

ASTP (USA) MISSION MC323/1  
Time: 23:33 CDT, 88:13 GET  
Date: 7/18/75

PAO 88 hours, 13 minutes ground elapsed time. This is Apollo Control. Spacecraft presently in the South Atlantic Ocean. The crew - American, and Soviet crew still asleep. I have an indication here that the Vanguard tracking ship will depart the nominal ASTP tracking position at 25 degrees south, 155 degrees west, prior to mission termination. Vanguard is being required to support the Viking launch. The last pass supported from nominal location for the Vanguard, will be revolution 92 on July the 21st, that's Monday. The Vanguard will continue to support the remainder of ASTP while on route to Sidney, Australia. And the tracking locations of the ship will be updated hourly. Our next status report will be 30 minutes from now at 88:14 ground elapsed time. This is Apollo Control.

END OF TAPE

ASTP (USA) MC324/1  
Time: 23:58 CDT, 88:38 GET  
7/18/75

PAO 88 hours, 38 minutes ground elapsed time. This is Apollo Control. Both spacecraft presently over Micronesia on revolution 53. Data acquisition through the applications technology satellite. And amplification and correction on a commentary we made earlier. The Soviet camera TK4 is mounted outside the Soyuz, not inside as previously mentioned. And apparently the reason for the deletion of TV 14.2 and 15 from tomorrow's flight plan, is a result of the problems the Soviets have had with their television junction box. The Soviet crew went inside that junction box and made some changes that enable TK1 and TK3 to be operable, however, they did not have flight planning time available to do the same thing for TK2 and TK4. As a result of that and as a result of the exceedingly tight timeline for tomorrow, the Soviet crew is unable to make the same change inside the junction box for TK2 and TK4 and it is that reason which TK4 cannot be used. TK4 once again being the outside camera that would have provided television of the Apollo from the Soyuz during the second docking and final undocking scheduled for tomorrow. Flight director, Don Puddy, now conversing with the flight director on shift over in Moscow and Puddy made the remark that he didn't think we could have a better mission and expressed hope that the powers that be would enable another joint mission sometime in the future. Soviet flight director responding that he too didn't think the mission could be any better and had high hopes for future joint projects with the United States. The Mission Control Center in Moscow reporting a perfectly nominally operating Soyuz with no need for any joint planning activity changes with MCC Houston. So apparently this will be a very quiet evening on both sides of the Earth. And a 140 miles about the Earth it is very quiet, all five crewmen still asleep. Our next status report will be at 89:40 ground elapsed time. At 88:41 GET, this is Apollo Control.

END OF TAPE

ASTP (USA) MISSION MC325/1  
Time: 01:01 CDT, 89:41 GET  
Date: 7/19/75

PAO                    89 hours, 41 minutes ground elapsed time. This is Apollo Control. Spacecraft presently in the south Atlantic Ocean, midway between Tierra del Fuego, and Capetown South Africa. Both crews still a sleep scheduled for awake time at 3:20 a.m. Houston time. Tomorrow will be a very active day for the Apollo spacecraft. Not only will it undock, redock, and undock, but there are four other maneuvers associated with two experiments which the Apollo will be performing. Immediately following the initial undocking, the Apollo is scheduled to maneuver directly away from the Soyuz in a line of sight between the Soyuz and the Sun. This is ASTP experiment MA-148, Solar Eclipse Experiment. And the experiment is designed to explore the feasibility of performing corona observations by combining the advantages of a space environment, with simple instrumentation. The plan is to use the Apollo spacecraft as the occulting disk. And at a separation of approximately 200 meters, the apparent diameter of the Apollo will be approximately 2 solar diameters, as seen from the Soyuz. Onboard the Soyuz automatic sequential photography will be performed during the spacecraft separation. And at the same time on the ground in the Soviet Union - photography will also be taken of the Sun using heliograms, and coronograms, and those two sets of photography will be correlated following the return of the Soyuz. And Soviet solar scientists expect to get additional data on the Sun's corona from that. This is much like the occulting disk experiments aboard Skylab where you had an optical occulting device instead of an actual spacecraft. The other 3 maneuvers associated with tomorrow's experiments are - involve the Apollo moving out of plane from the Soyuz. The first one of these is scheduled to be performed at 99:38 ground elapsed time, and the Soyuz - or excuse me, the Apollo will be moving 150 meters out of plane from the Soyuz. That's out of the orbital plane. The next maneuver will occur at approximately 10:18 ground elapsed time. And the Apollo will move 500 meters out of plane. And the final UVA maneuver will take the Apollo 1000 meters in plane. And that will occur at 102:38 ground elapsed time. The ultraviolet Absorption experiment is a result of several inconsistencies in ground base data. At present the amount of atomic oxygen - that's O as opposed to O<sub>2</sub> - and nitrogen in the Earth's upper atmosphere are not very accurately known by Earth base scientist. The oxygen is unknown by a factor of 5 to 10 and the nitrogen abundance has never been precisely measured at all. Mass spectroscopy from the Earth has been used to measure such abundances, but these techniques leave inherent ambiguities in the data. Some experimenters have felt that it may be possible to calibrate out these sources. That issue has not been settled. And as a result of these ambiguities, the ASTP mission has provided a unique opportunity to apply optical absorption spectroscopy to the investigation of those two abundances in the upper atmosphere, nitrogen and oxygen. The technique will involve the Apollo sending monochromatic light beams - these are laser-like light beams whose wave lengths correspond to the resonance frequencies of atomic oxygen and nitrogen. And when the light hits the Soyuz it

ASTP (USA) MISSION MC325/2  
Time: 01:01 CDT, 89:41 GET  
Date: 7/19/75

will be retroreflected into a spectrometer on the command and service module. The absorption from source lamps over the known path and then - or rather - with the combination of data from builtin calibration lamps and the amount of light reflected back from the Soyuz. With those two sets of data, the scientist will be able to subtract the differences and what will be left will be measurements which correlate precisely to the amount of oxygen and nitrogen in the upper atmosphere this being about 140 miles above the Earth. And the results of this experiment may clear up a lot of the questions concerning the Ozone layer above the Earth's atmosphere. Several teams of scientists are scheduled to be involved in a scientific press briefing tomorrow in the auditorium at 3:00 p.m. And this is certainly one of the important experiments to be performed during this mission. The principal investigator for the ultraviolet absorption experiment is in Houston, and will be involved in tomorrow's press conference. Our next status report will be at 90 hours and 42 minutes ground elapsed time. At 89:47, this is Apollo Control.

END OF TAPE

ASTP (USA) MC326/1  
Time: 02:04 CDT, 90:44 GET  
7/18/75

PAO 90 hours, 44 minutes ground elapsed time. This is Apollo Control. The Apollo/Soyuz spacecraft presently west of Baha, California on revolution 53. Crew members still asleep for an hour and 20 more minutes. This mornings wakeup music by a Soviet singer whose name we haven't translated yet. The song is entitled "Tenderness." Here in Mission Control everything is very quiet. No problems this evening, no anomalies from the day keeping anybody busy. Cabin pressure inside the command and docking modules presently quite stable as it has been for about the last four hours at 255 millimeters mercury, 4.92 pounds per square inch. And the temperature aboard Apollo about 68 degrees, fairly comfortable for sleep. Our next status report will be an hour from now. That'll be at 91:44 ground elapsed time. At 90:45, this is Apollo Control.

END OF TAPE

ASTP (USA) MC327/1  
Time: 02:58 CDT, 91:38 GET  
7/19/75

PAO 91 hours, 38 minutes ground elapsed time. This is Apollo control. Crew presently 20 minutes away from wake up. This morning's wake up music will be by Moscow lady artist Ms. Kolinski - excuse me, Kristolinski. And it's entitled "Tenderness." We have the flight surgeon's report. Jerry Hordinsky reporting no health problems being tracked presently among any of the Apollo crew members. Also indicated that the lithium hydroxide canisters in use during the time that the odor was noted in the docking module will be returned for post flight analysis in an attempt to track down exactly what those odors were. Methyl ethyl ketone, if it turns out that was the odor, will be preserved in the canisters. We're expecting television from the Soviet Mission Control Center in about a minute and we'll be sending them Mission Control Center Houston scenes at that time. Spacecraft presently on revolution 54 between Saudi Arabia and India on an ascending revolution. Our next status report will be just a couple of minutes before crew awake time at 3:20 a.m. Houston. At 91 hours 39 minutes ground elapsed time, this is Apollo control.

END OF TAPE

ASTP (USA) MC328/1  
Time: 03:11 CDT, 91:51 GET  
7/19/75

PAO 91 hours, 51 minutes ground elapsed time. We expect wake up call very shortly. The music will be "Tenderness," my a Soviet lady singer, whose first name we don't know, whose last name is Kristolinskic. We'll keep the lines open for that music and Cap Comm, Bob Crippin's wake up call.

MCC-M (This is Moscow. How do you read me?)

SCDR (Moscow, this is Soyuz. I read you well.)

CC-M (I read you well also. Are you ready to do TVL2?)

SCDR (With commentary?)

MCC-M (That's correct. Did you do all the preparations for this broadcast?)

SCDR (Yes we have, all of them.)

MCC-M (Okay, but this time I want to give the floor to your backup crew.)

MCC-M (This is for the eighth, I heard you. Soyuz, how do you read me? (Garble).

SCDR (Anatoli, thank you, I read you very well.

Baykonur(?) here to the mission control center. We slept very well and I know that you slept very well.)

MCC-M (We hear your voice very well. We were at the Cosmodrome and now we have the opportunity to come here to the center. How's everything going?)

SCDR (Everything is going beautifully. As they say in English, everything is going on schedule. Everything is going smoothly.)

SCDR (I think that it will continue the same way also.)

MCC-M (I have the privilege of conveying regards from your wives. They are worried, excited, watching your flights very intently. They are waiting for you to land.)

SCDR (Convey to them that they don't have to worry. Everything is going well, all the systems are functioning perfectly. We feel beautifully. If we didn't have any limitation, we would stay up here even longer. We feel very well, especially today. On previous evenings nights we had to sleep. How about in Apollo? Are they awake yet?)

MCC-M (They are, they should be getting up also.)

SCDR (How about the people on the ground? Are they up, ready?)

MCC-M (Yes, they're up.)

SCDR (Okay. Convey same regards to them.)

MCC-M (How was yesterday?)

SCDR (Yesterday was a very busy day for us. We had to work hard. We had all the transfers and obviously we're a little tired.)

MCC-M (Here on the ground, we followed everything and we-we're in the conclusion that everything went beautifully and that everything will continue just as smoothly.)

CC-H Apollo, Houston. Good morning, talking at you through the ATS (garble). We'll be in (garble) in about 13 minutes.

SCDR (We're ready for the undocking and the docking and for the solar eclipse, the UVA.)

CC-M (Sure. You'll have a very long day even today. You'll have to work hard. Now I want to give Nikolay microphone. He

ASTP (USA) MC328/2  
Time: 03:11 CDT, 91:51 GET  
7/19/75

want to say a few words to you also.)

SCDR (How is the picture? Is it normal, is it good?)

SCDR (Moscow, this is Soyuz. How is the picture? Is it good?)

MCC-M (Soyuz, I'm Rukanishnikov. Yes, you have a very beautiful picture. I see even the cap on your CCU. That-that one.)

SCDR (Oh, oh that cap that is flying around. Okay.)

MCC-M (Well, I won't take too much time. I want to convey my regards to you, wish you the best. At the present time I want to give the microphone to Shauni(?) because we don't have that much time. We only have 7 minutes till LOS. We're waiting for you impatiently. Best of luck.)

MCC-M (Soyuz, this is Moscow. How do you read me?)

SCDR (Read you well.)

MCC-M (I have three radiograms for you. Two with pads, give 2 and 14. Okay. One without pads and one - two with pads. Okay. Let's start with the one without the form or without the pad. Take the joint onboard instructions. Is it far? Is it nearby?)

SCDR (Okay. I have it.)

MCC-M (Page 42, step 35. Correction page 42, take a pencil. I think it's 52. P52-53. Look at the block at - -)

SCDR (Which block?)

MCC-M (At the top of the page. A 100 hours and 5.)

SCDR (Okay.)

MCC-M (Block it out completely, we don't need it. Did you do it? Okay, now here's the radiogram, using the pad.)

SCDR (Okay.)

CC-M (The radiogram without the pad you've already completed. Pad 2.)

SCDR (Get too much. Okay.)

MCC-M (Longitude, 206. Period of rotation, 88.87. Orbit 8 - )

SCDR (Time again. Over)

CC-M (88, 87. Valeriy hurry up. Orbit 62 and 4. Time of burn 11:33, 11:33 52. Give me a confirmation.)

SCDR (The time of burn, okay. I'm repeating 59. Longitude, 206. Period 88.87. Orbit 062.4. Time of burn, 11:33:52. Are you confirming this?)

CC-M (Are you ready for pad 14? Number 58.)

END OF TAPE



ASTP (USA) MC329/1  
03:21 CDT, 92:01 GET  
7/19/75

MCC-M - - Number 58. I'm only giving you corrections the time of the burn. The initiation of the burn. 12:25, 61st orbit, 12:25:53, 64th, 13:47:16. Come on guys. Hurry it up. 65th, 15:19:24. 67th, 16:51:56. 18:19. Repeat please, again. 56. 67th 18:19:12. 68, 9 19:45:54. 70th, 21:18:54. 70th, 22:35:28. 71st, 00:07:37. 72nd, 01:39:38, 73rd, 03:13:01. 75, 04:45:30. 76, 06:20:31. 76, 07:29:19. 77, 09:02:57. 78th, 10:35:20. I'm giving the correction for 76. 07:29:19, 12, rather, 12. How did you read me? We have 30 seconds left.

MCC-M Okay. We received everything now. Everything is under control. Okay. We received everything. We don't have to give you a confirmation. I have one other thing for you, though. Get pad 20 for the next comm session. We have never given it to you. Okay. forget about pad 3. We don't need pad 3. What we need the 20th for? Because we are asking you. Get it ready.

PAO Loss of signal for the Soviet Soyuz through their Petropavlovsk-Kamchatsky tracking station. LOS earlier for the Apollo from the ATS satellite. Acquisition again in 4 minutes through Hawaii. Deviation from the Soviet TV scenero. We were expecting video of the Soviet families from one on the studios near Moscow, and that did not occur as scheduled. However, we did receive Soyuz television from onboard of Alexey Leonov and Valeriy Kubasov and their Control Center in Moscow. We'll keep the line open for this short bridge acquisition through the Hawaii tracking site about 3 minutes away. At 92:06, this is Apollo Control.

CC-H Apollo, Houston. AOS Hawaii. We have you for about 6 minutes.

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

CMP Morning, Crip. How are you today?

CC-H Doing great down here. How about you guys?

CMP Okay. Everybody got a good sleep here.

CC-H That's good to hear. We've been down here wide awake.

At least that's what I'm telling myself.

CMP Yeah. It's kind of early down there, isn't it?

CC-H Oh yeah, a little bit. One item I need to get up to you at this Hawaii pass. We've got scheduled under Deke a helium injection at about 92:40 hours, and we need to delete that due to getting started a little bit late - getting the furnace sample started a little bit late,. And we're going to pick it out a little bit later about - and we'll give you a realtime call when we want it - want the helium injection done.

CMP Okay. I'll pass that on to Deke.

CC-H Would appreciate it.

CC-H Also, Vance, want to let you know that we did get your UVA EMP loaded in and might remind you to look in your GNC checklist on page 1-36 and review the notes - the restrictions on that particular page regarding EMP.

CMP Okay. - -

END OF TAPE

ASTP (USA) MC330/1

Time: 03:31 CDT; 92:11 GET

7/19/75

CC-H - -and on page 1-36, review the note for restrictions on that particular page regarding EMP.

CMP Okay, got that. I'll give it a look.

CC-H Okay, fine. Incidentally we got a little bit concerned last night. We saw the C&W and noticed that the - the O2 flow high and the pressure being down a little bit and we tried to get to you about it and couldn't get up for some reason or didn't get a response but we - looked like it was taken care of. Could you update us on that a little bit.

CMP Stand by. Just a second, we're switching around headsets.

CC-H Okay, fine.

CC-H Apollo, Houston. We are one minute from LOS. Our next station contact will be when we see you at the ATS. That's at 92:40.

ACDR Okay, Crip.

CC-H And we'll try to pick up the morning report from you when we get down there.

ACDR Okay and we'll (garble).

PAO Loss of signal through the tracking station at Hawaii. Next acquisition will be 24 minutes away. And that will be through the Applications Technology Satellite ATS6. At 92:16 ground elapsed time, with both crews awake, this is Apollo Control.

PAO 92 hours 39 minutes ground elapsed time, this is Apollo Control. Both spacecraft presently 140 miles directly above Tierra del Fuego, South America. Pressure in the Apollo very nominal, about 5 PSI or about 260 millimeters in mercury. Temperature still quite comfortable. About 69 degrees. Coverage through the Applications Technology Satellite now about 30 minutes away. We'll await the call from cap com Bob Crippen for this.

CC-H Apollo, Houston. AOS through the ATS for about 4 - 50 minutes.

ACDR Roger, Bob. Good morning.

CC-H Good morning.

ACDR Well, we're just completing the fuel cell purge.

CC-H Very good.

CC-H Tom, I had asked Vance and didn't know if you got it, where - last night we saw you guys got a C&W, apparently a high O2 flow and we saw the cabin pressure had come down a little bit then come back up and we tried to give you a call on it because we were so much concerned but we couldn't get to you. Can you enlighten us about that please.

ACDR I think everybody slept like a rock after that long day yesterday. I didn't - I didn't even hear it.

ACDR No, nobody heard it.

ACDR Right now the cabin pressure looks like it was 4.9 solid.

CC-H Yeah, it's been - it's in good shape right now, I guess that we, from my data here, it looks like somebody had put in some O2 from

ASTP (USA) MC330/2  
Time: 03:31 CDT; 92:11 GET  
7/19/75

the - from the DM but you say no action was taken there.

ACDR Roger, we did a real healthy purge last night in the DM, before we went to sleep.

CC-H Okay, did y'all per chance, what were you doing associated with that after Dick quite talking to you last night?

ACDR Oh yeah, yeah, we did quite a bit after Dick quite talking. We really get the purge up.

CC-H Okay, maybe what we're talking about was associated with you guys still doing some of that purge action then.

ACDR Hey Dick. Or is this Crip?

CC-H Yes, this is Crip here.

ACDR Oh, yes, Crip. Hey I went back there and purged again, in fact I purged up until I went to sleep to make sure we had enough there. Now Dick about as - as close as I could get was 240 partial when we quit and I checked it this morning, first thing, when I woke up and I'm reading 210 in there now. But still well above where it ought to be triggering caution and warning in the DM.

CC-H Okay, that must have been what we were looking at then. When we tried to give you a call about it we couldn't get up to you for some reason but that sounds like what you were doing.

CC-H Okay, we're standing by to hear the morning report- -

END OF TAPE

ASTP MISSION MC331/1

Time: 04:04 CDT, 92:44 GET

Date: 7/19/75

CC-H Okay, we're standing by to - to hear the morning report. Also I might ask how your temperature is this morning. We noted that we left the secondary loop - pump on last night. And we would suggest that you go ahead and turn it off. However if you're a little bit warm or humidity is a little bit high you might go ahead and turn on that secondary evap and bring it down. We have an adequate amount of water for it.

ACDR Okay, we'll turn the evap off.

CC-H I - did you say - the evap is off I guess. We noticed that the pump is still on which really doesn't help out your temperature situation. It just sets and blows hot glycol all around. If your - if you're hot right now you can go ahead and activate the evaporator. If not, just go ahead and secure the pump.

ACDR Yeah, we're still warm.

CC-H Okay, fine.

ACDR Okay secondary loop on.

CC-H Okay, copy that.

ACDR Okay, Crip, you ready for the morning report?

CC-H Yes, Sir, shoot it to us.

ACDR Okay, ate everything for breakfast and lunch.

For dinner I skipped the cranberry sauce and the brownies. Addition was a lemonade, coffee with cream and sugar. Okay, I had six hours of full sleep, real good sleep. PRD is 11005 had two lomotils and non-prophylactic. Over.

CC-H Copy.

ACDR For Vance; he had everything but lemonade for breakfast, lunch was all over in the Soyuz. - Okay for dinner - no pea soup, no mashed potatoes and no peach ambrosia or coffee but added pecan cookies. Okay, PRD reading is 48135. Had six good hours of sleep and he had an estimated 60 seconds of water. - - For Deke, everything for breakfast, no macaroni and cheese for lunch, no rye bread, and no macaroni and cheese because, you know, afraid to reconstitute the previous experience. And sure enough the cake was too crumbly to eat for dinner. Everything else he had. PRD reading is 61005; six hours of good sleep, Estimated 45 gulps.

CC-H Okay, we copied all your reports there, Tom. Appreciate it. The - I guess I had a couple of items - I guess we needed to get verified. We, normally, when you change the LiOH cans up there can see a drop in our PPCO2. And yesterday evening we had one scheduled for about 83:30. We didn't see that corresponding drop. Could you let us know whether that LiOH change was made?

ACDR That LiOH wasn't made.

CC-H Understand it was not made. What we would recommend is that we've got a change coming up at about 93:50 correc - yeah, that's right, 93:50

USSR Apollo, Soyuz. How do you read me?

ASTP (USA) MISSION MC331/2  
Time: 04:04 CDT, 92:44 GET  
Date: 7/19/75

ACDR (I hear you well, Alexey, how do you read me?)  
SCDR I read you well also.  
ACDR (Thank you.)  
CMP (Good morning.)  
ACDR Pardon me, Houston, - we were just talking to Soyuz.  
CC-H Rog. I heard Valeriy coming through. What we were going  
to recommend is on that LiOH can change we've got scheduled at 93:50,  
just go ahead and change both of them and the one you can go back and  
read at 83:30 that was supposed to put number 9 at - in ALPHA, and take  
7 and put it in D4 and you can just add that on to the - so you can change  
both of them out at 93:50.  
ACDR Roger. Double change at 93:50.  
CC-H Tom, the only other item I was curious about - unfortunately  
we tried to end up giving you a call in the middle of the night cause  
I thought you were trying to call me, and as it turned out I think we  
had - we were copying a tower frequency up from Atlanta through the  
command module and back down here - has that kind of stuff been bugging  
you guys in the evenings?  
ACDR Yeah, it has been usually but last night everybody  
slept so sound we didn't hear anything. But we've got LA tower, Atlanta  
tower, Heathrow, Dusseldorf, and a bunch of others.  
CMP Yeah, and Crip I looked at the squawk box this morning  
and it was turned off. So that's probably what did it. But I think we had  
somebody on the headset, but he probably slept through. So, I guess that's  
probably one reason why we slept so well though, because every time we have  
been getting every tower in Europe and parts of the U.S.  
CC-H Okay, I - I think that probably also answers why  
I couldn't get to you when I was concerned about that dump thing. We  
didn't realize that Deke was purging out there. I guess - after this  
evening we should be rid of that VHF problem though, since we won't be  
working in the relay mode any.  
USA Right.

END OF TAPE

ASTP (USA) MC332/1  
Time: 04:14 CDT, 92:54 GET  
7/19/75

ACDR Say, Crip, Tom.

CC-H Go ahead.

ACDR To save us - to save us the trouble of looking up, we want to shoot some pictures of the Soyuz out with the Nikon. Could you give us a typical exposure, air to air, using the lens we got in here and read us the exposure, ASA at 500, to save us from looking it up?

CC-H We'll get it for you.

ACDR Thank you.

CC-H Tom, could you tell us what lens you do have on right now?

ACDR It will be the wide angle lens on the Nikon.

CC-H Copy.

ACDR The only time we ever had the 300 on was when we were just coming - checking the docking mechanism.

END OF TAPE

ASTP (USA) MC333/1  
Time: 04:24 CDT, 93:03 GET  
7/19/75

CC-H Apollo, Houston. Tom, I can give you some info regarding those wind settings for the photos, if you would like.  
ACDR Okay.  
CC-H Okay. We're assuming that you've got CI film in there since you're mentioned the ASA 500. We're recommending (garble)  
ACDR (Garble).  
CC-H Okay, that's about 8 stop of 4, and it would be about one 500. You might verify with the built in light meter on the Nikon itself.  
ACDR Roger. Will do that.  
CC-H Okay, Tom and - -  
ACDR (Garble).  
CC-H Yea. On your report you gave us this morning, on the, the lomatel. We're assuming that you took that yesterday evening. Would you like any, any help from us for recommending - your menu changes for the next couple of days to help you out a little bit?  
ACDR No. I'll just stay off the coffee. I think we're in good shape.  
CC-H Okay.  
CC-H Apollo, Houston. We're still with you for about 26 minutes, and while you guys are having breakfast, I can give you a little news, or we can just save it like Deke did this evening - or yesterday evening, rather - and read it to you then.  
CMP We'd love to hear you, Crip. (Garble)  
CC-H Okay. We got a little disturbance on the line here. I'll hold up a minute.  
CC-H Apollo, Houston. Could you have CMI MASTER and CM2 SLAVE, please.  
USSR (Russian)  
CC-H We're getting a pretty good TV picture now. It's been dropping in and out. And my downlink voice has been a little fowled up. A little bit dark right now.  
CMP Roger, Crip. We might have the food tray in the way - we'll try to move it a little bit.  
CC-H No I seem to be seeing you pretty good there. See you working with your juice or whatever it is.  
CMP Turns out the MDC's make a pretty good table, as well as an instrument panel. I don't know what Rockwell would think of that, but that's how they get used a lot.  
CC-H Roger.  
CC-M (Soyuz, this is Moscow. How do you read me?)  
CC-M (How do you read me?)  
SCDR (Russian)

END OF TAPE

ASTP (USA) MC334/1  
Time: 04:33 CDT, 93:13 GET  
7/19/75

USSR (How do you read me?)  
CC-M (Soyuz, this is Moscow. How do you read me?)  
CC-H Deke, is there any chance of you shading that window up there by your shoulder? It kind of fouls up the picture for us a little bit.  
CC-M (Soyuz, Soyuz, this is Moscow. How do you read me?)  
CC-H We'd appreciate it if it doesn't interrupt your breakfast there too much. While you guys are doing that I can come at you with a little bit of news. I think that Dick told you yesterday you guys have been the big stars - -  
CC-M (Soyuz, Soyuz, this is Moscow. How do you read me?)  
CC-H - - One thing that's kind of interesting. We got a news item here from Moscow. And excuse my trying to pronounce the Russian names but it's a gentleman by the name of Bazemacan Satelebev(?), I guess, has named the - -  
CC-M (Soyuz, this is Moscow. How do you read me?)  
CC-H - - has named his twins Apollo and Soyuz according to the TASS news agency. The twins were born in Soviet Kagnesia in Central Asia where Satelebev(?) works in a plant processing semi-precious stones TASS reported Friday. Even in London you're making news. The head barman in a London hotel announced a new cocktail in honor of the Apollo Soyuz Space Flight. The barman, Joe Gilmore said the new drink called "Link-up" is made of equal parts of Southern Comfort Russian Vodka with a teaspoon of fresh lime shaken up well with ice. - -  
CC-M (Soyuz, Soyuz, this is Moscow. How do you read me?)  
CC-H The hotel is sent - -  
CC-M (Soyuz, this is Moscow. Please reply.)  
CC-H - - sample 5 of the cocktail along with a letter of congratulations are being flown to Kalingrad from - and Houston in ice coolers to wait the spacemen's return to Earth.  
USA That sounds great. Couldn't you send one up? And congratulations to the gentleman in the Soviet Union - -  
CC-M (Soyuz, Soyuz, this is Moscow. How do you read me?)  
CC-H President Ford has taken the unusual step of giving Soviet leader Brezhnev a peek at letters he wrote privately to congressmen before the congressmen had a chance to read them. In the letters, Ford announced his intention to seek remedial legislation from Congress to improve trade terms for the Soviet Union.  
CC-M (Soyuz, Soyuz, this is Moscow.)  
CC-H Senate Republican leader Hugh Scott - -  
CC-M (Reply for comm.)  
USSR (Russian)  
CC-H - - handed the two letters to Brezhnev when he and a 14 member senatorial delegation met with some Soviet (garble) in the Kremlin July 2 - -  
CC-M (Soyuz, Soyuz, this is Moscow. How do you read me?)  
CC-H - - during the recent congressional recess. I see that we're coming up on a pass over the Soviet Union and they're probably going to be talking a little bit - -



ASTP (USA) MC334/2

Time: 04:33 CDT, 93:13 GET

7/19/75

USSR (Moscow, this is Soyuz. I read you well.)  
CC-M (Soyuz, this is - good day, I hear you well, this  
is Moscow. Ready to receive all your data?)  
USSR (Okay. The windows are closed.)  
CC-M (Okay. How about the T-1. Is it on?)  
USSR (Okay. If we turn on this light, there'll be too  
much light. Too much glare. You see how much light there is?)  
CC-M (The picture wasn't bad at all. )  
USSR (That's right. Maybe we can get a better one.)  
CC-M (Moscow. The picture is good.)  
USSR (Okay. We're ready to receive radiograms. Zero 20.)  
CC-M (How about a little bit later.)  
USSR (Okay. We'll wait.)  
SCDR (We're feeling good. My beat is 40, Valeriy is 51.)  
CC-H We still - we got a good picture right now, but as  
soon as Vance is going to move his elbow, we get that light flaring, the  
one right over your shoulder, Deke. I wonder if those are filtered - -  
CC-M (Soyuz, this is Moscow. We're ready to receive report  
about pressurization.)  
USA There they are now.  
USSR (Okay. I will give it to you now.)'  
CC-H Okay this light we need the Polaroid, there we go,  
adjusted down. Thank you, Vance. Just about right there. You got the focus  
way on that last one.  
CMP Yes. We'll have to readjust that apparently - -  
CC-H Yes. You just had the filter in, if you can - -  
about 10 I believe is the number.  
CMP Wait a minute. The lens came off.  
CC-H The lens came off. Oh, that would do it to you.  
USSR (Moscow, this is Soyuz II. I'm ready to give you  
pad 20.)  
CC-M (Okay. We're ready.)  
USSR (Number 1. 01, 00, 02, 00, 03, 00, 04, 11, 25, two  
zeros, 06, two zeros, 07, two zeros, 08, 00, 09, 11, 10, 11, 00.)  
CC-M (We read you well. Confirmed. Thank you, Soyuz II.)  
CC-M (Soyuz II, this is Moscow. Okay. Give me - I'll  
give you parameters for 12 and 13.)  
USSR (Pad 20?)  
CC-M (Yes. For Pad 20.)  
CC-H Can we help you with any numbers there, Vance?  
CMP Does it still look - yes, I guess it does look a  
little out of focus, doesn't it?  
CC-H Yes, it's - the focus isn't really all that bad right  
now except, well, when you put it back on - -  
USSR (Zero number 12, 00.)  
CC-H - - not correct so if you just hold the lens and  
switch the filter a little bit I think we'll get a good - -  
USSR (Okay. 13 and 14, 00.)

ASTP (USA) MC334/3  
Time: 04:33 CDT, 93:13 GET  
7/19/75

CC-M (Received you. Thank you, Soyuz.)  
CC-H Hold it right there, that's good.  
CMP Okay. How's the focus ? Okay?  
CC-H I'm no expert but it looks good to me. I think I've  
got a majority vote here that it looks good.  
CMP Okay.  
CC-M (Russian)  
USSR (Garble) 2. That's the pressure.)  
CC-H I didn't think you guys got to hear my good wishes this  
morning - -  
CC-M (Received it, Soyuz II.)  
CC-H - - speaker box turned off.  
CMP . Yeah, we were kind of wondering what it would be like.  
Hate to have missed it.  
CC-H Oh, well. We'll come back at you.  
CMP I think we'll have to give you some wake-up music  
in return sometime, too.  
CC-H We'd appreciate that.

END OF TAPE

ASTP (USA) MC335/1

Time: 04:43 CDT, 93:23 GET

7/19/75

USSR (550 pressure.)  
USSR (We've got an awful lot of stuff around and after we do the  
pressurization, we will systematically put everything away.)  
MCC-M (Roger, Soyuz.)  
USSR It's already put together and packed. We just have to  
carry it over to the descent vehicle.  
MCC-M (Roger, Soyuz.)  
USSR (Pressure is 610.)  
MCC-M Well, we turn the camera out for a minute and looked  
out the window. It's kind of pretty. We're back with you again.  
CMP Very good.  
USSR (Russian)  
USSR (690.)  
CMP Crip. Just one thing to mention. We've got a little  
bit of moisture on the inside of the outer pane. It's looks like  
window 5, and I think if we get in a sunny attitude it might evaporate,  
but right now it's - well I don't know if it could bother the SIM or  
the photos or not.  
CC-H Does it appear to be outside? Is that what you said,  
Vance.  
USSR (Russian)  
CMP Looks like - you know, you have a couple of panels  
and it looks like it might be on the inside of the outer panel.  
USSR (Russian)  
USSR (Russian)  
CC-H Okay. We're about ready to lose you here through  
the ATS, and our next station - -  
USSR (Russian)  
CC-H - - contact will be through the Vanguard, and that's  
about 24 minutes away.  
CMP See you then.  
CC-H Okey-doke. Vanguard at 93:52.  
USSR (Russian)  
CMP Rog. Have a good breakfast, if you haven't already.  
USSR (Russian)  
CC-H I was thinking more like dinner.  
CMP Yes, Yes, we're doing fine.  
USSR (Russian)  
USSR (Russian)  
USSR (Russian)  
CC-H (Garble)  
USSR (Russian)  
PAO This is Apollo Control. Loss of signal through  
ATS-6 satellite as the Apollo and Soyuz spacecraft still docked cross  
the Siberian Coast to the north of the Japanese Island chain. Twenty  
minutes away from next station at Vanguard - tracking ship Vanguard,  
which incidentally on Monday will start moving to the west to move into

ASTP (USA) MC335/2  
Time: 04:43 CDT, 92:23 GET  
7/19/75

position to support the Viking Mars Lander launches. The crew in their meal period at the present time aboard Apollo. And upon completion of their breakfast will begin preparation for undocking, the Solar Eclipse Experiment, redocking, then final undocking, followed by the UVA experiment and a fly-around inplane and out-of-plane for the ultraviolet absorption experiments. We'll return in 18 minutes at tracking ship Vanguard. This is Apollo Control at 93:33 ground elapsed time.

END OF TAPE

ASTP (USA) MC336/1  
Time: 05:12 CDT; 93:52 GET  
7/19/75

PAO This is Apollo Control at 93:51 ground elapsed time. Tracking ship Vanguard in 30 seconds. We're looking at 5:30 a.m. central daylight time in the JSC main auditorium for a change of shift briefing. Offgoing flight director, Don Puddy, his experiments officer J.J. Conwell. his EECOM Bill Moon. Portions of the next ATS6 satellite pass will be recorded for delayed playback after this press conference. Standing by for tracking ship Vanguard.

CC-H Apollo, Houston. We're AOS at Vanguard. We have you for about 6 minutes.

ACDR Roger, Dick, or Crip.

CC-H Yo, Crip here. I'm probably going to be giving it to Bo shortly. Only one item I'd like to pass to you up on this pass, I believe, is that I think they had told you that one of your TV cameras was causing us a little bit of problem with color glitches and they had you switch it around. That was the one that we've currently got on station 11 - panel 11, and what we'd like you to do if you can, to allow us to insure that we're gonna have good TV for the rest of the day is to switch the cameras that you have on 11 and 871. And what we want you to do is to disconnect the cable at the camera. In other words, do not exchange the camera cables.

ACDR Okay, Crip. I'll do that and also we got the LiOH exchanged out.

CC-H Okay, good deal. Thanks a lot, Tom.

CC-H The O2 flow is pretty high. We'd like to verify that the waste stowage vent valve is closed please.

ACDR I think it's still open, Crip. Venting from the urin area there (garble) open it.

CC-H Okay, that's fine.

CC-H Apollo, Houston. We are about 45 seconds from LOS. Our next station contact will be through the ATS and that's at about 94:13. Tom, one item on that camera exchange you're making for me, we want the one that you end up installing on panel 11 to be put in MASTER and the one that you take over to A71 to be in SLAVE. That's just changing the position on each of those cameras.

ACDR Roger, panel 11 MASTER.

CC-H Thank you. And I'll be saying good evening to you and talk to you in the morning.

ACDR Okay. (Russian)

CC-H The next morning that is.

PAO This is Apollo Control. LOS tracking ship Vanguard. Next station in 14 minutes will be ATS6 satellite. Still flying too far south to start picking up Santiago for the next couple of revs. As Apollo and Soyuz go to the southern most latitude in the orbit some 51 degrees. The change of shift press conference will be underway prior to the time of acquisition at ATS6 satellite and we'll tape any of this pass or all of the pass that takes place during the press conference for delayed playback. Flight director Don Puddy and his experiment officer and EECOM, 5:30 a.m. in the JSC main auditorium. This is Apollo Control at 94 hours.

END OF TAPE

ASTP (USA) MC337/1  
Time: 06:12 CDT, 94:52 GET  
7/19/75

PAO This is Apollo Control. 94:52 ground elapsed time. We're in acquisition over ATS-6 satellite with some 10 minutes remaining. First portion of this pass was recorded during the change of shift briefing for delayed playback. We'll start with the AOS at ATS on the tape and play catch up until we go live. Roll the tape.

SPKR (Russian.)  
ACDR (Russian.)  
CC-H (Russian) We're on ATS here.  
ACDR (Russian.)

ACDR Houston, Apollo.

CC-H Apollo, Houston. Go ahead.

ACDR Yeah, Bo. Say, all three of us just want to thank you so much for doing a great job on CAP COMM yesterday. That was a long rugged day and everything you did to keep the breaks coordinated was outstanding. Just wanted you to know how much we appreciated it.

CC-H Okay. It was my pleasure. It was certainly an interesting day.

ACDR (Garble.)

CC-H Apollo, Houston. We'd like to accept so we can give you a new REFSMMAT.

ACDR Okay, Bo.

CC-H Thank you and I have the undocking pad, which is on page 7-1, volume II of the flight plan. When somebody has a chance, give me a call and I'll pass it up to you.

ACDR Okay. Going to it now, Bo.

aCDR We've already maneuvered (Garble) incidentally here.

CC-H Roger. We understand that. We're sorry it's late, but it (garble).

ACDR Okay. Okay, Bo. Go ahead.

CC-H Roger. Page 7-1, the final. 95, 43, 1200, 17329, 27203, 35089. We've already locked up ATS so those high-gain angles are not applicable and of course you only have to put these fine numbers in on the trim, just before undocking.

ACDR Okay, on the read back on the final undocking. (garble) 095, 43, 1200; 17329, 27003, 35089.

CC-H The seconds were 2000.

ACDR Roger. So the time's 09 5,, 2000. Right?

CC-H That's a good read back.

ACDR Thank you.

CC-H And, Tom, while you have that check list out, there is one more change, I'm sorry, and that's at 95:26, where it says primary evaporator check list. Also, add in deactivated secondary evap, S1-18. Did you get all that?

ACDR Yeah, deactivate the second one.

CC-H Deactivate the secondary evaporator, roger.

CC-H When we're finished with the uplink, we can go block.

ACDR Okay.

CC-H Apollo, Houston. Some one here heard a discrepancy in the pitch number, could you confirm that that is 27203?

ACDR 27003.

ASTP (USA) MC337/2  
Time: 06:12 CDT, 04:52 GET  
7/19/75

CC-H Negative. It should be 27203.  
ACDR Okay.  
CC-H Thank you.  
CC-H Apollo, Houston. We'd like you to leave the shades  
in, that ya don't need out for the UVA, so that it won't - so that we  
get better TV.  
DMP Bo, we need about all we can get (garble.)  
CC-H You were kind of garbled, Deke. Did I understand  
that you said you wanted those windows open for visibility?  
DMP Yes. We want everything we got.  
CC-H Roger.  
CC-H Anad, Apollo, as you can probably guess, we are  
getting a TV of the inside of the command module now, and there seems to  
be something over the TV.  
CC-H Thank you.  
DMP It must be we've had some fantastic viewing and picture  
taking of Africa right now.  
CC-H Roger. Command module, Houston. That out the window  
camera is really giving us a good view this afternoon.  
SPKR (Garble)  
DMP That's good to know, (garble) having a ball.  
CC-H We have one request. That camera that - item that  
was in front of that camera that Vance had taken down, really was  
helping. Before it was blocking some of the light that was coming out  
of the center hatch window.  
CC-H That's perfect, right now.  
DMP Does that help?  
CC-H That's - that's just right.  
ACDR Okay. I've blocked the number 1 window here with  
a map. Does that help some?  
CC-H Roger.  
ACDR I'm gonna have to take it down periodically to  
get a view.  
ACDR Hello, Houston, Apollo.  
CC-H Apollo, Houston. Go ahead.  
ACDR Roger, First thing, we thought we'd give you some  
wakeup music.  
(Music)  
SPKR (Garble.)  
USSR Apollo, Soyuz (garble) again.  
ACDR (Russian)  
USSR (Russian.)  
ACDR (Russian)  
USSR Proud Mary.  
ACDR Houston, we'll have this and other good selections  
for you later on.  
CC-H (Russian)  
USSR (Garble) we don't want - want you. In Soyuz we're  
going to go to descent vehicle.  
ACDR (Russian.)  
CMP Houston, Apollo.

ASTP (USA) MC337/3  
Time: 06:12 CDT, 94:52 GET  
7/19/75

CC-H	Apollo, Houston. Go ahead.
USSR	(Russian.)
SPKR	(Russian.)

END OF TAPE



ASTP (USA) MC338/1  
Time: 06:12 CDT, 94:52 GET  
Date: 7/19/75

SCDR (Russian)  
CMP Houston, Apollo, as usually we get some very good viewing because of attitude weather concern. We just now got a couple of visual observations, things that we haven't been able to get as well before. For example, saw the Lebanese rim and Egypt - I think might have seen the Pyramids; that's - the nightcaps that we have - had. And now I've got to see a picture or a layout of - of how the Pyramids are laid out when we get back, but I saw two specks that might have been the Pyramids.

CC-H Say again what the specks might have been.  
CMP We think they're the Pyramids of Egypt and that happens to be a visual observation. I can - -

SPKR (Garble)  
USSR (Russian)  
CC-H I understand.  
CMP (Garble)  
CC-H Experiments asked us to relay that they appreciate the good work.

SFE (Russia)  
CMP I hope we've got time to comment, we haven't much good work in that area so far because of a combination of cloud cover and (garble).  
USA More days are coming and we're looking at that picture out the window and it looks pretty fantastic now with Soyuz just over the horizon.

CMP - Right.  
USSR (Russian)  
USA Soyuz.  
SFE (Russian)  
JSA Soyuz, Apollo.  
CC-H Apollo, Houston. Go ahead.  
CMP Now we're calling Soyuz. (Garble)  
CC-H I'm sorry.  
CMP Okay. Soyuz, Apollo. Soyuz, Apollo.  
SFE Apollo, Soyuz. (Russian.  
SFE - Soyuz. Apollo, this is Soyuz. How do you read me?  
CMP (Russian)  
SFE (Russian)  
CMP (Russian)  
SFE (Garble)  
CMP (Russian)  
CC-H Apollo, Houston. There's about a minute and a half of ATS until ATS LOS. We'll see you at Vanguard at 95:24.  
CMP Roger, Bo. 95:24.  
USSR (Russian)  
USSR (Garble)  
PAO This is Apollo Control That completes play-back of the accumulated air-ground, actual loss of signal at ATS satellite as Apollo and