at the current 86th orbit in order to - Eupatoria and Tbilisi tracking stations will also participate in setting up comm with the spacecraft.)

CC-M (Soyuz, this is Moscow.)

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CC-M (Soyuz, this is Moscow.)

SFE (Okay for comm, I hear you well.)

CC-M (I want to give you form 3.)

SFE (Form 3?)

CC-M (Yes.)

SFE (Wait a minute.)

SFE (Okay, give.)

CC-M (Number 80. Orbit 85; the buffer

battery is 125. The main system - control system fuel 80; backup 20.

How did you copy?)

USSR (Fuel 80, backup 20, battery capacity 125 ampere-hours.)

CC-M (Affirmative. Roger.)

CC-M (In 10 minutes we will have comm.)

USSR (Thank you.)

END OF TAPE

ASTP (USA) MC435/1  
Time: 13:16 CDT, 125:59 GET  
7/20/75

KIO (This is the Soviet Mission Control Center. Moscow time, 21 hours. The comm session has been completed over the Korolev and Gagarin tracking ships. Next comm session will be in 6 minutes, when the spacecraft Soyuz 19 enters the radio coverage area of the Eupatoria tracking station. So far, the cosmonauts - )

ACDR Yeah, we've got some great help from people like you and the rest of them at that center on the ground, too.

CC-H Yeah, these troops down here have been working hard.

END OF TAPE

ASTP (USA) MC436/1  
Time: 13:21 CDT, 125:59 GET  
7/20/75

ACDR We've got some great help from people like you and  
the rest of them in that Center on the ground, too.

CC-H Yeah, these troops down here have been working hard.

ACDR And we're maneuvered to the first act.

CC-H Roger.

CMP Crip - how should we treat the water boiler, after  
this? Just open it at the regular time, or what?

CC-H No. We want to hold up on activating it. I can  
walk you through this day's OPS, but we would like to leave it off for  
today, until we talk to you - look a bit further at it.

CMP Okay.

CC-H Would you like me to go through with you and mark  
them all out?

CMP Yeah, sure. I can do that right now.

CC-H Okay. Well, don't want to interfere with this  
operation you're doing.

CMP Yeah, on second thought, why don't we hold up for  
a few minutes?

CC-H Okay. In fact, if you like, we don't have to mark  
them. We'll just remind you each time, just ahead of time.

CMP Okay. Main thing, then, is just the philosophy -  
when we get a chance.

CC-H Yeah. We'll leave it off until we - We'll just  
keep watching it down here, and when we're - sure it's squared away,  
we'll get back with you.

CMP Right.

CC-H You guys still fairly comfortable, as far as  
temperature goes?

CMP Strangely enough, it's been pretty good, just  
lately.

CMP We kind of thought it'd heat up quite a bit when  
we didn't have the water boiler going, and we haven't noticed it  
too much.

CC-H Well, that's good.

CC-H Apollo, Houston. We're still seeing high count  
from that x-ray data and, if we can, we'd like somebody down in 230 to  
take the high voltage power switch from the x-ray to OFF for 10 seconds,  
and then to 1.

ACDR Okay. Deke's working it now.

CC-H Thank you, Tom.

DMP Okay. She's in 1.

CC-H Okay. Thank you, Deke.

END OF TAPE

ASTP (USA) MC437/1

Time: 13:31 CDT, 126:11 GET

7/20/75

CC-H Apollo, Houston. Our X-ray's still not looking all that great and we would like to minimize the time that we have the high voltage power on. What we would like you to do is - down you got a maneuver coming up at 10:56 and it's a pretty long one. What we'd like you to do is at 10:56 go ahead and turn the high voltage power on the X-ray to off and then at 15:46 when we're back to the data take time we'd like to turn it back on - back to one.

ACDR Okay. High voltage on the X-ray off at 10:56 and back on at 15:46.

CC-H That's affirm, Tom. Sorry to keep bugging you around on here, but we're trying to improve the data as good as we can.

ACDR Understand. No problem.

ACDR Houston, Apollo.

CC-H Go ahead, Tom.

ACDR Okay. Again review - at 10:56 the high voltage off and then after we finish the maneuver and at 15:46 the high voltage back on and you want number 1. Right?

CC-H That's affirmative.

END OF TAPE

ASTP (USA) MC438/1  
Time: 13:40 CDT, 126:20 GET  
Date: 7/20/75

CMP Houston, Apollo.  
CC-H Go ahead.  
CMP Crip, how's our hydrogen and oxygen going? We  
haven't talked about that all these days. I was just curious.  
CC-H Redline will answer.  
MCC-H Okay, Vance we're in good shape. We're running  
right on on hydrogen, right on what we anticipated, a little bit less  
I guess on oxygen but we we've got 9 day capability.  
CMP Very good.

END OF TAPE

ASTP (USA) MC439/1

Time: 13:50 CDT, 126:30 GET

7/20/75

CC-H Apollo, Houston. We had good data there for about 3 minutes off the X-ray and now it's gone out on us again, and if we can we'd like to get that high voltage once more turned OFF for 60 seconds and then back ON.

ACDR Okay. Vance'll go right in.

CMP OFF and ON.

CMP Coming OFF now.

CC-H Okay, Vance. Thank you.

CMP And it's back ON again.

CC-H Okay. Thank you.

END OF TAPE

ASTP (USA) MC440/1  
Time: 14:00 CDT, 126:40 GET  
7/20/75

CC-H Apollo, Houston, Vance, if you could do it once more for us we'd like to go down to 230 on that X-ray power switch - high voltage power and take it to off for 60 and back on.

CMP Okay. High voltage off for 60 and back on.

CC-H Apollo, Houston. I boo booted a while ago and didn't give you your start time for Dour GET on the next pass coming up and it's back-to-back. You might want to write that down on the next page.

CMP Okay. That's H - helium glow scan?

CC-H Yes, sir. Helium glow 76, 77; start time on it is 127:00:55.

CMP 127:00:55, Crip. Got it.

CC-H Okay. Thank you.

CC-H Apollo, Houston. We're about to go AOS from the ATS we'll have you again in 12 minutes at Vanguard, that's 126:53 - 126:53.

CMP See you then.

PAO This is Apollo control. Loss of signal at ATS-6 satellite. We've got a gap in here of some 10 minutes between ATS-6 LOS and tracking ship Vanguard in which we will wedge 10 minutes of accumulated tape from the first part of this ATS-6 pass which we delayed because of an incoming video feed from Moscow, a news cast of some video fed down from the Salyut space station. Let's hear the 10 minutes of tape. We'll pick up live at Vanguard.

CC-H Apollo, Houston. We're now AOS through MILA.

ACDR Roger, Crip. Roger. We see we're zipping past the Florida -

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

ACDR Roger. We're seeing the coast of Florida go past pretty fast.

CC-H Rog. That - Should be passing over, actually the coast of Mexico there and Florida should be coming up in just a few minutes.

ACDR Okay. We thought it was out (garble).

CC-H You're - just came over end of the Gulf of Mexico. See Houston?

ACDR Yeah.

CC-H Very good.

ACDR See the whole Gulf Coast there from Brownsville to (garble).

ASTP (USA) MC440/2  
Time: 14:00 CDT, 126:40 GET  
7/20/75

CC-H Great. I haven't had a chance to look outside today.  
We got pretty weather?

ACDR Looks like a nice day from here. I see (Garble)

CC-H Fantastic. Hey, while we're sitting here and got a few minutes. You guys ask about the data a little bit earlier. Like to tell you that the EUV telescope is performing outstanding. It - right now it's approaching right on the state of technology. We couldn't ask for better out of it.

ACDR I think that sounds great, Crip, myself.

CC-H Yeah. And actually, that little - little deal we went through with the raster scan last night - we ended up doing the raster scan just a couple degrees off of what we had originally planned to and we lucked out, we picked up a couple of extra stars that allowed us to determine what the accuracy of the pointing was much more accurately than we would have been able to do without picking those up. So we're looking forward to really getting some great data out of that experiment.

ACDR We here to give it to you. Just let us know what to do.

CC-H Okeydoke.

ACDR Sometimes you luck out, huh?

CC-H Rog. Well, I don't know - -

ACDR Sometimes you luck out.

CMP Well, we really had that planned.

CC-H That's skill and cunning.

ACDR Okay. We're in the middle of your X-ray -

CC-H Copy. And we need, down on 230, also, the UP TELEMETRY switch to DIRECT, please.

DMP Okay. You got it.

CC-H Thank you, Deke. Okay. And we've got our command in now and you can go back on that switch to center, UP TELEMETRY.

DMP (Garble)

CC-H (Garble) well, I haven't got a chance to go flying through them anyhow.

DMP Too bad.

CMP Houston, Apollo.

CC-H Go ahead.

CMP Funny thing, Crip. Looking at thunderstorms down there, they don't look that much below us. We feel like we're really in a low orbit.

CC-H Yeah. You know Owen - I remember him making a similar comment. Especially like in night when they were coming over and there were a lot of lightning, and so forth, going at them, that it did not look - I guess the appearance is that you are right with them.



ASTP (USA) MC440/3  
Time: 14:00 CDT, 126:40 GET  
7/20/75

CMP                    Yeah. You can see the 3-dimensional quality of them very well; very big mushrooms.

CC-H                    Not to change the subject from thunderstorms but our troops down here have come up with a pretty - pretty good little idea. If it is getting kind of warm there in the command module. One of the suggestions is, that we could take that little duct hose that we use in the DM to mix air with the Soyuz and run it back into the command module. Maybe since the air in there is a little bit cooler it might - might make you a little bit more comfortable. At least move it around a little bit better. Should be able to just take a utility strap and be able to connect it in - for - on one of the (garble) there in the tunnel.

ACDR                    Sounds like a good idea.

CC-H                    Would you gents like me to try to throw a little news at you now?

ACDR                    Sure.

CC-H                    You know yesterday I told you about that new cocktail I guess - they're telling me that all - getting almost as much news as that was your piping "Hello Darling" by Conway Twitty into the Soyuz.

ACDR                    They kind of liked that country and western in (garble) huh?

CC-H                    Right. Right. One other happening today was President Ford will go to Helsinki, Finland, July 30 through August the first to take part in a 35-nation summit meeting of the European security conference. The President is expected to leave Washington by next Saturday on the Helsinki trip which is understood to be the forerunner of additional stops in Bonn, Warsaw, Bucharest, and Belgrade. Mrs. Ford is expected to accompany the President to the 10-day trip. We got a keyhole coming up here and I'm going to hold up for a moment. I'll come back at you a little bit later.

ACDR                    Roger, Crip.

CC-H                    Okay. We're out of the keyhole again. We talked a little bit about the country and western while ago. One little bit of sad news from the country and western fans was that country singer Lefty Frizzell died Saturday night from a massive stroke. I remember Lefty was the one that really got famous for like - "If You've Got the Money Honey, I've Got the Time."

ACDR                    Yeah. I remember real well. Sorry to hear about it.

CC-H                    Little bit of news from down south of here. The - San Salvador, Miss Finland, Anne - I think this name is pronounced something like - Pohtamo, was named Miss Universe 1975, over representatives from 70 other countries in the 24-annual pageant broadcast throughout the world from San Salvador.

END OF TAPE

ASTP (USA) MC441/1  
Time: 14:10 CDT, 126:50 GET  
Date: 7/20/75

CC-H - - bit of news from down south of here. The San Salvador, Miss Finland Anne I think her name is pronounced something like Pohtomo -- was named Miss Universe 1975 over representatives from 70 other countries in the 24th annual pageant broadcast throughout the world from San Salvador. Runners up included Miss Haiti, (Garble); Miss U.S. (Garble) Bartholomew of Merced, California; Miss (Garble) from (garble) Miss Philipeines, Rosemary (Garble).

ACDR Crip (Garble) echo.

CC-H Okay, understand. We got the echo. That's caused when we lock up on the ATS and we still got you here. We'll clean it up.

CC-H Okay. We sometimes get in a simultaneous uplink coming at you both through the FM and then through the ATS. I guess the double effect there is - is an echo. I think we got that cleared up now.'

ACDR Sounds great, now.

CC-H In fact you were coming back at me echoing too.

ACDR Roger.

CC-H One little item of news - that slipped your memory was 6 years ago today at 3:17:40 central daylight time, we landed on the Moon. At 9:56 when Neil said his famous words about - "small step for man, giant leap for mankind".

ACDR Roger. Remember it well.

CMP Say, what day of the week is this?

ACDR It happens to be Sunday.

CMP (Garble) day off.

CC-H Oh, yes, we'll get them off after you guys get back. Ya'll, ya'll are certainly not getting a day off today.

CMP (Garble) planning.

CC-H Continue with the news - -

ACDR I don't like days off.

CC-H Well, I don't know. From down here it - it would appear that we're working you pretty hard. But glad you're enjoying it anyhow. To continue on with the news a little bit, the President intends to veto Monday, a bill rolling back the price of U.S. oil to \$11.30 a barrel, spokesman announced today. Press Secretary Ron Nessen that the President believes strongly that this piece of legislation is unacceptable and would increase U.S. reliance on foreign imports by as much as 350,000 barrels a day. Optimism grew today that a nationwide postal strike can be avoided but postal service prepared plans for use - using troops if necessary to move the mail. Postal workers and officials for the postal service met separately today with Federal mediators counseling both sides prior to resuming joint sessions later in the day. Senate Democratic leaders won the first round today in their efforts to block any delaying tactics against the Bill to extend the voting

ASTP (USA) MC 441/2  
Time: 14:10 CDT, 126:50 GET  
Date: 7/20/75

rights act for ten years. As a result the Senate will vote Monday on a move to limit debate on the motion to consider the extension. The Voting Rights Act which under - under which hundreds of thousands of southern blacks have registered over the past decade expires August the 5th. Senate leaders said they will stay in session past the August 1st scheduled start of a month long recess if necessary to insure the action on the extension. After a delay for more than a year, Senate hearings were - are scheduled later this month for legislation to implement recommendations on how to prevent future Watergates. Only by acting on this Bill can we truly put Watergate said Senator Abraham Ribicoff, Chairman of the Senate Government Operations Committee.

ACDR Roger.

CC-H Okay. I'll go ahead and hold up on any further conversation here for your upcoming pass.

ACDR Okay. We'll maneuver to this x-ray UV attitude at 50 on the DET (Garble) as you said. We've got it loaded in for VERB 49.

CC-H Okeydoke.

ACDR Okay, Dick I just want to x-ray high-voltage power 2.

CC-H Okay, fine. Thank you.

ACDR Thank you for the news.

CC-H Well, wasn't really exciting. You guys still making most of it.

ACDR Well, we've got some great help from people like you and the rest of them that are sitting on the ground too.

CC-H Apollo, Houston. AOS Vanguard, 7 minutes.

ACDR Okay, Dick.

CC-H Okay. We'd like to relay to you. We would currently like delete the x-ray ops from this upcoming helium glowscan.

CC-H Apollo, Houston. Copy. We would like to delete x-ray ops from the upcoming helium glowscan at - it's a - it's turned on not at the first but over on the second page of the thing

ACDR All right.

CC-H Okay.

ACDR (Garble) Hey, Crip.

CC-H Go ahead.

ACDR Sun angle may be working on that boiler. Some big hunks of ice just came off as it came out in sunlight.

ACDR They're pretty good sized of pieces of ice.

CC-H Okay. You think those came off where the - the evaporator port is?

ACDR Yes. They came off from that side all right.

CC-H Okay.

CC-H Okay. We appreciate that information, Tom.

Speaking of ice, you reckon - we're a little bit concerned about that CRYO freezer. You know we had you undo it last night, and you have some problems. If Deke or somebody's got some time to go down there and

ASTP (USA) MC441/3

Time: 14:10 CDT, 126 50 GET

Date: 7/20/75

take that cap off for us and wipe off the inside of the plug with some tissues or something and put it back on, make us feel a lot more comfortable for tomorrow.

ACDR                   Okay. Okay. I'll do it in a little bit.

PAO                    This is Apollo Control. We've caught up on our tape. We're alive now over tracking ship Vanguard. For those news persons covering the mission here in Houston, there are three Soviet films which will be shown in the main auditorium beginning at 2:30 p.m. central. The first is called "Ready for Launch", the second "Cooperation in Space" - -

CC-H                   - - column, you were scheduled for block update, but it seems like a kind of busy time getting ready for that helium glow scan. We'll give you that some time later.

PAO                    - - and the third film is called "Soyuz 16 Post Mission Report". These three films will be shown in the main auditorium, beginning at 2:30 p.m. central time.

CMP                    Houston, Apollo.

CC-H                   Go ahead.

CMP                    Okay, Crip. We mistakenly got the x-ray on also on that one. I'm going to turn it off immediately. Wonder if you want the standard power down. I thought I'd check with you first.

CC-H                   Okay. You can ahead and do the x-ray power down as we've modified it, of course, leaving the low voltage power on.

CMP                    Roger.

CC-H                   Okay. We're 1 minute from LOS. Next station contact, we've got a short one at Goldstone in 15 minutes at 127:14.

END OF TAPE

ASTP (USA) MC442/1

Time: 14:20 CDT, 127:00 GET

7/20/75

CC-H Okay. We're 1 minute from LOS. Next station contact  
- we got a short one at Goldstone in 15 minutes, at 1:27:14.

CC-H Make sure that we get that door closed on the x-ray  
before we start our roll maneuver.

PAO This is Apollo Control. Loss of signal through  
tracking ship Vanguard. 13 minutes away, now, from a very brief pass  
at Goldstone tracking station in the Mojave Desert. At the time we  
have nominal acquisition through ATS, the spacecraft will be out of  
attitude for voice communications, because of a scheduled helium glow  
experiment at that time. In fact, that holds true for most of this  
upcoming pass. However, we'll come up live with the circuit, just in  
case, for some reason, they leave that attitude and begin communications  
again. According to the flight plan, that runs to 128:57, which is  
way beyond the duration of this upcoming pass. Tomorrow morning, at  
Soyuz deorbit, the Apollo will be some 430 miles trailing - 430 nautical  
miles behind Soyuz. However, by the time Soyuz thumps down in central  
Asia, Apollo will be out ahead of Soyuz. The flight dynamics people  
are calculating an estimated distance. At a ground elapsed time of  
126:30, which was about - oh, 32 minutes ago, Soyuz was 212 nautical  
miles ahead of Apollo and leaving Apollo behind at some 13 nautical  
miles per hour. Soyuz orbital parameters are now standing at 118  
nautical miles at perigee and 119.5 nautical miles at apogee. Back  
again in 10 minutes, for a Goldstone. This is Apollo Control at  
127:03.

END OF TAPE

ASTP (USA) MC443/1

Time: 14:35 CDT, 127:15 GET

7/20/75

PAO                    This is Apollo Control at 127:13 ground elapsed time. Acquisition for - about total pass of 2 and - 2 minutes - across Goldstone in the Mojave Desert. This upcoming ATS-6 satellite pass, the spacecraft will be out of attitude for the high gain antenna, because of the experiment timeline. However, we will leave the air-ground line up for the entire duration of the pass. We're standing by, now, for Goldstone.

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

ACDR                    Okay.

CC-H                    We are 1 minute from LOS. Next station contact will be Newfoundland, in about 7 1/2 minutes.

ACDR                    Hey, Crip.

CC-H                    Rog.

ACDR                    Hey, I just remembered to start (garble) out the flight plan - and our furnace pressure is reading 0. It's supposed to be greater than 4. Which means -

CC-H                    Copy. Reading 0 - supposed to be greater than 4. I'll try to have word on you - on it for you at Newfoundland. I'll hold up on it.

ACDR                    Roger.

END OF TAPE

ASTP (USA) MC444/1

Time: 14:45 CDT, 127:25 GET

1/20/75

CC-H Apollo, Houston. We're AOS through Goldstone.  
Should have you for about 7 minutes.  
ACDR (Garble.)  
CC-H I'm sorry. How about Newfoundland?  
ACDR That sounds better, you think?  
CC-H Yeah - well, I get lost easy.  
ACDR We'd just been looking at Wisconsin through our spotting  
scope, and across Lake Michigan, where the clouds are getting (garble).  
CC-H Ah hah! You knew where you were better than I did,  
then.

CC-H Any chance I could talk one of you gents that isn't  
too busy into - to digging out a pad for me? To improve our data a  
little bit on this upcoming rev 80 for EUV, we would really like to  
run the - one of the EUV contingency pads - the EUV contingency pad  
for rev 80 was - is buried down there in alpha 2. Any chance somebody  
could sneak under the couch there, and get it?

USA (Garble.)

DMP The - first, what I got you, Crip -

CC-H Okay. Regarding that furnace date, we have - this  
kind of sample we got in there is a little bit different from what  
we've been running. And we suspect that it's just now gassing. It's  
going to take a little while for that pressure to get down. So what  
we'd like you to do is, just to - wait awhile on it. And go back and  
check it a little bit later and see if the pressure's dropped.

DMP Okay. We'll do that. And as far as the freezer is  
concerned, I've had the cover off of that. There is a lot of frost  
in the plug. But the problem is, in the process of opening that thing  
with accumulated a lot of frost - the remaining samples they're in the bottom of  
the plug - and that's where a binding(?) has occurred. It's back in, and  
we're in good shape now. So I propose we don't take the lid out any  
more often than necessary.

CC-H Okay. Understand the frost was forming on the  
bottom of the plug, or down on the samples themselves?

DMP That's affirm.

CC-H But - I didn't understand whether -

DMP (Garble) plug. And any time you take it out, of  
course, it'll get enough humidity in there to load it up in a hurry.

CC-H I - I didn't - I wasn't quite with you, Deke. It's  
on - the frost is on the bottom of the plug - Is that correct?

DMP Heard your plan. And be with you in a second.

CMP Hey, Crip. Almost got lost under the couches,  
finding it. But here it is. I'm ready to copy, if you'll give us  
the page.

CC-H Okay. What we want you to do is to dig out the -  
under the EUV contingency pads - rev 80, which is page 4-4. And all  
you've got to do is just pull that one out, and we'll use it to replace

ASTP (USA) MC444/2  
Time : 14:45 CDT, 127:25 GET  
7/20/75

the rev 80 pad that we've got in your flight plan supplement.

USA Okay.

CC-H Since you went to all the problem of digging that book out, you might put it in some easy - more accessible place than A-2.

CMP Sounds like you plan to use it some more, maybe.

CC-H Well - I don't. But, the people in the back room might.

CC-H Okay. We're 1 minute from LOS. Next station contact in 3 minutes, through Madrid. That's at 127:33.

CMP Copy.

CMP Okay, Crip. Here I have page 4-4, EUV pad, rev 80. Contingency and replace the one in the book - or, in our supplement flight plan. I understand.

CC-H Okay, Vance. That's - that's fine. Thank you.

END OF TAPE



ASTP (USA) MC445/1  
Time: 14:55 CDT, 127:35 GET  
7/20/75

CC-H Apollo, Houston. We are AOS Madrid. We have you  
for 6 minutes.  
ACDR Roger. Understand. There's no ATS voice until  
128:57.  
CC-H That's affirm. In fact we've even released the sat-  
ellite such that you couldn't tune it in if you wanted to.  
ACDR Oh, really.  
CC-H We figured we wouldn't - wouldn't going to need it so  
we might as well let them - let them relax.  
ACDR Okay.  
ACDR Will we have it on and off for the rest of the mission?  
CC-H Oh, yeah. It's just for this one rev that we re-  
leased it.  
ACDR Oh, okay.  
CC-H No, couldn't give up all this good voice and data.  
ACDR Right.  
CMP Old satellite has other duties too, I understand.  
It divides its attention with us.  
CC-H Apollo, Houston. Is the DP available to let me bend  
his ear for a moment?  
DMP Yeah. Go ahead, Crip.  
CC-H Yeah, Deke. The - a little bit later at around a  
little after 129 hours, we've got a TV camera set-up called out for you.  
And you probably heard us discussing the last couple of days about a  
camera that's - we're - we're describing as bad; it's at least not good. And  
that currently is the one we've got installed in 871. What we'd like to  
do is to take the one we've got in 873 and put it in that 871 location  
for that upcoming TV. And, I'm kind of recommending that what you might  
do is take a piece of tape or in some way label that one that you pull  
out of 871 as - as bad or something and you can either put it in 873 or  
you can put it someplace and tuck it out of the road. I believe we'll  
probably try not to use that one for the remainder of the mission. Also,  
when you - when you swap it, we want to leave the cables connected as they  
are - the cables in the U-mount so you don't need to pull those out.  
DMP Okay. Really you just want to swap around from 871  
to 873 and vice versus. Is that correct?  
CC-H That'll be fine; however, we're going to be using  
873 again a little bit later and we'll be asking you to put one back in it,  
so it would just require another swap. You can do whatever you would  
like with that one you pull out of 871 - the best place you think to stow  
it. If 873's a good place, do that.  
DMP Okay.  
CC-H And Deke, when you go back there you might get another  
reading on the furnace and let us know how it's coming.  
DMP Okay. We'll do that.  
CC-H At there, or up there, whatever way you consider that  
direction to be.  
DMP Any way you want, we'll call it.

ASTP (USA) MC445/2

Time: 14:55 CDT, 127:35 GET

7/20/75

ACDR Say, Crip, I just now checked it. Thermal cell (?) reads zero with that pressure (garble).

CC-H Okay. And, of course, Deke you can't verify for us that the vent and isolation valves are opened, because I can -

CMF Yep. I've done all that. I checked the caps and I even got the old shroud cover closed for a change during exercises.

CC-H Okay. We copy all that. And we're trying to make up our mind here what we want to do about it. We'll get back to you.

DMP Okay.

CC-H Okay. We are 1 minute from LOS. Our next station contact will be through Orroral in about 40 minutes. That's at 128:18 - 128:18.

CMF Incidentally. I just had an opportunity to use the new binder proposed for Shuttle, I think. In the supplementary flight plan we'll have a couple of comments on that a little later.

CC-H Okay. We would appreciate it.

CC-H Apollo, Houston. You got a GO to continue furnace operations.

ACDR Okay. We're going (garble).

MCC-H (Garble) Houston contact man 1.

SPKR Loud and clear. How me?

MCC-H You're loud and clear.

SPKR Okay. What do you say we get one of the sights up there and have you a voice check with them.

MCC-H All right.

SPKR Let me see, who's coming up here.

MCC-H Orroral's the next site, but I'm not interface with him yet.

SPKR All right.

PAO This is Apollo Control at 147:40 ground elapsed time. We've have had loss of signal through the Madrid station. Our next station is Orroral Valley in 37 minutes. ATIS-6 satellite has been released from supporting this particular revolution in as much as the spacecraft would be out of attitude anyway, for the highgain antenna aboard Apollo. We'll return at that time at Orroral Valley, Australia tracking station in 36 minutes. This is Apollo Control at 127:21.

END OF TAPE

ASTP (USA) MC446/1  
Time: 15:37 CDT, 128:17 GET  
7/20/75

PAO This is Apollo Control. 128:17 ground elapsed time. Acquisition through Orroral Valley in 50 seconds. An extremely brief pass of about a minute and 11 seconds. We're standing by for Orroral Valley and shortly thereafter the final pass this afternoon over tracking ship Vanguard.

PAO This is Apollo Control. Loss of signal through tracking ship - as you were - through Orroral Valley tracking station. Tracking ship Vanguard up in 4 minutes and 1/2. We'll stay up live across this gap here as Apollo crosses the north island of the New Zealand group on its 77th revolution. Apollo currently is in an orbit measuring 120 miles at perigee - nautical miles, by 122 miles at apogee. Period of orbit: 1 hour, 28 minutes, 50 seconds. Orbital velocity: 25,491.1 feet per second. 3 minutes now away from reacquisition through Vanguard, also a fairly low pass - 6 degrees above that ship's horizon. And 5 minutes - 5 minutes and 44 seconds of acquisition time. Apollo currently weighing in at 30,417 pounds, still with the docking module attached.

CC-H Apollo, Houston. We are AOS through Vanguard for 5 minutes.

ACDR Roger, Crip. We're progressing right on schedule.

CC-H Very good.

CC-H A little information for future planning: we're going to end up modifying what we've got planned for this next X-ray pad, and I'll be giving you that when I see you at Goldstone just after you finish this helium glow.

ACDR Jet OFF.

ACDR Hello, Houston. How do you read?

CC-H Reading you kind of weak but clear. Go ahead.

ACDR Okay, to copy this data down at Goldstone - is that the one that Vance got out of 8-2 on 4-4?

CC-H Negative, negative. What we're going to do is - we're just going to do another back-up purge on the X-ray unit - is that - where we've got time scheduled for that pass and we're not going to do any - any pass. I'll be talking about - about that a little bit more at Goldstone. We're going to save that one he pulled out - 80 and do it at 80.

ACDR Okay.

END OF TAPE

ASTP (USA) MC447/1  
Time: 15:47 CDT, 128:27 GET  
7/20/75

CC-H - - for that pass, and we're not going to do any -  
any pass. I'll be talking about - about that a little bit more at Gold-  
stone. We're going to save that one he pulled out: 80 and it at 80.

ACDR Okay.

CC-H For your information; for Deke, I guess; the - on  
that furnace we're looking at data now and the temperature looks good  
and we think everything's squared away, and it was just that particular  
sample that was the reason we couldn't get the pressure down.

DMP Okay. Well, I was reading 1.3 when I put it in, but  
it's back down to zero again now.

CC-H Copy.

DMP Incidentally, Crip, I started that thing on 127:50.

CC-H 127:50. Thank you, Deke. Appreciate that.

Kind of helps us know what's going on down here when we get those little  
updates.

DMP Okay.

CC-H Okay, guys. We're 1 minute from LOS and our next  
station contact will be through Goldstone at 14 minutes from now, and that's  
about 128:26 - I'm sorry, about 128:44.

ACDR Okay.

PAO This is Apollo Control. Loss of signal through  
tracking ship Vanguard. Final Vanguard pass this afternoon. 13 minutes  
away from reacquisition through the tracking station at Goldstone, Cali-  
fornia. Vanguard tomorrow will start steaming westward from it's cur-  
rent position in the South Pacific in route to Sidney, Australia for  
support of the coming Viking launch. We'll return in 12 minutes at  
Goldstone. This is Apollo Control at 128:31.

END OF TAPE

ASTP (USA) MC448/1  
Time: 16:05 CDT, 128:43 GET  
7/20/75

PAO This is Apollo control at 128:43. Acquisition through Goldstone in 40 seconds. Goldstone and Newfoundland through which the S-band OMNI antennas can receive the uplink from Mission Control. And this rev, we'll have the satellite back. Standing by for Bob Crippen's call.

CC-H Apollo, Houston. We're AOS through Goldstone for 6 minutes.

ACDR Okay. Roger. We're coming up - just about to finish the helium glow scan.

CC-H Okay. When you finish that up give me a holler, Tom, and I'll give you a VERB 49 maneuver for where we want you to go next.

CC-H Apollo, Houston. We see that you're back in P00 now and if you could give us ACCEPT we'll go ahead and load you a state vector and when you're ready to copy I can give you the roll, pitch, and yaw for a VERB 49.

ACDR Ready to copy. Go ahead.

CC-H Okay. For a roll of 110 - I say again, roll is 110, pitch of 129, yaw of 000. When we finish your uplink here you're - got a GO to go ahead and perform that maneuver.

ACDR Roger. Roll, 110; pitch, 129; yaw, 000; on the VERB 49.

CC-H Okay. That's fine.

CC-H And the ATS angles that we got down below are still going to be good for picking that up.

ACDR Okay.

CC-H And if you're still copying, I'd like to tell you what we want to do over here on this X-ray pass at 129:07.

CMP Go ahead.

CC-H Okay. What we'd like to do is to perform an X-ray backup purge, similar to what we did while ago. It's on the Experiments Checklist, page 1-23. And where it calls for it for 5 minutes with the purge to GO, we want to do - do it for 15 minutes instead of 5 - before you turn it off.

CMP Okay. After we get the attitude I - I suppose I'm your key will do an X-ray backup purge at page 1-23, Experiments Checklist, do a 15 minute purge instead of 5 minutes.

CC-H That's affirm. We want to do it at - do it at 129:08 which will be sunset. And at the conclusion of that purge, instead of turning your high voltage power ON as called for, we want you just go ahead and close the door - close the cover on the X-ray experiment.

CMP Okay. Understand. The backup purge will be performed at 129:08 and at the completion of the backup purge we do nothing more than close the cover on the X-ray.

ASTP (USA) MC448/2

Time: 16:05 CDT, 128:43 GET

7/20/75

CC-H                    That affirm. The current checklist does call for you to go ahead and turn high voltage power ON but we don't want to do that in this particular case. Okay. The - we've completed our load and the DSKY belongs to you guys again so you can go ahead and do that maneuver at your leisure.

CMP                    Okay. Starting the maneuver, Crip.

CC-H                    Okay. That - that's fine. Vance, one item I need to clarify. awhile ago when I told you about flipping in that rev 80 pad, I might have fouled you up a little bit in that the rev 79 pad was on the opposite side of that and we are still going to need that one in case you did pull it out of the book or anything.

CMP                    Okay. Understand.

CC-H                    We're about 30 seconds from LOS and we'll have you again at Newfoundland in 6 minutes.

CMP                    Okay.

CC-H                    Okay. We copy that you did not do a rewind on the DSE and we need that.

END OF TAPE

ASTP (USA) MC449/1  
Time: 16:15 CDT, 128:53 GET  
7/20/75

CC-H Apollo, Houston. We're AOS through Newfoundland.  
Should be with you for about - oh, 52 minutes with the ATS.

ACDR Okay, Crip. We'll be ready at the time that  
you suggested.

CC-H Okay, fine. One other item I might suggest in  
trying to look ahead, here, and seeing where you are in the flight plan,  
since the activities you have on this x-ray purge aren't going to be  
too busy. We've got called out for some leg volume measurements over  
at about 131:30. And I guess Deke and Tom might think about trying  
to get - get those out a little bit early, here, in some of this time,  
if it looks like it might be a little bit easier to do and spread it  
out a little bit.

ACDR (Garble)

DMP Seems that's a really good idea - avoid these real  
jammed periods.

CC-H Yeah. If we can spread out some of these activities  
and make it a little bit easier - that's the way to go.

CC-H One other item I'd like to get in sometime, if -  
if it's convenient for somebody to get out the updates book - I can  
go ahead and give you a rev 108 block data.

CMP Stand by. We'll get the book.

CC-H I'm also going to need, on panel 230, the UP  
TELEMETRY switch to RELAY, and you might as well stand by, there, when  
you get it.

CMP Okay. Go ahead.

DMP (Garble) We're ready to copy.

CC-H Okay. We're switching over here on the ATS. I  
want to make sure you read me okay.

CMP All right.

CC-H Understand you copy me good, Vance. You're cutting  
out a little bit.

CMP I'm hearing you fine.

CC-H Okay, fine. Here I come at you - rev 108, NOUN 33,  
176:57:24; minus 1941, plus all balls, plus 0183; all balls, 329,  
359; 1769, 0007; 197; 15687, 25756; 2552, 2709; down range errors NA;  
056, 314; 3248, 3536. Before I continue on I need to verify on 230, and  
get the UP TELEMETRY switch to RELAY, please.

CC-H Okay. Continuing on my read. Starting with latitude,  
it's plus 2200; longitude, a minus 16300. Standing by for your readback.

CMP You cut out on the latitude.

CC-H Okay. Latitude is plus 2200. Longitude is  
minus 16300.

ASTP (USA) MC449/2  
Time : 16:15 CDT, 128:53 GET  
7/20/75

CMP                   Okay. Readback block data: rev 108, 176:57:24;  
minus 1941, plus all balls, plus 0183; 000, 329, 359; 1769,  
0007; 197; 15687, 25756; 2552, 270 - 2709; NA; 056, 3148, 3536, plus  
2200, minus 16300.

CC-H                   Okay. That's a good readback. And I've got 4  
remarks for you. Number one is for command module FM SEP. Yaw  
left at 314 degrees, copy 314.

CMP                   Copy 314 left for seven.

CC-H                   Roger. Number 2: NOUN 48, your pitch trim is minus  
.23, yaw trim is minus .85. Your CSM weight is 25853, your docking  
module weight is 4500. Over.

CMP                   Rog. Pitch trim minus 2.23, yaw trim  
minus 185, weight CSM 25853, the DM 4500.

CC-H                   That's a good readback, Vance. Thanks a lot.

CMP                   Okay.

END OF TAPE



ASTP (USA) MC450/1

Time: 16:25 CDT, 129:03 GET

Date: 7/20/75

CMP - - 4500.

CC-H That's a good readback, Vance. Thanks alot.

CMP Check.

CC-H And, Vance on that - we keep chasing around after this X-ray instrument. To let you know we've got some good data back from it so its not being completely lost. We're still trying to correct the problem. That's why we're doing the long purge of course. We think it to be correlatable with temperature of the instrument and that when it's real cold, if we're not - not getting the data, we're still trying to understand that. Also a little bit of information for you. The helium glow is working real well so on the EUV and the helium glow we're getting excellent data.

CMP Okay. That's really great. Hope we can get the x-ray fixed up.

CC-H Okay. We're going to keep after it.

CMP And, we'll be doing that backup purge in a little less than 4 minutes.

CC-H Okay. Copy. Also, Vance, if you've still got the flight plan out working with it, following this purge there is - following this x-ray purge an x-ray pass there was a callout under the DP column to activate the primary evaporator. We would like to still leave that deactivated and be interested in hearing how the temperature situation's going now. How do you feel?

CMP Roger. On - leave it deactivated. We don't need it too badly right now. Strangely enough, temperature's going very well. Been getting apparently better ever since we undocked.

CC-H Yes, that - that's amazing and that's good to hear. Did I understand you earlier to say that you'd been running the cabin fan some or was that - is that correct?

CMP That's right. From time to time when it got uncomfortably warm, we would run it particularly because circulation tends to make it feel better.

CC-H Rog. Did you gents ever rig up that hose coming from the DM into the CM or if you do, we'd like to know when you do it.

CMP Okay, we haven't done it yet because right now it's fairly comfortable, and periodically we turn on the fan if we need it. But, we - we're kind of holding that in our pocket in case - especially for tonight.

CC-H Okay, you might do that right now, we are considering since it could slow down your metabolic rate that the thing shouldn't be heating up and we're considering leaving the evaporator deactivated.

CMP Okay, very good.

CC-H Apollo, Houston while we're sitting here and we're looking at the purge - or - or the exercise that the AC's got coming up here we're suggest to try to get as close to the end of the DM as we can. That - we used the longest comm umbilical which should be the one for the right hand couch, normally Deke's.