This is Gemini Launch Control. The Gemini 11 mission was postponed early today when a small leak was detected in the first stage oxidizer tank during checks of the Gemini Titan Two launch vehicle. The leak was discovered during regular checks of the vehicle following completion of the propellant loading during the early part of this morning's countdown. Both stages of the Titan Two use Aerozine 50 fuel, a combination of unsymmetrical di-methyl hydrazine and hydrazine, and nitrogen tetroxide as the oxidizer. A total of some 31,900 gallons of propellants. The leak was discovered on the outer skin of the first stage, on a weld seam some five feet below the top of the oxidizer tank. Project officials said it would require some six hours to empty the launch vehicle propellants and determine the extent of the problem and its effects on the launch schedule. This will be about 9 a.m. Eastern Standard Time this morning. As soon as the determination is made on the recycle, which will be at least 24 hours, an announcement will be made. This is the Gemini News Center.

This is Gemini Launch Control. We're T-264 minutes and counting. T-264 and counting, and right on time in our countdown at the present time, aiming toward our dual launching of the Gemini 11 mission. We have just completed at launch complex 14, the propellant loading of the Agena stage. We completed that about 6 or 7 minutes ago. Following this propellant loading, that is, loading the fuel aboard the Agena, the hydrazine fuel. Our next step about 20 minutes from this time, will be to start to roll the gantry service structure back at the pad to continue the count. It's expected that perhaps just about this time, on a matter of a minute or so, the planned pilots for the mission, astronauts Pete Conrad and Dick Gordon will be awakened at their crew quarters at the Kennedy Space Center, Merrit Island. The backups for the mission, Neil Armstrong and Bill Anders have been up in the white room, the 100 ft. level at launch complex 19, aboard the Gemini Spacecraft for about 2 hours at this point. Our countdown the overall countdown now has been in progress for about 7 hrs., starting shortly after 10 a.m. EST last evening. All is going well, despite the fact that we have had driveing rain storms here at the Cape over the last hour or so. The weatherman still is giving us a prediction of exceptible weather for this mornings launch at 10. The forecast only calls for partly cloudy, conditions in the Cape area, winds from the northeast at about 12 knots, a sea state of 3 to 4 ft. and a temperature of about 82 degrees. Despite the driving rain storm that we have had out here over the last several hours, it has had little or no effect on our countdown operations. It has not caused any delays nor any problems. That generally is the picture at this point, coming

up on T-262 minutes in counting and preceding. This is Gemini Launch Control

END OF TAPE

nis is Gemini launch control T-254 minutes 55 seconds and counting. We now have confirmation that about 9 minutes ago or at 4:59 a.m. eastern standard time the two pilots for the mission, astronauts "Pete" Conrad and Dick Gordon were awakened at their crew quarters in Merritt Island. They are now up. They'll be starting their quick physical examination shortly which will be followed by breakfast at the crew quarters at KSC and a little later in the countdown they will be coming down to the ready room at launch complex 16 to don their space suits. From here on in they are a part of the countdown. They were awakened right at the proper time in the countdown at the T-260 minute mark or 4:59 a.m. eastern standard time. One point of interest it was reported that astronaut "Pete" Conrad had requested to be awakened at 5 a.m., that is one minute later, so that he could have said that he slept late on launch day. However, he was awakened along with Dick Gordon at 4:59 .ght on the nose as planned. To repeat, both pilots for the mission are now up. Their backups are still in the spacecraft, astronauts Neil Armstrong and Bill Anders making the preliminary checks on the Gemini 11 spacecraft. They have been in the spacecraft now for about 2 hours and 15 minutes or so. All still going well. We just received an update on weather as far as launch time is concerned, and the weatherman despite some severe rainstorms that we have had here about this time this morning, is predicting broken clouds for the Cape area at launch time. Broken clouds at about twelve thousand feet, a visability of ten miles, surface winds 10 knots from the northeast and a seastate of three feet. Weather around the rest of the world track will be acceptable for launch attempt this morning. In the event that as we approach the Atlas Agena liftoff time which is 7:48 a.m. EST and did have some rain at that time, in all probability we still would be able to launch. The guide .ules would be rain safety minimums would be observed, that is that the

various radars tracking the mission would have to be able to receive signals from the launch vehicle. As long as there would be no interference in the rain safety manner, it is expected that we would be able to launch despite the fact that there could be some rain in the area. The weatherman at this point is still standing by his prediction of broken clouds at about twelve thousand feet at launch time. This is Gemini launch control.

END OF TAPE

This is Gemini Launch Control, T-230 minutes and counting. T-230, all still going very well with our countdown for the Gemini 11 mission. This count has now been in progress for some 7-1/2 hours since it picked up with the main countdown last evening, and we have no problems at this time, all has gone well. In a matter of about 15 minutes ago, the final major participant in the, this very complex countdown joined the count, that was the Gemini Launch Vehicle which came in at the T-240 minute mark. We now have some 9 countdowns going on simultaneously and all going well at this point. Astronauts Pete Conrad and Dick Gordon should just about finished up their physical examinations and will be coming back down the hall at the Crew Quarters, Kennedy Space Center, Merritt Island, and they will be sitting down at breakfast shortly. We expect to get confirmation of their activities at the Kennedy Space Center also shortly. All other tests are still going well at this time. About 15 minutes ago we began to roll back the Gantry Service Structure at Launch Complex 14 where we have the Atlas/Agena, the first of the two vehicles we will launch this morning. We have already loaded the fuel aboard that Agena stage and once we get the Gantry Service Structure in its fall-back position, once we have it in its locked position, the crew at 14 will then proceed to load the acid oxidizer aboard that stage. At Launch Complex 19, the backup pilots Neil Armstrong and Bill Anders, still aboard the Gemini spacecraft making their preliminary check. They will be ready later in the countdown to give it complete report to the prime pilots of the spacecraft. All systems still going well at T-228 minutes 13 seconds and counting. This is Gemini Launch Control.

END OF TAPE

This is Gemini Launch Control, T-220 minutes and counting. All systems going very well in our simultaneous countdown at this time. In a matter of a minute or so, the prime pilots astronauts Pete Conrad and Dick Gordon should be sitting down for breakfast out at the crew quarters at the Kennedy Space Center. We'll have a report on their menu and on the guests they had for breakfast shortly. They have just about completed their physical exams. We hope we will get a report from Doctor Fred Kelley, the examining physician following the completion. Coming up in about ten-minutes at launch complex 14, as we secure the gantry service structure at 14, will be the final propellant loading of that Agena second stage and about a 30-minute time period, we'll load some 10,000 pounds of that acid oxidizer aboard the Agena to complete the propellant loading of that stage. All other systems going well at this time. At launch complex 19, backup pilots, Neil Armstrong and Bill Anders still aboard the Gemini 11 spacecraft. The Gemini launch vehicle, the propellants were loaded aboard the Gemini launch vehicle in about a 3-hour and 15-minute operation, starting last evening and winding up shortly after midnight this morning EST. We loaded all the propellants aboard both stages of the Gemini launch vehicle, made another check of that leak which we have a patch covering that leak, in the oxidizer tank of the first stage, that caused a postponement of yesterday's launch attempt. The crew took another look at it, and it's standing up very well. We are very satisfied with the fix that was made to that pin-hole leak on the first stage of the Gemini launch vehicle. Our weather situation still remains acceptable for launch. Mr. Ernie Ammons, representative of the spaceflight meteorology group, reports that

we had plenty of weather on the world-wide track, but none of it will interfere with the launch attempt this morning. We had some severe rain storms here in the Cape area a little earlier this morning, but it's not expected that that will cause any problem. It has had no effect on our countdown operations thus far. The forecast, broken clouds at launch time of about 12,000 feet. Winds from the northeast at 10 knots, surface winds from the northeast at 10 knots, to repeat. A sea state off the Cape of about 3 feet. We have three tropical storms of interest off of West of Baja, California, they have tropical storms Francesca, Helga and Gretchen. The astronauts probably will fly over the storms at various time in the mission, but they are expected to have no effect on the launch attempt. Now, T-217 minutes and counting. This is Gemini Launch Control.

END OF TAPE

This is Gemini launch control T-210 minutes and counting, T-210 and counting. All still going very well with our Gemini 11 countdown at this point. At launch complex 14 where we have the Atlas Agena located, the first of our two vehicles to launch this morning, the crew has been given a go ahead to start that oxidizer loading of the Agena second stage. That's some ten thousand pounds of acid that we will load aboard the Agena now that we have the service structure in its fall back position. During this period it will take about 30 minutes to load the acid aboard the Agena. All systems still going well also at launch complex 19. The backup pilots Neil Armstrong and Bill Anders still aboard the spacecraft. They expect to leave the spacecraft about twenty minutes from this time. Since we have to clear the launch complex during the pressurization of the Gemini launch vehicle, which is due at one sixty-five in the count. The two backups will return to the spacecraft however after the pressurization and continue their preliminary checks of the various Gemini spacecraft systems. The backups now have been in the spacecraft some three hours at this time. Meanwhile at the Kennedy Space Center crew quarters the prime pilots "Pete" Conrad and Dick Gordon are sitting down for breakfast. They have eight guests for breakfast this morning and we will now give you the list of guests for breakfast at KSC. Dining with the prime pilots are: Donald K. Slayton who is director of flight crew operations for MSC and Alan B. Sheppard who is chief of the astronauts at MSC. Also in attendance are six of the new group of astronauts who were selected on May 1st of this year. There are a total of 19 pilot astronauts selected in the latest group on May 1st. Six of them have been here receiving some briefings and getting familarized with our Cape operations. The six are also having breakfast with the prime crew. They are as follows: 1st are two civilians Mr. Vance D. Brand, Mr. Fred W. Haise, Lt. Cmdr. Ronald E. Evans, Marine Major Gerald P. Carr, Navy Lt. John S. Bow, Navy Lt. Thomas

K. Mattingly. To repeat those names quickly and those names will be available in news centers both in Houston and here at the Cape. The six new astronauts who are joinning the prime pilots for breakfast Vance D. Brand, Fred W. Haise, Ronald E. Evans, Gerald P. Carr, John S. Bow, and Thomas K. Mattingly. Also dining with the pilots of course are Donald K. Slayton and Alan B. Sheppard. Now coming up on T-206 minutes 43 seconds and counting. This is Gemini launch control.

END OF TAPE

This is Gemini Launch Control, T-200 minutes and counting. T-200, all still proceeding very well with our simultaneous countdown for the Gemini 11 mission. The overall countdown now has been in progress some 8 hours. All is still going very well. We're right on time with all the events at this point in the count. At the Kennedy Space Center, Merritt Island, the prime pilots for the mission, Astronauts Pete Conrad and Dick Gordon, now have been up for about an hour. They are sitting down having breakfast at this time with 8 guests at the table. Their menu has been confirmed and it's the usual astronaut's fare of orange juice, fillet mignon, scrambled eggs, toast, and coffee. It's expected that the astronauts will be departing from the Crew's Quarters about 15 minutes from this time. They will go to the Ready Room at Launch Complex 16 where they will don their space suits. In the meantime, at Launch Complex 19, the backup pilots, Neil Armstrong and Bill Anders/have now left the spacecraft. They have been aboard the Gemini 11 spacecraft at the 100 foot level at Launch Complex 19 for about three hours. We're now clearing the White Room in anticipation of the pressurization of the Gemini Launch Vehicle which will be coming up in about 20 minutes or so. Following the pressurization of the Launch Vehicle, the 100 foot level, the White Room crew and the backup pilots will return to the White Room to continue their preparation. All is still going very well at this time both at Complex 19, with the Gemini Launch Vehicle and spacecraft, and Complex 14 where we are still loading that acid oxidizer aboard the second stage, the Agena second stage at Complex 14. Now coming up on T-198 minutes and 9 seconds and counting. This is Gemini Launch Control.

END OF TAPE

This is Gemini Launch Control, T-187 minutes and counting. T-1 8 7. Just a matter of a minute or so ago, the prime pilots for the mission, astronauts Pete Conrad and Dick Gordon departed from the crew quarters, at the Manned Spacecraft Operations Building, Gemini Space Center, and now are on their way to launch complex 16, the ready room where they will suit up for the mission. They are on their way. They were awakened 1 minute before 5:00 AM this morning, 5:00 AM EST. They then proceded down the hall for a quick medical checkup by Doctor Fred Kelley of the Manned Spacecraft Center. Doctor Kelley declared them physically fit for the mission. Following the physical, a team breakfast. They had some eight guests with them at breakfast this morning and the usual astronaut menu of orange juice, fillet mignons, scrambled eggs, toast and coffee. At launch complex 19, the crew is just completing the connection of the destruct boxes aboard the Gemini launch vehicle. These are the connectors for the destruct package that would be used to terminate the flight if problems developed during the mission. Meanwhile at launch complex 14, all is still going well as we complete the loading of the acid aboard the Agena second stage. All still going very well with our simultaneous countdown at this time. There have been no holes and there are no problems at this point. T-185 minutes, 30 seconds and counting. This is Gemini Launch Control.

END OF TAPE

This is Gemini launch control T-175 minutes and counting, T-175. All still going very well with our simultaneous countdown for the Gemini 11 mission. Astronauts "Pete" Conrad and Dick Gordon now have arrived at the ready room at complex 16. This is that trailer facility where they will make their final preparations for the flight before going to launch complex 19 and their Gemini spacecraft which is up at the 100 ft. level, the so-called white room at complex 19. The first event that will occur in the ready room at 16, the prime pilots will get a thorough briefing on the status of the countdown and the overall mission. They will be told that we have had a very good countdown thus far with no problems. That we have completed the propellant loading of the Gemini launch vehicle in about 3 hours and fifteen minutes late last evening finishing up about 45 minutes after midnight this morning EST. The crew then made some checks of that pin hole leak that caused us some problems which caused the postponement of yesterday. The patch, the aluminum patch, and the various fixes that were applied to that pinhole have stood up and the crew is very satisfied with the repair. There is no problem whatsoever with the Gemini launch vehicle or the Atlas Agena here at complex 14 at this time. The backup pilots Neil Armstrong and Bill Anders have cleared the white room. They were in the spacecraft some three hours making th preliminary checks. The white room has been cleared at complex 19 in the anticipation of the pressurization of the Gemini launch vehicle which will be coming up in about 15 min. from this time. Then the backups as well as the crewmen who work at the 100 ft. level will return to that area to continue the final preparations. We have a report from the block house at complex 14 that the loading of the acid aboard the Agena second stage, some ten thousand pounds of oxidizer has been completed. The Agena is now completly loaded with propellants.

The propellants that will be used by that sixteen thousand pound thrust engine when the Agena stage burns both on the flight portion of the mission toward orbit and then in the Gemini 11 flight plan itself during the 3 day mission. All systems still going well at this time, T-172 minutes 25 seconds and counting. This is Gemini launch control.

END OF TAPE

This is Gemini Launch Control, T-165 minutes and counting. T-1 6 5 We are about to start the pressurization of the Gemini Launch Vehicle. This is the process whereby we feed nitrogen under pressure into the tanks for both the fuel tanks and the oxidizer tanks, in both stages of the Gemini launch vehicle to give them the proper pressure for flight. All systems still going very well at this time in the countdown at a launch complex 14. The test conductor, the chief conductor, in the blockhouse launch vehicle test conductor, now has control of the clock. This means that if any holds are going to be called, because of the simultaneous countdown, a very complex countdown, in which we have nine different counts winding up in one. Because of this, one man needsto control the clock if a hold if called. The control of this clock previously has been at complex 19, but now and down through the liftoff of the Atlas Agena, the control will be dealt by the launch vehicle test conductor on complex 14. In fact, he has had this clock control for about 15 or 20 minutes at this time. All systems still going well. Our latest weather report indicates that we will have satisfactory conditions for launch and satisfactory conditions around the world-wide track. Astronauts Pete Conrad and Dick Gordon should be suiting up in their trailer facility at Complex 16 at this time. T-163 minutes, 30 seconds and counting. This is Gemini Launch Control.

END OF TAPE

This is Mission Control, Houston, at T-154 minutes. Flight Director Clifford Charlesworth has just checked all the worldwide network stations, tracking stations. He finds that they are all up and ready to support this mission. For a check on the countdown at the - we will now switch to the Cape.

This is Gemini Launch Control at the Cape. Now T-154 minutes 33 seconds and counting. At Launch Complex 19, we have completed our pressurization of the Gemini Launch Vehicle. We pressurized those propellant tanks in the Launch Vehicle with nitrogen. Following the pressurization, we took a close look at that leak that caused us some problems the other day. The leak was patched up and the leak was fixed. Following the pressurization, we took a close look and we are still in a go condition, we have no problems whatsoever with that pinhole leak. At Launch Complex 14, a key guidance command test is in progress at the present time. This is a test between the radio command guidance system, which sends signals to the programer and the Flight Control System on the Atlas/Agena vehicle. The test is in progress, it appears to be going well at this point. The next highlight at Launch Complex 14, as we get closer to the Atlas/Agena liftoff will be the liquid oxygen loading of the first stage which is due about 15 minutes from this time. Astronauts Neil Armstrong and Bill Anders are back in the Gemini 11 spacecraft cockpit at this time making their final checks. They will be ready to report to the prime pilots Pete Conrad and Dick Gordon when they arrive at the Launch Pad at about the 115 minute mark in the countdown. Now T-153 minutes 11 seconds and counting. This is Gemini Launch Control.

END OF TAPE

This is Gemini launch control T-145 minutes and counting, T-145 minutes and counting. We are now 50 minutes away from the planned Atlas Agena liftoff at 7:48 a.m. EST. All systems still going well in our pre-launch checkout both at launch complexes 19 with the Gemini launch vehicle spacecraft combination and complex 14 with the Atlas Agena. The test conductor at complex 14 has just given a go ahead for the liquid oxygen loading of the Atlas first stage at pad 14. This is the final phase of the propellant loading for the Atlas Agena vehicle. Earlier in the countdown we had loaded the propellants aboard the Agena second stage. The liquid oxygen which must be maintained at a temperature of some 297 degrees below zero, is brought aboard at a fast flow rate until it reaches 95 percent fill. In fast flow the liquid oxygen comes aboard at about two thousand gallons per minute. It is fed to the vehicle under pressure by helium. When it does reach its 95 percent fill we then start to top it off. Because of its extremely low temperature the liquid oxygen will continue to boil off. We have a cycle system for topping off that keeps on replenishing the liquid oxygen supply to maintain its 100 percent level. This will continue to ..until 2 minutes and 10 seconds before the planned liftoff. When the vent that permits the boil off will close and we should have our 100 percent supply of liquid oxygen on board. Prior to loading the liquid oxygen we chill down the various lines and the Atlas system. We have a chilldown to prepare it for the extremely low temperatures which the liquid oxygen must be maintained at. All systems still going well as we start our LOX loading at this time. The prime pilots for the mission "Pete" Conrad and Dick Gordon are due to depart their trailer ready room at complex 16 about 18 minutes from this time. The backups Neil Armstrong and Bill Anders still aboard the spacecraft making the final pre-ingress checks. T-142 minutes 41 seconds and counting. This is Gemini launch control.

END OF TAPE

Capt. Alan Shepard, Chief for the astronauts speaking to you from outside the suit trailor at complex 16. It is now 7:03. The astronauts will be coming out in approximately 5-minutes to go to pad 19 where they will insert into the spacecraft in preparation for flight. They both are in excellent spirits, we're a little concerned about the shower activity, but I believe the showers are moved well off the coast and we don't have to anticipate any delay in either the Atlas launch or the Gemini launch. Pete and Dick both had a hearty breakfast of steak and eggs this morning. They were joined by six of the new astronauts, Deke Slayton and myself. They're looking forward to the launch. We don't see any problems in the horizons at all right now, everything is go from this standpoint. Capt. Shepard, Tom Johnson, Associated Press, Did the astronauts have anything particular to say this morning about their suiting up and getting ready. (answer) Nothing in particular, we viewed the weather fairly carefully, not only the local weather but also the weather that they will experience during their high altitude orbits. This of course, is of great interest because we are anticipating taking some pictures from this high altitude and they were interested in that. That appears to be good, the weather in Australia is good, the weather over North Africa is good, and all in all it appears as though it is going to be a good flight. (question) Could you tell us if either one of them were carrying any sort of charms or mementos or anything of that sort. (Shepard) Yes, as usual, each of the pilots has , what they call, a personal preference package, personal preference kit, and personal things they want to carry along for themselves, their relatives and their friends. We usually leave it up to them after the flight to discuss these items if

they so desire. (Tom Johnson) Thank you very much.

END OF TAPE

GEMINI 11 MISSION COMMENTARY, 9/10/66, 6:08 A.M. TAPE 14, PAGE 1

This is Gemini Launch Control, coming up on T-135 minutes and counting. T-135 and counting, all still proceeding very well with our simultaneous countdown for the Gemini 11 mission. We are now some 40 minutes away from the planned Atlas/Agena lift-off. All still going well. At Complex 14 with the Atlas/Agena, as we continue to load the liquid oxygen aboard the Atlas first stage. We are about to go into one of our key guidance checks, one of our final checks of the airborne flight system. This is a test in which we check the autopilot which is located on one of the pods at the side of the Atlas first stage. The autopilot directs the vehicle during the early phases of the flight. As a part of this test we turn on the hydraulic system of the Atlas vehicle and actually swing or swivel those engines, the primary engines at the base of the Atlas vehicle, in response to directions from the autopilot and the Flight Control System. These are the twin booster engines and the sustainer engine that gimbal or swivel in flight in response to the commands of the Flight Control System. This test appears to be going well in its early phases at this time. Astronauts Pete Conrad and Dick Gordon are still at their Ready Room at Complex 16. They are due to depart for the Pad at Complex 19 and the Gemini 11 spacecraft in about 8 minutes from this time. Now T-133 minutes 28 seconds and counting. This is Gemini Launch Control.

END OF TAPE

.....25 minutes and counting, T-125. We are awaiting shortly the departure of the prime pilots from their ready room at Complex 16 to the Gemini 11 spacecraft a hundred feet atop Launch Complex 19. They should be leaving shortly. The prime pilots, Pete Conrad and Dick Gordon now have been up for about two and a quarter hours. Back at their crew quarters at the Kennedy Space Center they had a quick physical, were declared physically fit by Dr. Kelly of the Manned Spacecraft Center; had breakfast with about eight guests and then came down to the ready room. They have been in the ready room now about 15 minutes or so as they check out their suits and make their final preparations before leaving for the pad. All systems still going well at Launch Complex 19. The crews have made a pre-ingress check and all systems report go. At Complex 14 as we get closer, now some 30 minutes away to the planned liftoff to the Atlas/Agena, which is planned for 48 minutes after the hour. All is still going well in the final checkouts for the Atlas/Agena at this time. Now T-123 minutes, 45 seconds and counting, this is Gemini Launch Control.

END OF TAPE

This is Gemini Launch Control, T-122 minutes, 30 seconds and counting. Astronauts Pete Conrad and Dick Gordon are now on their way, they have boarded the transfer van and should be arriving at Complex 19 shortly. Waiting for them up at the 100-foot level, the so-called White Room, where the hatches are located for the Gemini 11 spacecraft are their backup pilots, Neil Armstrong and Bill Anders. They will be ready to give the two prime pilots a last minute report on the status of their spacecraft. From all the checks that have been going on in the blockhouse and in the spacecraft plus the checks with the mission control center in Houston, all the checkouts in the spacecraft have been going very well thus far. The astronauts are now rounding the turn and should be arriving at the base of the pad in a matter of minutes from this time. They will then proceed up the elevator to the White Room, get a brief report on the status, they'll be told the status is good and then they will be ready to board the spacecraft. They are due to go over the hatch at about the 115 minute mark in the countdown and then the hatches will be closed at about 100 minutes, five minutes before the Atlas/Agena is due to be launched. At T-121 minutes, 13 seconds and counting, this is Gemini Launch Control.

END OF TAPE

This is Gemini Launch Control. We're at T-120 minutes and holding. T-120 minutes and holding. We do not know the cause of the hold at this time, we will report it to you as soon as this information is available. In the meantime, Astronauts Pete Conrad and Dick Gordon have arrived in the White Room at the 100 foot level, the spacecraft test conducter has alerted the crew in the White Room to hold off on the insertion into the spacecraft, that is, the boarding of the spacecraft by the two pilots until we get a further report on the reason for this hold. T-120 minutes and holding. This is Gemini Launch Control.

END OF TAPE

This is Gemini launch control we're at T-120 minutes and holding, T-120 and holding. Our problem at complex 14, during the guidance command checks that were in progress they started at the 135 minute mark in the countdown, we had about a twenty minute test that was due to end at about 115 minutes. During this test as we reported earlier the auto-pilot system, which is located on the POD on the side of the Atlas vehicle, was supposed to respond to some commands from the flight control system of the Atlas vehicle. The hydraulics are brought on and those three engines at the base of the Atlas vehicle the sustainer and the twin booster engines are supposed to respond to direction from the auto pilot during this test. That is, these engines should swivel or gimbal in response to directions from the auto pilot. Some readouts in the block house have indicated that booster engine #2 apparently did not respond to the signals from the auto pilot. We do not know whether the difficulty is with the auto pilot or with the booster at this time. However, this is strictly a reading in the block house and the crew is looking over the problem at this time. In the meantime the prime pilots astronauts "Pete" Conrad and Dick Gordon are in the white room at the 100 foot level. They are standing by for a further report from complex 14. To repeat, we encountered a difficulty in our auto pilot test during the final phases of the countdown for the Atlas Agena. One of the readouts we have in the block house concerned with this test does not appear to be correct. We are attempting to determine our problem whether it is in fact a problem with the launch vehicle itself or perhaps with some ground support item. As this is clarified we will report it to you. T-120 minutes and holding. This is Gemini launch control.

END OF TAPE

This is Gemini Launch Control, we're still at T-120 minutes and holding. T-120 and holding. Our problem is down at launch complex 14. It concerns readout that was received in the blockhouse in connection with the test of the Atlas auto-pilot system, that is the system that directs those three engines at the base of the Atlas vehicle to swivel inflight to give the vehicle a proper trajectory. During this test, we did receive one readout in the blockhouse that indicated that either the auto-pilot system or one of the boosters was not performing properly in response to the flight system of the vehicle. We're still making our checks in the blockhouse at launch complex 19 in the whiteroom, astronauts Pete Conrad and Dick Gordon are standing by. When the pilots arrived in the whiteroom, the crewmen who have worked with them for a number of weeks in the whiteroom, kidded the two pilots a little bit. They passed on to Pete Conrad, the command pilot, a model of a shoe-horn, which is about 4 feet high, it's a shoe-horn and they gave it to Pete because he had complained at some problems on trying to locate a television monitor in the spacecraft during some of the rehearsals for the orbital flight. This TP monitor is associated with one of the experiments on the Gemini mission, the so-called night image intensification experiment, designated D-15. A part of this experiment is to place a small television monitor in the cockpit. It is stored in one of the bays of the spacecraft and then located behind the command pilots head at the time the experiment will be in operation. During the checkout, Pete Conrad

had complained of some difficulty at times in working with this monitor, said the crew presented them a present of a shoe-horn and on it, it had the title "TV monitor stowage tool," indicating that Pete might be able to put it to use to help him with his difficulty that he has had at times in the pre-launch check-out. We're still awaiting further word from complex 14, as the crew continues to check the readouts on auto-pilot booster situation. T-120 minutes and holding. This is Gemini Launch Control.

END OF TAPE

This is Gemini launch control still T-120 minutes and holding, T-120 and holding. We are standing by to receive further word from complex 14 as the crewmen attempt to verify the flight readiness of the auto pilot system and the hydraulic system that directs those three prime Atlas engines during the flight. The checks are still going on and we have received no final word at this time. In the white room at launch complex 19 astronauts "Pete" Conrad and Dick Gordon, prime pilots for the mission, are seated comfortably in front of the hatches of the Gemini 11 spacecraft standing by awaiting further word. Still T-120 minutes and holding. This is Gemini launch control.

END OF TAPE

This is Gemini Launch Control, T-120 minutes and holding. Still holding at 120. The crew in the Blockhouse at 14 reports that they cannot give us any estimate on the hold time at this point. They have described the hold as indefinite, and they cannot indicate how long it will take as they continue to verify the autopilot system of the Atlas vehicle which is located on one of those pods on the side of the first stage and the hydraulic system that directs those three main engines to swivel or gimbal in flight in response to the guidance system commands to keep it on the proper trajectory. They are still awaiting further word as the tests continue at Complex 14. At Complex 19 the prime pilots standing by, still outside the spacecraft awaiting further word on the progress of the Atlas/Agena count. T-120 minutes and holding. This is Gemini Launch Control.

END OF TAPE

GEMINI 11 MISSION COMMENTARY, 9/10/66, 6:48 A.M. TAPE 22, PAGE 1

This is Gemini Launch Control. T-120 minutes and holding. T-120 and holding. The Launch Director at Complex 14 has reported that they need an additional 10 minutes from this time to make a determination on how they stand as far as their checks with the autopilot system are concerned. Our problem came up during an autopilot test. This is a check of the autopilot system on the Atlas vehicle which generates signals that cause the vehicle to respond to guidance system commands during the powered phase of the flight. The crew at the Blockhouse is still trying to verify the autopilot system and perhaps the hydraulic system associated with it that causes those three main engines to swivel at the base of the Atlas vehicle. In about 10 minutes, the test conductor reports, he will know how they stand. This does not mean we will be ready to pickup at that time but we will be looking forward to a status report at that point. The prime pilots are being kept aware of the problem in the White Room at Complex 19. They are still standing by patiently, actually sitting in front of their two hatches of the Gemini 11 spacecraft. We are looking for more information in about 10 minutes from this time on the status of our checks at 14. Still T-120 minutes and holding. This is Gemini Launch Control.

END OF TAPE

This is Gemini Launch Control, we are at T-120 minutes and holding, T-120 and awaiting further word on the status of our checks of the autopilot systems with the Atlas vehicle at Complex 14. The Checks are still goingon in an attempt to verify the autopilot system for the flight. We are standing by awaiting further word. T-120 minutes and holding, this is Gemini Launch Control.

END OFTAPE

This is Gemini launch control T-120 minutes and holding, T-120. Astronauts "Pete" Conrad and Dick Gordon now have been advised to depart from the white room at the 100 foot level. They have come back down the, they are in the process of coming down the elevator and they will return to their ready room at complex 16. It appears from the reports at block house at complex 14 that we are still not able to varify the auto pilot system of the Atlas vehicle. A recommendation has been made to replace the auto pilot canister that is the complete auto pilot system that is located in one of the PODs at the side of the Atlas vehicle. This recommendation is being considered and the various aspects concerned with it at this time. As far as our hold period is concerned we really do not have a cutoff because one of the restrictions for a hold on the Atlas Agena would be the temperatures in the Gemini launch vehicle. These temperatures are remaining quite stable and indicate that we would have no problem that would restrict the hold time of the Atlas Agena and the Gemini 11 mission at this time. We are standing by to get a further word on the recommendation of changing the auto pilot canister. If this is required there will be a hold of some 2 hours to accomplish this. We are awaiting further determination at this time on the decisions of these recommendations. These are strictly recommendations at this point, however the astronauts the two prime pilots have been alerted and are now returning to the ready room at complex 16 to stand by. T-120 minutes and holding. This is Gemini launch control.

END OF TAPE

This is Gemini Launch Control. We remain at T-120 minutes and holding. T-120 and holding. Here's a recap of the situation at the present time. Astronauts Pete Conrad and Dick Gordon have now returned to the ready room at Launch Complex 16. They were in the White Room and were advised to return. Our difficulty has been attempting to verify an autopilot system aboard the Atlas vehicle. After some 30 minutes of checks to attempt to verify this the crew is reported they are still unable to do so. The recommendation is to change the autopilot in the cannister which is located on one of the pods beside the Atlas vehicle. In order to do this we will require a hold of perhaps several hours. As a further phase of this recommendation the liquid oxygen would be detanked from the Atlas stage and when the count would be resumed the oxygen would again be loaded aboard the Atlas. Now these are the recommendations, the mission people at this point are attempting to determine if we will be able to hold for this lengthly period from two to three hours and still be able to accomplish the mission. A guideline prior to the countdown today was that perhaps that we might be restricted to perhaps an hour and a half because of the condition of the propellants aboard the Gemini Launch Vehicle. As the temperatures rise, those propellants increase and decrease

the amount of gas in each of the tanks of the fuel and propellant and oxidizer systems. As this gas diminishes, we could wind up with a situation of not having enough gas to force the propellants to the thrust chamber, where of course they burn and provide the thrust. This one hour and 30 minute limitation appears not to be valid, it appears we have more time than that, because we had some heavy rainstorms this morning, and that has helped to keep the temperatures of the propellant system at a lower temperature than were anticipated at this point in the countdown. We are still standing by as the Mission Director, who is checking with the launch mission people here at the Cape, attempt to determine whether we will have enough time to accomplish this mission and make the fixes that are recommended. We are still at T-120 minutes and holding, this is Gemini Launch Control.

END OF TAPE

GEMINI 11 MISSION COMMENTARY, 9/10/66, 7:08 A.M. TAPE 26, PAGE 1

This is Gemini Launch Control, still at T-120 minutes and holding. The Gemini Mission people are still - are discussing our problem attempting to make at determination on whether we will have enough time today to make the proper fixes on the Atlas vehicle, resume the countdown, and be able to perform the dual launches of the Gemini 11 mission. Different aspects are being looked at to determine how much actual hold time we will have, that is, what is the latest time we will be able to launch that Atlas/Agena and still have time to launch the Gemini 11 spacecraft some 97 minutes later. This is the major point at this point - what is the latest time we can launch the Atlas/Agena and discussions are in progress to determine this cutoff time. The Mission Director, Bill Schneider, has been discussing the problem both with the flight people in Houston and the launch people here at the Cape. It is anticipated also that the crew will be advised and the problem will also be discussed with them. The prime pilots, Pete Conrad and Dick Gordon/ are now back in their Ready Room at Complex 16. This is where they suited up for the mission. They stood by for about 30 minutes, seated in front of their Gemini 11 spacecraft before being advised of the recommendations that a fix would be required with the autopilot system. We are still standing by to get a determination on whether we will have enough time to launch today. In order to replace this canister the estimate is made that is will take about 2 hours to do the work. That is, to physically go out to the pad at Complex 14 to take out the present autopilot canister located in the pod and to

replace it with new one that will work properly. We have detanked the liquid oxygen. Now in the process of doing it with the Atlas vehicle, this means that when we are ready to pickup our countdown, we will have to recycle to 70 minutes earlier in the count. That is, we are now at T-120 and holding. If the work is performed, if the determination is made that we will be able to launch, then the count will be resumed at 190 minutes, or 70 minutes earlier than we stand right now because we would have to recycle back to pickup certain procedures prior to the liquid oxygen loading. The reason for taking out the liquid oxygen, of course it must be maintained at 297 degrees below zero, it is very temperature sensitive and during a hold of some 2 hours it is felt that it would be best to take it out at this point and send it back in when the countdown is resumed. That is our status. We are standing by for a determination of the hold time. T-120 minutes and holding. This is Gemini Launch Control.

END OF TAPE

This is Gemini Launch Control, we're still holding at T-120 minutes. T-120 minutes and holding. We're still attempting to make a determination on our problem at this time. The main question is whether we will have enough time today, in order to launch the Atlas Agena and Gemini Launch Vehicle. We are standing by for a further determination. T-120 minutes and holding.

END OF TAPE

This is Gemini launch control T-120 minutes and holding. The mission has been "scrubbed". The determination has been made by project officials that in order to make the fix required on the Atlas vehicle that is the auto pilot system, there would be too much time necessary in order to accomplish the mission. The real cutoff here is concerned with lighting for the rendezvous in orbit. It appears that we would not have enough time today to fix the auto pilot problem, conduct the two launches and still have proper lighting conditions for the rendezvous of the Gemini 11 spacecraft and the Agena 11 in orbit. Of course that rendezvous is planned for the end of the first orbit of the mission. The lighting conditions would not be satisfactory if we got off too late this afternoon. The determination has now been made that we will not have enough time to launch. The mission has been postponed. We will get a report shortly on reschedule information. This is Gemini launch control.

END OF TAPE

This is Mission Control, Houston. Gemini mission director, William Schneider has announced that the Gemini 11 mission will be recycled 48 hours. That will put liftoff Monday morning. Flight director, Clifford Charlesworth reports that launch times will remain essentially the same. They'll be reworked some, but they will not change over one or two minutes. This is Gemini Mission Control, Houston.

END OF TAPE

GEMINI 11 MISSION COMMENTARY, SEPT. 12, 1966, 3:37 A.M., TAPE 1, PAGE 1

This is Gemini Launch Control, T-286 minutes and counting. T-286 minutes and counting. All going well with the Gemini 11 countdown at this time. We have had no problems since we picked up the countdown shortly after 10:00 P.M. EST last evening. All is going well both at Launch Complexes 19 and 14 at the present time. Our weather report indicates that we will have satisfactory conditions for launch both here at the Cape and on the worldwide track. Those clouds that were supposed to be coming in on three layers as it turns out broke up earlier than anticipated and it looks like we will have good conditions for launch morning. All systems looking good at this time coming up on 37 - 38 minutes past the hour about 7 seconds from this time. This is Gemini Launch Control.

END OF TAPE

This is Gemini Launch Control, T-273 minutes and counting. T-273 minutes and counting, just a little more than 51 minutes past the hour. Our countdown for Gemini 11 going very well at this time as it has since the count was picked up late last evening All systems looking very good. The prime pilots for the mission astronauts Pete Conrad and Dick Gordon still in bed at this time, but they're expected to be awakened about 9 minutes from this time. Their backups, astronauts Neil Armstrong and Bill Anders are aboard the Gemini 11 spacecraft at the 100 foot level at launch complex 19. They've been in the cockpit now for about 2 hours, making the preliminary checks of the spacecraft system. Our checkouts of both launch vehicles, both at launch complex 19 and 14 going very well. At launch complex 14, we're starting to load the fuel aboard the Agena stage, that Agena second stage. The gantry service structure is still around the launch vehicle at this time. We'll load some 4,000 pounds of hydrazine fuel aboard the Agena second stage. Following that fuel loading, the tower will be rolled back and we'll complete the propellant loading of the Agena following tower rollback by loading the acid oxidizer aboard. At this time, our key test of the power system of the Atlas Agena vehicle is going on. This is a check of those batteries in the launch vehicle both stages, to insure that the flight batteries will be operable. We go from external power, ground power to internal power on the bird and then after insuring that all the batteries are operating satisfactory, we return to

external power to conserve that battery energy. We finally go on the flight batteries at a very late point in the countdown. Our weather situation looks very good for launch attempt this morning A forecast late yesterday indicated that there would be some extensive cloudiness in the area. However, these clouds, particularly at lower altitudes, started to break up sooner than anticipated. We expect to have good conditions for launch. The overall forecast calls for partly cloudy skys in the Cape Kennedy area, winds from the south about 10 knots, and off-shore sea state at 1 to 3 feet, and a temperature of about 87 degrees. We'll have none of those low clouds that were indicated in the forecast yesterday, they have reported that they have broken up earlier than anticipated. Just partly cloudy skys which should be acceptable for launch. As far as the rest of the world-wide track in concerned, across the Atlantic on the first passage of the Gemini spacecraft after launching acceptable landing conditions will prevail. In the mid-Pacific landing zones, centered about 300 miles east-northeast of Honolulu, partly cloudy conditions are anticipated, winds from the east at about 15 knots and a sea state of 5 feet. In the western-Pacific landing zone, centered about 700 miles south-southwest of Tokyo, mostly cloudy conditions with occasional showers. Winds will be from 10 to 15 knots, sea state 4 feet. In the eastern-Atlantic landing zone, centered about 300 miles west of the Cape Verdie Islands. Cloudy conditions also will prevail in that area, occasional showers, winds will be light and variable and the sea

state 3 feet. In the primary landing zone in the western-Atlantic, centered about 800 miles east of Miami, partly cloudy conditions, with winds from the east at about 12 knots and a sea state of 2 to 4 feet. There are some five tropical storms roaming about the Pacific Ocean. Among them are tropical storms, Franchesca, Gretchen, and Helga. All of them are in the Pacific between Central America and Hawaii. Perhaps some of these will be observed by the astronauts once they are in orbit. Now, coming up on T-268 minutes, 45 seconds and counting. All systems going well in our countdown at this time. This is Gemini Launch Control.

This is Gemini launch control T-256 minutes 27 seconds and counting on the Gemini 11 countdown. All systems going well at both launch complexes at the present time. A matter of about 6 or 7 minutes ago the prime pilots for the mission astronauts "Pete" Conrad and Dick Gordon were awakened at their crew quarters at the Kennedy Space Center. The man who woke them up was Alan Sheppard chief of the astronauts office who also spent the night in the crew quarters last evening. We had it logged as awakening the prime crew at one minute past the hour 5:01 A.M. EST. Meanwhile at launch complex 14 we have just about completed that propellant loading the fuel loading that is, of the Agena second stage. The crews there are making preparation to pull back that Gantry Service structure. It is due to go back about ten minutes from this time and it will be locked in its fall back position. Following that operation the crew will proceed to complete the propellant loading of the Agena by loading the acid oxidizer aboard the stage. At launch complex 19 the backups Neil Armstrong and Bill Anders still in the cockpit of the Gemini 11 spacecraft as they have been for a little over 2 hours at this time, making all the preliminary checks. One of the highlights we have passed in the countdown already came at the T-315 mark when we had the first several tests in the regular countdown, the first of several tests of that auto pilot of the Atlas launch vehicle which caused us some problems on Saturday and forced the postponement on that day. This test went very well as a part of the test and this is a regular procedure at that point in the countdown. The auto pilot system was tested and

activated. It in turn sent signals to the hydraulic system of the launch vehicle which in turn swivelled those three engines at the base of the Atlas in response to the Auto pilot signals. The tests were successful and there will be more tests of that system as regularly planned in the countdown. The final one coming about T-135 minutes and lasting about 20 minutes in the countdown. All systems still going very well. WE've had no problems since the countdown picked up at about 10;04 P.m. EST last evening. The Gemini launch vehicle is fueled in rather rapid time. It took just a little more than three hours to accomplish it last evening. The propellant loading of the Gemini launch vehicle began at 8:54 P.M. EST and was completed at 11:52 P.M. EST, just 2 seconds less actually than three hours. Now coming up on T-253 minutes 33 seconds and counting 10 minutes and 30 seconds after the hour. This is Gemini launch control.

END OF TAPE

This is Gemini Launch Control at T-245 minutes and counting. T-245 and counting on the Gemini 11 mission. Our countdown is still going well at this point. We have had an excellent countdown thus far since the countdown was picked up late last evening. Astronauts Pete Conrad and Dick Gordon who were awakened about 18 minutes ago, at 1 minute past the hour, now should be down the hall starting their physical examination. This is at the Kennedy Space Center Crew Quarters on Merritt Island. Dr. Fred Kelley of the Manned Spacecraft Center will be the man giving them their final physical checks. Following the physical, they will sit down and have breakfast and then appear to depart from the Crew Quarters to the Ready Room at Launch Complex 16. Their backups, Neil Armstrong and Bill Anders, still aboard the Gemini spacecraft making the preliminary checks. We are gearing up at Launch Complex 19 to pickup that Gemini Launch Vehicle countdown about 4 minutes from this time. We loaded the propellants aboard the Gemini in a little less than 3 hours last evening, and now as far as the simultaneous countdown is concerned which has about 9 different phases to it, the Gemini Launch Vehicle is the last major one to join the count and that will occur at the 240 minute mark. At Launch Complex 14, the crews are gearing up, making their final preparations in an anticipation of rolling back the Gantry Service Structure that surrounds the vehicle. We have completed loading the fuel aboard the Agena second stage and after the tower is rolled back, the crew will proceed with the

acid oxidizer loading with that same stage to complete the propellant loading of the Agena. Now coming up at T-243 minutes 9 seconds and counting. This is Gemini Launch Control.

END OF TAPE

This is Gemini Launch Control at T-230 minutes and holding. T-230 minutes and holding. This hold is declared just a matter of a minute or so ago. Our problem was down at launch complex 14. It appears to be associated with some ground support equipment at launch complex 14, right at the launch complex itself. We expect to have further details on the problem shortly. We have no estimate on the length of the hold at this time. T-230 minutes and holding. To repeat once again, the problem at complex 14, where the Atlas Agena is located. We understand the problem is with some ground support equipment, not necessarily associated with the launch vehicle itself. We expect to get further details on it shortly. The test conductor has not given no indication of any estimate on the length of the hold at this time. T-230 minutes and holding. This is Gemini Launch Control.

END OF TAPE

This is Gemini Launch Control. We've resumed our countdown on the Gemini 11 mission. Now coming up on T-228 minutes, 54 seconds and counting. We did run into what appeared to be a problem at Launch Complex 14 associated with some ground support equipment. We do not have further details on that at this time. We do expect to get them shortly on a briefing from the test conductor at 14; as soon as they are available, we will bring them to you. In the meantime, we have resumed the countdown. The hold which was declared at T-230 minutes lasted about three or four minutes duration. Meanwhile, Astronauts Pete Conrad and Dick Gordon should be finishing up their physical examination at their crew quarters at the Kennedy Space Center and getting ready for breakfast. We understand that the only guest they will have for breakfast this morning will be Alan B. Shepard, Chief of the Astronaut Office, who was the man who awakened them just about 34 minutes ago -- 35 minutes ago at one minute past the hour. Now at T-227 minutes 55 seconds and counting. This is Gemini Launch Control.

END OF TAPE

This Gemini launch control T-219 minutes and counting T-219 at 45 minutes past the hour. Our countdown is still proceeding at this time. We have a report from the crew quarters at the Kennedy Space Center Merritt Island that astronauts "Pete" Conrad and Dick Gordon have completed their physical examination and received a "thumbs-UP" report from Alan Sheppard indicating that the examination went very well. The examining physicians were Dr. Fred Kelley and Dr. Alan Harter. Dr. Harter spells his name H A R T E R. The astronauts now going back and getting ready to sit down for breakfast. Their one guest for breakfast this morning will be Alan Sheppard the chief of the astronaut office. Going back about 12 minutes in the countdown we did encounter a brief hold at the T-230 minute mark. Our report now is that the purpose of that hold was strictly to synchronize the clocks in the countdown. We are still aiming toward a planned liftoff time of 7:49 A.M. EST at this time. We completed the loading of the fuel aboard the Agena stage and the crews at launch complex 14 are gearing up to remove that Gantry service structure. At complex 19 the Gemini launch vehicle count is in progress. It came into the simultaneous countdown at the 240min. mark of the count or some twenty-three minutes from this time..23 minutes from this time, 23 minutes earlier. Our countdowns are proceeding at the present time and now T-217 minutes 18 seconds and counting. This is Gemini launch control.

END OF TAPE

GEMINI 11 MISSION COMMENTARY, 9/12/66, 4:54 A.M. TAPE 8, PAGE 1

This is Gemini Launch Control, T-210 minutes and counting. T-210 on the Gemini 11 mission, and we are proceeding. We have a report from the Crew Quarters at the Kennedy Space Center at Merritt Island that the prime pilots for the mission, Astronauts Pete Conrad and Dick Gordon are sitting down to breakfast with their one guest, Astronaut Alan B. Shepherd, who is Chief of the Astronaut Office. The menu consists of a New York strip sirloin steak, scrambled eggs, juice, toast, and coffee. The Astronauts will be departing from the Crew Quarters in about 10 or 15 minutes from this time. They will go from the Crew Quarters to the Ready Room at Launch Complex 16 where they will start to don their suits and make their final preparations for the mission. The Astronauts will depart from Launch Complex 16 at about the 125 minute mark in the countdown and proceed to the 100 foot level at Launch Complex 19 where the hatches for the Gemini 11 spacecraft are located. The backup pilots, Astronauts Neil Armstrong and Bill Anders are still aboard the Gemini spacecraft at this time making the preliminary checks. They will be ready to report to the prime pilots on the status of their spacecraft when they do get to that 100 foot level. Now coming up on T-208 minutes 34 seconds and counting. This is Gemini Launch Control.

END OF TAPE

T-200 minutes and counting. T-200 minutes and counting. We are proceding with our Gemini 11 countdown. Astronauts Pete Conrad and Dick Gordon are just about finishing up their breakfast at the crew quarters, Kennedy Space Center, and are expected to depart from their KSC crew quarters at about 13 minutes past the hour and procede to launch complex 16 in the ready room where they will make their final preparations for the mission. At the 100 foot level, which so-called whiteroom at launch complex 19, the crew is in the process of departing the 100 foot level at this time. This includes crewman 3 and crewman 4, who are the backup pilots for the mission, astronauts Neil Armstrong and Bill Anders. They'll come down from the whiteroom in anticipation of the pressurization of the Gemini launch vehicle. The pad area must be clear. We pressurize those propellant tanks in both stages of the Gemini launch vehicle with nitrogen. This is due to occur at about the 165 mark in the count, however, we are going very well at 19. It might come a little earlier than that time. Following the pressurization, the backup pilots and the flight-room crew will return to the 100 foot level to continue the final preparations of the spacecraft. The astronauts are due to - the prime pilots are due to depart from pad 16 and their ready room at about the 125 minute mark in the countdown. At complex 14, we're still in the process of rolling back the gantry service structure. The next item that will be coming up when the service structure is secured, would be the loading of the acid oxidizer aboard the Agena stage. Now at T-198 minutes, 10 seconds in counting, this

is Gemini Launch Control.

END OF TAPE

This Gemini launch control T-187 minutes and counting, T-187 and counting. We are proceeding with our countdown and we now have a report that the prime pilots astronauts "Pete" Conrad and Dick Gordon have just departed from the crew quarters at the Kennedy Space Center. We have it logged at 15 minutes past the hour. They are on their way to the ready room at launch complex 16 where they will first get a thorough briefing on the status of the countdown. They will don their space suits and go through the final checkout. They are due to start from the ready room at 16 to go to the pad at about the 125 minute mark in the count. At launch complex 14 we are in the process of final securing of the Gantry service structure. And at launch complex 19 the crew and the backup pilots have departed from the white room at the 100 foot level in anticipation of pressurization of the Gemini launch vehicle which will be coming up shortly. When we pressurize the Gemini launch vehicle we bring nitrogen aboard to pressurize the propellant tanks in both stages. Following successful pressurization the white room crew, the support crew, plus the backup pilots Neil Armstrong and Bill Anders will return to the spacecraft. Now coming up on T-185 minutes 37 seconds and counting. This is Gemini launch control.

END OF TAPE

This is Gemini Launch Control, T-165 minutes and counting. T-165 and counting, and we are proceeding on the Gemini 11 mission. At this point in the countdown, we have completed the pressurization of the Gemini Launch Vehicle at Launch Complex 19, and the White Room crewmen and the backup pilots, Neil Armstrong and Bill Anders have returned to the White Room and to the Gemini spacecraft to make their final checks. The prime pilots, Astronauts Pete Conrad and Dick Gordon are at the Ready Room at Launch Complex 16 where they are donning their space suits and making their final preparations. At Launch Complex 14, we have completed the loading of the acid oxidizer aboard the Agena stage. This completes the propellant loading of the Agena. We have just received a report on what might have been a problem at Launch Complex 14 which has been resolved at this time. A short while ago it was determined that a small piece of foreign material was noted in a hydraulic feed line, part of the ground support equipment that feeds hydraulic fluid from a unit at the complex to the launch vehicle. It was determined that this was a small sliver of metal. Checks have been made and it was determined that there was no way that this metal could get to the launch vehicle to have any effect of the vehicle itself. The metal now has been isolated and checks have determined that it can have no effect on the launch vehicle or the hydraulic feeding to the vehicle. It is not a problem at this time. It has been resolved and we are proceeding. We are now at T-163 minutes 20 seconds and counting. This is Gemini Launch Control.

END OF TAPE

This is Gemini Mission Control, Houston at T-154 minutes, 57 seconds. A check with the worldwide tracking network shows that all stations are go and are able to suppost this mission. For a report on the progress of the countdown, we'll switch now to Cape Kennedy.....Our countdown is preceding. The simultaneous countdown for Gemini 11, we now have nine different parts of the countdown and all in operation at the same time.At this present time, the major four of course being the Gemini launch vehicle and spacecraft at complex 19 and the Atlas Agena vehicle at complex 14. Coming up at complex 14, about 10 minutes from this time will be the final propellant loading of the Atlas vehicle. This is loading some 18,600 gallons of liquid oxygen aboard the Atlas vehicle. Because of the extremely low temperature of liquid oxygen, the so-called cryogenic type of propellant, we will have to continue to top-off the liquid oxygen till we get down to several minutes before the liftoff. We feed in the liquid oxygen in a fast flow of some 2,000 gallons a minute and when we reach 95 per cent in the load, we will then begin to top-off, that is, feeding in additional liquid oxygen as it starts to boil off and go through a vent. This vent will remain open as reported until about 2 minutes before liftoff. For 5 or 10 minutes before we start loading the liquid oxygen, we condition the plumbing over various parts at the base of the Atlas vehicle for the extremely low temperatures that they'll encounter when the liquid oxygen comes aboard. This is done by initially feeding some liquid oxygen to these various plumbing phases in the Atlas vehicle. At complex

19, the backups, Neil Armstrong and Bill Anders still in the cockpit of the Gemini 11 spacecraft making their final check and are awaiting the arrival of prime crew, astronauts Pete Conrad and Dick Gordon who will coming to the pad about 25 minutes from this time. All going very well at our countdown at this time, now at T-152 minutes, 37 seconds and counting. This is Gemini Launch Control.

END OF TAPE

This is Gemini launch control T-145 minutes and counting. All proceeding very well with the Gemini 11 mission countdown at this time. Our reports from both launch complex 19 with the Gemini launch vehicle spacecraft combination and the Atlas/Agena at complex 14 indicate all is going well. Our weather forecast also looks good for both here at the cape and the around the worldwide track. As far as the report here at the Cape is concerned the latest forecast indicates broken clouds at 12 to 15 thousand feet, winds from the south under 10 knots, a seastate off the Cape of one to three feet, visability of ten miles and temperature expected of about 83 degrees by launch time. Around the rest of the track the weather is acceptable for launching today both in the Atlantic and the Pacific oceans. There are five tropical disturbances in the Pacific between central America and Hawaii, these include tropical storms; Gretchen and Helga. They will have no effect on the mission whatsoever and in fact might provide some interesting observations for the astronauts once they are in orbit. We are standing by to get further reports on astronauts "Pete" Conrad and Dick Gordon and they are still at the ready room at complex 16 where they have donned their space suits and will await the word to go to the pad which should come at the 125 minute mark in the count. Now T-143 minutes 30 seconds and counting. This is Gemini launch control.

END OF TAPE

Good Morning, I'm Captain Alan Shepherd, Chief of the Astronaut Office and Flight Crew Director for GT-11. Things have going very smoothly with the Flight Crew this morning thus far. They were awakened at 5:02, two minutes after five this morning. The medical exam was routine and showed no difficulties. We had a slight substitution - for breakfast this morning at the crew's request, we had some strip sirloins instead of fillets, which they enjoyed. There were three of us at breakfast, Pete, Dick, and myself. Since that time, from the quarters here through the suiting trailer at Complex 16, things have been going extremely smoothly. As I understand things have been going with the rest of the count. Apparently the problems that they had experienced earlier in the count have been taken care of. The crew will be leaving here at 7;19 approximately 15 minutes to go to Pad 19 to ingress into the spacecraft. We're very pleased with the weather here locally here locally this morning, their responses were enthusiastic as they saw the lack of cloud covering and the lack of thunder storms. They are also pleased about the weather around the world which has improved somewhat over Friday's weather, that is, with respect to the photographic situation. - - T-143 minutes and counting - with respect to the photographic situation, the weather looks better around the world. Do you have any questions?

Tom Johnson Tom Johnson, 18, ...garbled..

Shepherd No just the usual conversation. They are always interested, of course, in how the count is

Shepherd progressing and how the weather looks. So these things are always discussed. There are no pranks this morning. There seem to be less people around. Everything was running smoothly, I don't remember any specific comments they made.

QUESTION Doug Friedlander, Houston Post, I was wondering are they going to take any good luck trinkets up with them, and if so, what are they?

Shepherd Yes, as a matter of fact. Both of them have a small package of personal items which they are carrying. This has been done in the past on almost every flight. Also, as we do in the past, we leave the choice of discussing those up to the pilots and many times they do discuss these at the post-flight press conference.

END OF TAPE

This is Gemini Launch Control, T-135 minutes and counting. T-135, all still going well with the Gemini 11 countdown. The key operations at this point in the countdown are going on down at launch complex 14 with that Atlas Agena launch vehicle. We've started the liquid oxygen loading of the Atlas first stage. This the final stage for the propellant loading of the overall vehicle. Earlier in the count, we brought the propellants aboard the Agena second stage. Also, just starting at this point, is an auto-pilot systems test. This comes in at T-135 in the count and we check the auto-pilot of the Atlas vehicle located in the pod at the sight of the Atlas first stage. The auto-pilot generates signals to the hydralic system of the launch vehicle causing the engines to swivel or gimbal. They will react according to the signals received from the auto-pilot and the flight control system of the vehicle. This was the problem that we encountered on our launch attempt last Saturday. It's about a 20 minute test, and close to the end of that test, it was determined on Saturday that we had a problem with the auto-pilot system. Earlier in the countdown, about 3 hours ago, at the T-315 minute mark, we had another auto-pilot test and it went very well. This was a regular test in the countdown, we've added no new tests. It just comes regularly at the T-315 mark and once again at 135. This test is starting now. From all our data from the earlier tests we had no problems whatsoever. Now, T-133 minutes, 22 seconds and counting. This is Gemini Launch Control.

END OF TAPE

This is Gemini launch control T-125 minutes and counting, T-125. At both launch complexes particularly launch complex 19 the crewmen have just gone through a status report in anticipation of the arrival of the prime crew at complex 19. They are due to depart from their ready room shortly. They will go aboard their transfer vehicle and get to the base of pad 19 in a matter of minutes then go up the elevator and report to the white room to get the final status report from the backup pilots Neil Armstrong and Bill Anders who have been in the spacecraft for approximately over four hours making the preliminary checkouts since early this morning. All systems going well on both countdowns. The liquid oxygen loading on the Atlas vehicle at complex 14 going very well as they continue to load it aboard. All systems still operating fine at this point. The astronauts due to depart shortly. This is Gemini launch control.

END OF TAPE

This is Gemini Launch Control, T-123 minutes and counting. All still going very well on the Gemini 11 count. Astronauts Pete Conrad and Dick Gordon are on their way to launch complex 19. Just a matter of seconds ago, they boarded their transfer vehicle and are now on their way - the short trip between complex 16 and 19 and the 100 foot level, the so-called whiteroom where the Gemini 11 spacecraft is located. About 7 minutes from this time, the two pilots will go aboard the spacecraft, hook in to the environmental control system and the communication system and become a part of this overall simultaneous countdown. The hatches are due to be closed about 22 minutes from this time, at about the 100 mark in the countdown, some five minutes before the planned Atlas Agena liftoff. All systems still going well at both launch complexs as a result of the systems status checks that came up just a short while ago in anticipation of the prime pilots arrival at the pad. So, in a matter of minutes, we'll have our two pilots up in the whiteroom getting the final status report on the progress of the count. They will be told at that time that we are in a go condition at this time for an Atlas Agena launch at 49 minutes past the hour, and the Gemini launch some 97 minutes thereafter. At T-121 minutes, 34 seconds and counting. This is Gemini Launch Control.

END OF TAPE

GEMINI 11 MISSION COMMENTARY, 9/12/66, 6:25 A.M. TAPE 18, PAGE 1

This is Gemini Launch Control, T-119 minutes and counting. T-119 some 24 minutes away from the planned Atlas/Agena lift-off. All systems still going well as the prime pilots, Pete Conrad and Dick Gordon arrive at the White Room at Launch Complex 19. They are checking signals with their backup pilots, Neil Armstrong and Bill Anders at the present time and about 2 or 3 minutes from this time, they will climb aboard the Gemini spacecraft. Once they do get in, they will go through a series of checks leading up to the closing of the hatches on the spacecraft at T-100 minutes. Once they are plugged into the cockpit, they will go through some communications checks. They will be talking to Stoney who is the capsule communicator in the blockhouse, Astronaut C. C. Williams. This will be followed by some biomedical checks. These checks will be monitored also by the physicians in the blockhouse to make sure they are getting good readings. The Astronauts now coming aboard the spacecraft, both Pete Conrad the Command Pilot and Dick Gordon the Pilot for the Gemini 11 mission. They are now seated in the spacecraft and the White Room crewmen will proceed to help tie them into the countdown and tie them into the system and now to become an integral part of the simultaneous countdown from here on down. We are at T-117 minutes 38 seconds and counting. This is Gemini Launch Control.

END OF TAPE

This is Gemini launch control T-115 and counting,T- 20 minutes and counting for the Atlas/Agena launch vehicle, the first of our dual launches on the Gemini 11 mission. At complex 14 all is still going well as we get closer in the terminal phases of the countdown for the Atlas/Agena launch. We have a report from the test conductor at complex 14 that auto pilot test which began about 20 minutes ago has been satisfactorily completed. Checks are now going on with the range safety destruct system of the launch vehicle at 14, the Atlas/Agena. This is a test between the launch vehicle and the Air Force Eastern test range, range safety equipment. It would be used in the event the Atlas/Agena flight would have to be terminated early because of some type of range safety problem. This test is in progress and appears to be going well at this time. Astronauts "Pete" Conrad and Dick Gordon getting seated in the cockpit of the Gemini 11 spacecraft as the crewmen in the white room go through the procedures of tying them into the spacecraft itself and of course tying them into the overall countdown. The pilots will not be able to view the Atlas/Agena liftoff because of their location in the spacecraft with the hatches closed. However by being part of the countdown they will get a thorough report of the progress of the final phases of the countdown and of course the power phase of flight of the Atlas/Agena. Now T-113 minutes and 32 seconds and counting. This is Gemini launch control.

END OF TAPE

This is Gemini Launch Control, T-110 minutes and counting. T-110 minutes and counting. T-15 minutes and counting for the Atlas Agena vehicle on complex 14. Astronauts Pete Conrad and Dick Gordon have just come in on the countdown. The spacecraft test conductor asked their status for the Atlas Agena launch and they both reported go. Our tests are continuing at complex 14 as we reach the final phases of the count and the reports are that the countdown is going very well there also. We're aiming for a liftoff of the Atlas Agena of 49 minutes past the hour. Following successful liftoff and insertion into orbit, the Gemini launch vehicle, spacecraft condonation, will be coming up for the liftoff about 97 minutes later, with a planned buildin hold at T-3 minute mark. All systems still going well in the white-room at complex 19 at this time and as the crewmen gear up to prepare to put their hatches over the Gemini spacecraft. All systems still looking good, T-108 minutes, 53 seconds and counting. This is Gemini Launch Control.

END OF TAPE

This is Gemini Launch Control T-105 minutes and counting in the overall Gemini countdown and 10 minutes and counting to the Atlas Agena launch. At Launch Complex 19 in the white room the hatches have just been closed on the Gemini spacecraft. Actually, we are just about 2 minutes ahead in the countdown at complex 19. The count is going very well. The hatches have been closed and astronauts Pete Conrad and Dick Gordon now tying into the countdown. The spacecraft will first be - first with a 100 percent oxygen, as far as the environmental control system is concerned and then we will start to get readouts in the blockhouse for some of the biomedical sensors to check out that they are operating properly. There also will be some communications checks between Astronaut C. C. Williams, Capsule Communicator in the blockhouse, who is designated Stoney and the two pilots in the spacecraft. At Launch Complex 14, the launch mission director, Merrit Preston has given a go to the test conductor for the Atlas Agena launch after checking all aspects of the launch operation, both at pad 14 and 19. All systems are go at this point, now some 9 minutes from the planned Atlas Agena lift-off. When we do get ignition of the Atlas Agena those three main engines at the base of the vehicle will ignite they will ignite shortly after the two small vernier engines ignite on the side of the Atlas, this is a total of five engines involved. The primary ones being the twin boosters and the main sustainer engine at the base of the vehicle. The vehicle will generate some 390 000 pounds of thrust and then we will get the release for lift-off. It should be at

48 minutes past the hour. The ignition sequence will start with the Atlas vehicle at about 4 seconds before zero culminating in full thrust and lift-off at zero mark in the count, which as reported, should be at 49 minutes past the hour. Now coming up on T-103 minutes, 8 minutes away from the Atlas Agena lift-off. This is Gemini Launch Control.

END OF TAPE

GEMINI 11 MISSION COMMENTARY, 9/12/66, 6:44 A.M. TAPE 22, PAGE 1

This is Gemini Launch Control, T-100 minutes and counting. T-100 and we are five minutes away from the planned Atlas/Agena lift-off. We have a clearance to launch as far as the range is concerned and the Agena second stage is now on internal power. The clock that will direct the burning of the Agena engine later in the powered flight already has started. This starts at about T-7 minutes. At Launch Complex 19, we are taking a close look at the command pilot's hatch at the present time. We are going to see whether we do have a problem or not, but the count is still going at this time. We are T-99 minutes 21 seconds and counting. This is Gemini Launch Control.

END OF TAPE

This is Gemini Launch Control, T-97 minutes, 5 seconds and holding. Just as the announcement started, we went into a hold. We're 2 minutes and 5 seconds away from the planned Atlas Agena liftoff. The hold was declared because of a problem with the command pilot's hatch at the whiteroom at launch complex 19. It appears to be concerned with the seal that helps close the hatch and helps to give us our pressurized condition in the spacecraft We opened it shortly - about 2 minutes ago- to take another look The hatch was reclosed, but it appears, we still have a difficulty. We are going to hold the Atlas Agena launch until we determine our status with the command pilot's hatch of the Gemini 11 spacecraft. The count now has been recycled to T-103 minutes. This brings us back to just the time before the Agena second stage goes on enternal power. We've taken the power off the batteries on the Agena and we are back on external at complex 14 at this time. This leaves us 8 minutes and holding as far as the Atlas Agena is concerned, as we take a closer look at the command pilot's hatch on the Gemini 11 spacecraft. T-103 and holding, this is Gemini Launch Control.

END OF TAPE

This is Gemini launch control T-103 minutes and counting and the overall simultaneous countdown and T-8 correction T-103 minutes and holding on the overall countdown, T-8 minutes and holding for the Atlas/Agena. Our problem is concerned with the command pilots' hatch of the Gemini 11 spacecraft. After the hatches were closed the crew in the white room goes through a series of leak checks around the spacecraft. They determine that they apparently had a slight leak on the command pilots' side. The hatch was re-opere d checks were made of the seal and the hatch was closed again. This came about 2 minutes before the planned Atlas/Agena liftoff as the countdown was continuing and the determination was made to hold the countdown to insure that that hatch would be okay for launch. The crew is still making the checks in the ahite room at this time and we are standing by for further reports on the command pilots' hatch. T-103 minutes and holding. This is Gemini launch control.

END OF TAPE

This is Gemini Launch Control. We are still at T-103 minutes and holding in the overall count. T-8 minutes and holding for the Atlas/Agena Launch Vehicle. The crewmen in the White Room at the 100 foot level at Launch Complex 19 still making close checks of the Command Pilot, that is Pete Conrad's hatch. After it was closed, they determined that there was a possible leak. They double checked the seal - that coating that's inside that connects with the hatch when it closes and are still continuing their checks now to verify that hatch for flight. We will not go ahead with the plan to launch the Atlas/Agena until we are assured that the Gemini spacecraft is also in a go condition. Still holding at this time. We recycled as reported earlier back to the 103 minute mark in the count so that we could go back on ground power with the batteries in the Agena second stage at this point. And when we do resume the countdown at 103 the Agena goes on internal power. We want to conserve that battery power so we recycle back to this point. Still T-8 minutes and holding for the Atlas/Agena launch as we make further checks of the Gemini spacecraft. This is Gemini Launch Control.

END OF TAPE

This is Gemini Launch Control. It's still at T-103 minutes and holding. T-8 minutes and holding as far as the Atlas Agena is concerned at pad 14. Ithas just been recommended and the determinations are made, that we are going to pick up the countdown shortly. Maybe, in about 30 or 40 seconds from this time. The spacecraft test conductor has reported that he will give us an exact status about 4 minutes from this time, so we do not have the complete readoff on that hatch yet but we plan to continue the count. It is expected and hoped that some 4 minutes after we picked up the count, we will get a go from the spacecraft and be able to continue down with the Atlas Agena countdown. We're going to pick up the countdown here shortly. 5 seconds from this time - T-103 and counting, T-8 minutes and counting for the Atlas Agena. The Agena second stage now is going back on internal power on the flight batteries there. The checks continue of the commands pilot, Pete Conrad's, hatch at complex 19 and we're looking for a report from the spacecraft test conductor about 3 or 4 minutes from this time. Now at T-102 minutes, 33 seconds and counting. This is Gemini Launch Control

END OF TAPE

This is Gemini Launch Control. Now 6 minutes 38 seconds away from the planned Atlas Agena Launch at complex 14. The Spacecraft Test Conductor, at 19 reports that we have a preliminary go for the Gemini spacecraft. This is after some checks of the command pilot's hatch which created the hold a matter of minutes ago. We are now counting and we appear to have a go for the Atlas launch. Complex 14, now that we have resumed count, their checkout appears to be going well. As reported, the Atlas - the Agena second stage now is on internal power. All systems looking good at this point. Now T-101 and 2 seconds and counting. T-6 minutes and counting at this point for the Atlas Agena launch. This is Gemini Launch Control.

END OF TAPE

This is Gemini launch control T-5 minutes and counting, T-5 for the Atlas/Agena launch and we are go for the Atlas/Agena. We are go both at launch complex 19 and 14. We have received another report on the status of that hatch and it is good. Our countdown is now proceeding. We are now at 4 minutes and 40 seconds and counting. This is Gemini launch control.

END OF TAPE

This is Gemini Launch Control, T-4 minutes and counting. T-4 for the Atlas Agena. All still going well. We're aiming for a liftoff time of five minutes past the hour. Five minutes past the hour. At this point in the countdown as reported, the Agena Second Stage is on internal power and coming down during the final phases of the count, we'll cover some of the highlights to you because they will come rather fast as the real time occurs. We're now at three minutes and 34 seconds away from the planned liftoff. The Agena destruct system will be on at the three minute mark. The liquid oxygen tanking will be secured at two minutes and ten seconds. That will give us a launch vehicle weighing some 267 000 pounds sitting at Launch Complex 14. We're now at three minutes and 15 seconds away from the launch. All still going well at this time. Further down in the count the ignition system is on for the Atlas, it goes on internal power at T-1 minute and 40 seconds. Now coming up on T-3 minutes mark. T-3 minutes and counting. T-3. As we continue further down in the count the automatic sequencer comes in at the 18 second mark of the Atlas countdown. From that point on down all is automatic and its climaxed by the ignition sequence starting at 4 seconds before liftoff, those two vernier engines will ignite on the side of the Atlas as soon as they reach proper pressure. This will have the sequence to follow through to ignite the twin boosters and the sustainer engine generating some 390 000 pounds of thrust. Now at 2 minutes 25 seconds away from the Atlas Agena liftoff. This is Gemini Launch Control.

END OF TAPE

This is Gemini Launch Control, T-2 minutes and counting. T-2 all still going well at this time. The liquid-oxygen vent has been closed and we are starting to pressurize the liquid-oxygen tanks in the Atlas vehicle. This is to bring them up to flight pressurization for the powered phase of flight. Now one minute and 42 seconds and counting. The Atlas launch vehicle now has gone on internal power at Complex 14, that is, on the flight batteries within the vehicle itself. It is completely on its own power at this point. From this point down, the Atlas test conductor will be watching a series of lights on his console - Ready Lights. We are now 1 minute 20 seconds away from the planned lift-off. These Ready Lights will turn from amber to green as the various events occur during these final phases of the count. T-1 minute 9 seconds and counting. Coming up on 1 minute, mark, T-1 minute and counting, T-1.. This is Gemini Launch Control, T-50 seconds and counting. The range ready light has come on - the range is giving a GO for launch. We still get - we are looking for a GO from range safety. The autopilot ready light now is on. T-40 seconds and counting. T-35 seconds and counting. During these final moments of the count all is still looking good. T-30 seconds and counting. T-25 seconds and counting as the Test Conductor monitors his console, he is getting his green lights. T-20, T-18 seconds and counting. We have the sequencer in. T-15, all still looking good. T-10, 9, 8, 7, 6, 5, 4, 3, 2, 1 - we have ignition.. lift-off. Ten seconds looks good. Flight Dynamics reports is still looks good at 25 seconds.

Range safety still "Green" at 35 seconds. One minute still looking good. Thrust building up 3000 feet per second now. Still looking good 1 minute 20 seconds. Atlas/Agena 10 miles high now, about 15 miles downrange. Plus 1 minute 42 seconds, still looking good. Velocity 5000 feet per second, building toward 6. Looks good for BECO, Booster Engine Cut Off. BECO, Booster Engine Cut Off, the two outboard booster engines have fallen away. Velocity is 10,000 feet per second now. Atlas/Agena driving on up with the sustainer engine. Still looking good, 50 miles high now, approaching 100 miles downrange. We marked lift-off time at 5 minutes 1 second past the hour. Coming up on 12,000 feet per second velocity now, 150 miles downrange, about 70 miles altitude. Still looking good, 3 minutes 30 seconds. Still getting good reports as we approach 200 miles downrange, 80 miles altitude. Velocity is building to 14,000 feet per second. Ground track looking good. 15,000 feet per second now still looking good. Coming up on SECO, Sustainer Engine Cut Off. SECO. 110 miles high now, 350 miles downrange. SECO looked good. Agena has separated from the Atlas. Agena will enter a short coast period now prior to the main engines start. Standing by to ignite the Secondary Propulsion System. SPS start. Provide ullage for the primary burn. Looking good. Agena's main engine has started. BPS burn looks good. Agena approaching 150 miles altitude now, 600 miles downrange, 18,000 feet per second velocity. Seven minutes, still looking good.

END OF TAPE

Still looking good, 7 minutes, 38 seconds approaching 20,000 feet per second velocity, 160 miles altitude, 800 miles down range. This Agena burn is looking good. Still looking good, approaching the 161 nautical mile mark now in altitude. Approaching 24,000 feet per second velocity. Just a few seconds away from this Agena burn. Coming up on the cutoff now... Mark PPS cutoff. Cutoff looked good. We have an orbit, we do not have the numbers on it yet. We're standing by for those. We do have an orbit with this Agena. The preliminary figures on this Agena orbit - 164 by 159 nautical miles. These are preliminary, will be refined later We'll now switch to the Cape.... This is Gemini Launch Control at the Cape on our Gemini Launch vehicle countdown. We're now at T-83 minutes 22 seconds and counting. Astronauts Pete Conrad and Dick Gordon were given a running report of the Atlas Agena's fine performance as they continue their checks in the Gemini 11 spacecraft. They've gone through a series of checks already that included purge of the spacecraft cabin. We've taken a closer look at that hatch. It was determined that it was go for the Atlas Agena launch and it is still go now. There was a slight leak when the hatch was first closed, however, leak checks showed about 3 or 4 minutes before the Atlas Agena liftoff, that all was well. We were able to continue the count at that time. We've made further checks since the liftoff and all looks well with the Gemini 11 spacecraft at this time. Coming up in just a couple of minutes will be a switch list check by both pilots of all the switches in

the Gemini 11 spacecraft - all the switches in the cockpit. They will check each one of them and insure that it is in the proper position for launch. Perticipating in this test will be the blockhouse crewmen, including the capsule communicator astronaut C.C. Williams. So all is going well back here at the Cape as we continue the Gemini Launch vehicle count. T-82 minutes 8 seconds and counting. This is Gemini Launch Control.

END OF TAPE

This is Mission Control Houston. We confirm shroud jettison from the Agena. The shroud has jettisoned from the Agena. This is Mission Control Houston.

END OF TAPE

This is Gemini launch control T-75 minutes 19 seconds and counting. All going well on the Gemini countdown at this point. Astronauts "Pete" Conrad and Dick Gordon aboard the Gemini 11 spacecraft going through their switchless checks. A check of all the switches in the cockpit to insure they are in the proper position for launch. During the powered phase of flight of the Atlas/Agena as reported earlier the two pilots were getting a running report on its performance. We had a little noise on the line as we attempted to listen to their conversations but they basically were remarking "very good"as they received continuing reports on the good progress of the flight. A short while ago "Pete" Conrad the command pilot made a request of the spacecraft test conductor, he's looking ahead a little bit, and he asked them for the liftoff time for the Gemini launch vehicle. He was told by the spacecraft test conductor that it looks like it will be about 42 minutes after the next hour, that is, here at the Cape 9:42 A.M. EST. It'll be 42 minutes plus a number of seconds and as the spacecraft test conductor pointed out we'll have to get word on the exact orbittal status of the Agena spacecraft in orbit from Houston Flight. This will come a little later in the countdown actually at the T-40 minute mark. We expect to get a good report on that and once we do get that we are able to plan our parimeters for this very precise rendezvous that we are attempting that will take place. As a result we will wait about 20 minutes or so before we get our exact timing on this and of course for the exact amount of time in the hold/that will be declared in the three minute mark in the count. So generally we are looking for 42 minutes after the next hour plus a number of seconds

for the Gemini launch vehicle liftoff. All still going well with the count at this time at 73 minutes 24 seconds and counting. This is Gemini launch control.

END OF TAPE

This is Gemini Launch Control, T-70 minutes and 1 second and counting. Now at T-70 minutes and counting. All going well with the Gemini countdown at Complex 19 at this time. The crew has cleared the White Room at the 100 foot level as we look forward some 10 minutes or so from this time to lower the erector at Launch Complex 19 leaving the Gemini Launch Vehicle spacecraft combination standing free. The Command Pilot Pete Conrad was just alerted a minute or so ago by the spacecraft test conductor that we will open the prevalves for the oxidizer system of the first stage of the Gemini Launch Vehicle. The astronauts are alerted on this because when these prevalves open they can actually feel it. They can feel a slight oscillation in the spacecraft and we alert them that this is going to happen. The reason we open the prevalves for the first stage oxidizer is to go through the so called POGO stand pipe test. This is where we actually charge a stand pipe associated with the oxidizer system in the first stage with nitrogen. This will help us to prevent a vibrations that could occur during flight as a result of the oxidizer flowing through to the thrust chamber. By charging the small stand pipe with nitrogen, this gives us little cushion if you will that the oxidizer can push against and this inturn prevents the oscillations that w we might get in flight. This is occuring at this time. All is going well with the countdown with 68 minutes 30 seconds and counting. This is Gemini Launch Control.

END OF TAPE

his is Mission Control Houston at 63 - T-63 minutes. We are at 32 minutes into the flight of the Agena now and it is down over Africa. Tracking station reports it looks good. We have checked the tracking network stations throughout the world and they all report that they are up and ready to support the Gemini launch. For a report on the progress of the count we will switch now to the Cape.

This is Gemini Launch Control at the Cape. All still going well here at Launch Complex 19 with our countdown. Just a matter of minutes ago, the GE/Burroughs guidance system, which had been used for the Atlas Agena launch to direct the Atlas Agena to direct the Agena craft into orbit now has come back to support the operation at Launch Complex 19. The same radio command guidance system is used with the Gemini launch vehicle during the flight. asically they changed some trays to put in the proper parameters for the Gemini launch vehicle and they are ready to go. They have done this fast turn around and they are ready to support the testing of the guidance system at Launch Complex 19. We have a report here in the Control Center, depending on the exact parameters of the Agena spacecraft, we will have a window in which to launch of some 2 to 5 seconds. Some 20 minutes from this time, when Houston Flight reports the exact status of the Agena, our computers will go to work and tell us the exact window we will have, based on the early data we have right now, it will be between 2 and 5 seconds. The nominal was 2 seconds. Of course, this can vary slightly depending upon the exact performance of that Agena stage and orbit. Next highlight in the countdown, coming up as far as the written count is concerned, about 6 minutes from this time will be the lowering that erector at Launch Complex 19 to leave the Gemini launch vehicle spacecraft standing free. It is due at 55 minutes in the countdown; expected to occur then

or perhaps just a little bit early because the countdown is going very well at this point. It is now T-60 minutes 48 seconds and counting. This is Gemini Launch Control.

END OF TAPE

This is Gemini Launch Control, T-57 minutes 16 seconds and counting. Just about 20 or 30 seconds ago, the crew began to lower that 138 foot erector at launch complex 19. The vehicle is starting to stand 3 at this time. The erector is lowered at the start by a 150 horsepower motor that powers a wench. It first is used to pull the erector back from the umbilical then as the erector gets over a little bit, the wench acts as a break, to ease it down and to insure that it is placed in it's proper position. All systems still going well in the countdown, as the erector comes down, it should take about 10 minutes. Now T-56 minutes 35 seconds and counting. This is Gemini Launch Control.

END OF TAPE

This is Mission Control Houston at 49 minutes, T-49 minutes and the Agena lifted off 46 minutes 6 seconds ago. Agena 11 is now down over the Indian Ocean just a short time ago past out of acquisition at Tananarive. All systems were go at that time. For a report on the count we'll go down to the Cape.

This is Gemini Launch Control at the Cape. All still going well here. At this point we have been alerted that we will probably have just two seconds in a window in order to conduct our launching of the Gemini Launch Vehicle spacecraft combination. However, we're still awaiting final parameters on the Agena. We'll get them after it passes the Carnarvon tracking station. We'll receive the final word from Houston Flight and run it through a computer and get our exact time. Basically what we're looking at now would be an ignition of the Gemini Launch Vehicle at 42 minutes and 22 seconds after the hour. This would mean that some 3 seconds later we would get the liftoff of the Gemini. To repeat again it looks like we'll have a two second window but we're going to await the final parameters after the Carnarvon pass in order to determine our exact situation. The erector is down at Complex 19. The Command Pilot Pete Conrad has been informed by the spacecraft test conductor that we've got a 12 000 foot ceiling with broken clouds. This is very satisfactory for the launching. This was the result of a weather check that occurred just a short time before the report was given to the spacecraft. At this point, Astronaut Dick Gordon will get into some readouts from the cockpit to the block house. It will concern temperatures, some of the propulsion

parameters and an overall report on the environmental control system within the spacecraft itself. All systems still looking good. T-47 minutes 5 seconds and counting. This is Gemini Launch Control.

END OF TAPE

This is Gemini launch control T-43 minutes and counting, T-43 as the Agena 11 approaches the Carnarvon tracking station as far as tracking is concerned. We're still doing very well with the countdown here at launch complex 19. In fact we are a few minutes ahead on several aspects of the spacecraft count. All is going very well. Astronaut Dick Gordon has completed his readouts to the block house. They all appear to be at the proper value. The astronauts are now participating in a program sequence test, this is concerned with a guidance system of the Gemini launch vehicle and of course the spacecraft computor which is used as a backup to the guidance system during the powered phase of flight. All systems still looking very good. We are aiming for liftoff at 42 minutes and some seconds to be designated after the hour. We'll get the final parimeters after this pass over the Carnarvon with the Agena 11. There will be a built-in hold at the the T-3 minute in the count. Once again pending the exact data on the Agena we will then announce the exact hold time. However, it will be in the area of 2 minutes and some seconds. We are now at T-41 minutes 42 seconds and counting. This is Gemini launch control.

END OF TAPE

This is Mission Control Houston at T-35 minutes. The Agena is over Carnarvon. After this Carnarvon pass we'll refine the telemetry we get there to come up with more precise orbital figures. The weather around the world in all the landing areas is looking good. They have partly cloudy weather but nothing to prevent a landing in any of the areas. During the Gemini liftoff this time, if communications are good, we will attempt to bring you the air-ground transmissions between the crew and the Cap Com during the launch phase. Also, during this Gemini 11 launch, shortly after insertion the spacecraft may do up to 3 axes translations. Former Gemini missions we've normally burned only velocity errors fore and aft. This time because we are attempting a first revolution rendezvous we will do some of the maneuvers that we have normally done in the second and third revolutions. These will include fore aft, up down, and if necessary we will correct the velocity vector at insertion to get parallel to the plane of the AGena if we should not launch directly into the plane. We will make a burn to get parallel to this plane and then about 29 minutes into the mission we will burn into the plane. For a report now from the Cape, we'll switch there.

This is Gemini Launch Control at the Cape. T-33 minutes 11 seconds and counting. All still going well. We're

still standing by to get the final word from Houston Flight on the orbital parameters of the Agena 11 so that we can determine the exact hold we'll have at T-3 minutes and the exact T-0 or ignition time for the Gemini Launch Vehicle, which will be some seconds after 42 minutes after the hour. With the Gemini Launch Vehicle at this point, the automatic sequencer has come in. It comes in at the T-35 minute mark and although it is not completely automatic all the way down, the sequencer does come in some 10 actions and monitors some 25 other functions down to the T-3 minute mark. From T-3 minutes down after we've resumed the countdown following the hold, the operation with the Launch Vehicle is completely automatic down to ignition and liftoff. On the Gemini 11 spacecraft atop the Launch Vehicle at this time work is still ahead of the designated times in the countdown and it is going very well. The two pilots' are gearing up now to prepare for propulsion test of the Gemini 11 spacecraft. These are those 8 - 25 pound thrusters, a part of the so called orbit attitude and maneuvering system which ring the base of the adapter of the Gemini spacecraft. We will follow these thrusters to work out the system and insure that they are in proper operating order for thelaunch. This should be coming up in a matter of several minutes from this time. The astronauts Pete Conrad and Dick Gordon are making their preparations in the spacecraft as are the crew in the block house. All systems still good at T-31 minutes 25 seconds and counting. This is Gemini Launch Control

END OF TAPE

This is Gemini Launch Control, T-22 minutes and counting. T-22, all going well at this point in the count. The back-up pilots, Astronauts Neil Armstrong and Bill Anders, now here in the Control Center, monitoring the remainder of the count. Earlier this morning they had spend some 4 to 4½ hours in the Gemini 11 cockpit making the preliminary checks before the prime crew came aboard. We now have our parameters from Houston Flight and it gives us the following numbers. We will have a hold at the T-3 minute mark in the count of 2 minutes and 20 seconds duration. We will be aiming for T-0 which is ignition for the Gemini Launch Vehicle at 42 minutes and 23 seconds after the hour. We should get lift-off three seconds thereafter or at 42 minutes 26 seconds. The latest orbital parameters we have for the Agena 11 are as follows: 156 by 166 nautical miles. To repeat, 156 by 166 nautical miles, this is termed an acceptable orbit for the Agena 11. At Launch Complex 19, at the present time, we just started the actual static tests of those thrusters of the Gemini spacecraft propulsion system. There are eight-25-pound thrusters at the base of the adapter of the Gemini 11 and the crew is now firing these thrusters to make sure that they will be operating properly for launch. We test them in the following sequence: yaw left, pitch down; yaw right, pitch up; and yaw left. These are the

variations that the thrusters can operate, some of the variations, and we are testing to insure that it is working properly. The test is just about to be completed, it appears to be going very satisfactorily as we watch the thrusters perform. We are now at T-20 minutes 2 seconds and counting. This is Gemini Launch Control.

END OF TAPE

This is Gemini Launch Control, T-14 minutes and counting. T-14.... All still proceding very well at this point for the Gemini 11 countdown. We had a report that the computer has given the update for the latest perimeters of the Agena 11 in orbit. We're going to go into a hold at the T-3 minute mark. The hold will be about 2 minutes and 20 seconds duration. We'll then resume the countdown, feed the latest update information to the launch vehicle guidance system and the Gemini spacecraft computer, which acts as a backup to the guidance system during the powered phase of flight and count on down, aiming for an ignition of the Gemini launch vehicle at 42 minutes and 23 seconds after the hour. We'll have a sequence then on the pad of about 3 seconds until we get release and those explosive bolts that hold the launch vehicle to the base of the pad, are activated and the launch vehicle lifts off. So to repeat, looking for an ignition at 42 minutes and 23 seconds after the hour with liftoff 3 seconds later. The Gemini Launch Vehicle test conductor has made his check of all the recovery forces that have been activated for this particular mission. They are report go. All the various aircraft and other recovery elements are in operation at this time and we are in a GO condition. We're now T-12 minutes 30 seconds and counting. This is Gemini Launch Control.

END OF TAPE

This is Gemini Launch Control T-9 minutes and counting. T-9, all still going well with our countdown at this point. The command pilot for the mission, Pete Conrad, just asked for the right time and he was given it. The command pilot wanted make sure that all the clocks in the spacecraft were synchronized properly and the spacecraft space test conductor counted down to given him synchronization time to get the clocks all squared away in the spacecraft. This has been accomplished and we are proceeding. Just a matter of minutes ago we completed one of the key test with the radio command guidance system. This is where the guidance system did generate signals that were sent to the launch vehicle and those two engines at the base of the Gemini launch vehicle responded to the commands by swiveling or gimbaling as it is called. These engines will do the same maneuvers in space to keep us on the proper trajectory working on signals from the guidance system of the launch vehicle itself. All systems still looking good as we come up on T-8 minutes and counting. This is Gemini Launch Control.

END OF TAPE

GEMINI 11 MISSION COMMENTARY 9/12/66 8:34 am TAPE 43 PAGE 1

This is Gemini launch control T-6 minutes and counting, T-6 all still going well with the countdown. Three minutes from this time we will go into a planned built-in hold. That hold time has now been refined to an exact 2 minutes and 21 seconds. Following that hold time we will resume the countdown aiming toward an ignition of the Gemini launch vehicle at 42 minutes and 23 seconds after the hour. Three seconds thereafter we should get the liftoff. That is the sequence between ignition and liftoff. We get the ignition of the Gemini launch vehicle at zero in the countdown. At launch complex 19 we have gone through a very thorough status check just moments ago both of the key participants with the Gemini launch vehicle and the spacecraft. All systems including the two pilots in the spacecraft reported they are go. This was confirmed by Launch Mission Director Merrit Preston and Gemini 11 Mission Director Bill Schneider who is at Mission Control in Houston. Coming up on T-5 minutes at this point, T-5 minutes and counting. This is Gemini launch control.

END OF TAPE

This is Gemini Launch Control, T-3 minutes and holding. T-3 minutes and holding. This duration of the hold will be about 2 minutes and 21 seconds. We will then resume our countdown aiming toward the planned ignition time of the Gemini Launch Vehicle of 42 minutes and 23 seconds after the hour. When we do resume our countdown we will bring aboard the final parameters through the Gemini Launch Vehicle guidance system and the Gemini 11 spacecraft computer. This is the data that is required for this key first orbit rendezvous on the Gemini 11 mission. Now at T-3 minutes and holding. This is Gemini Launch Control.

END OF TAPE

This is Gemini Launch Control, MARK. We have resumed our countdown now at T-2 minutes 56 seconds and counting. Coming up on T-2 minutes and 50 seconds and counting. As we just come out of the hold all situations still looking good. We're completely automatic as far as the sequencer is concerned with the Gemini Launch Vehicle. We have received confirmation that the Launch Vehicle and the spacecraft computer have received the proper parameters for the flight. Confirmation just came through, we've coming up on T-2 minutes 30 seconds and counting. We have a GO from the range at this point, the supervisor range operations that we are clear to launch. As we get down here in the final moments of the countdown we'll open the various prevalves that permit the fuel and the oxidizer to come down toward the thrust chamber in the first stage. There is one valve left and that is a thrust chamber valve which will open when we reach zero in the countdown to permit the fuel and ozidizer to ignite. Now coming up on T-2 minutes. MARK, T-2 minutes and counting. T-2. We continue to check in the block house to make sure that all - we are getting the proper readouts. T-1 minute 50 seconds and counting. Still going well at this point. We'll be coming up on the important power transfer in about 10 seconds or so. This is when we go on internal power in the Gemini Launch Vehicle. The Gemini spacecraft went into internal about 10 minutes earlier completely on internal power. MARK, T-90 seconds and counting. T-90. We are still

looking good during the final phases of the Gemini countdown at this point. We have confirmation that we are now on internal power with the Gemini Launch Vehicle. Now at T-1 minute 15 seconds and counting. We've made a final check of those engines, those two engines at the base of the Gemini Launch Vehicle. We have swiveled them once again in response to the guidance system and they have shown that they are working properly at this time. Coming up on T-60 seconds, MARK. T-60 seconds and counting. Coming down the final phases now we will start to open those prevalves to permit the fuel and oxidizer to come down to the chamber. T-50 seconds and counting. All still going well at this point. Not to many reports from the block house now as they continue to monitor. T-40 seconds and counting,,still looking good at this time. T-35. As we continue down we'll get ignition at zero. T-30 seconds and counting. We'll get ignition at zero with the Gemini Launch Vehicle. At some 2.8 seconds we'll take a close look,when we get up to 77 percent thrust there'll be another 2/10 of a second to release those explosive bolts. T-15 seconds and counting. T-10, 9, 8, 7, 6, 5, 4, 3, 2, 1, zero. We have ignition.

Liftoff, clock is running. Roll program, looking good. Roll program complete. Pitch has started. We are GO two miles high approximately two miles downrange. Data looks good. Approaching six miles altitude, four miles downrange. Liftoff time, 42 minutes 27 seconds after the hour.

HOU one plus forty, MARK.

S/C Roger, Mode 2.

HOU Roger, DCS.

Guidance update has just gone up to the spacecraft. Flight Director is polling his controller for a staging status.

HOU You are go for staging.

S/C 11 is GO.

Twenty-eight miles altitude.

S/C (garbled)

HOU Roger, DCS.

S/C (garbled) and engine ignition.

HOU Roger, staging engine ignition.

S/C Guidance initiate (garbled)

HOU Houston, Roger.

Looking good, second stage guidance has initiated. We're 50 miles high now and approaching the 120 miles downrange.

HOU 11, Houston. Your steering looks good.

S/C Gemini 11, Roger.

We are right down the middle, Flight Dynamics says. Approaching 70 miles altitude, 200 miles downrange. Ground track looking good. Flight Director taking a status check for SECO.

HOU Gemini 11, this is Houston. You are GO, over.

S/C Roger, 11 is go here.RCS is right on the money.

HOU We confirm that.

Eighty miles high now, 280 miles downrange. We'll be coming up on point 8 shortly. That point at which 80 percent of required thrust is achieved. Looking good.

HOU Standby for point 8.

S/C Roger, point 8.

HOU MARK, point 8.

S/C Roger, MARK point 8.

We have 80 percent of thrust now and building on up. We have SECO.

S/C Gemini 11, advise SECO

HOU Roger, Gemini 11 you're GO for M=1.

S/C Roger.

ANT Antigua AOS.

HOU R dot desired is plus one. Over.

Gemini 11, R dot desired, plus one.

S/C Roger, plus one. The IVI's must be separated for 39, one less zero up and down.

This R dot refers to the radius rate, the up down burn.

END OF TAPE

.....Telemetry shows the spacecraft still burning.

S/C .....00085.....15 seconds down.

HOU Roger.

HOU Gemini 11, Houston. Your liftoff was one half second late.

S/C Gemini 11, roger. The burn was complete. Start to align the platform.

HOU Roger. Fairings jettison, over.

S/C Say again.

HOU Fairings jettison, over.

S/C Fairings is jettisoned.....

HOU Gemini 11, Houston. One minute to LOS.

This is Gemini Control, 12 minutes into this flight. We have had loss of signal at Antigua now. Out of range. Flight Surgeon reports that the heart rates during launch on the command pilot, 170. On the pilot, 140. We will stand by now; when the Gemini 11 reaches Ascension, we will give them a backup figure for the plane change burn and we will also take some more figures on their orbit at that time. This is Gemini Control.

END OF TAPE

This is Gemini control 19 minutes into the flight. Preliminary look at this orbit indicates that we did achieve very close to what we were looking for. However, the Flight Dynamics Officer wants to take a look at the spacecraft over the Ascension station before coming up with any definite figures. However, he says it does look good. This is Gemini control.

END OF TAPE

This is Gemini control 22 minutes into the flight. Gemini 11 is in contact with the Ascension Island station. We'll play back this conversation from the start now.

HOU Gemini 11 this is Houston over.

S/C (garbled)

HOU Roger, this is Houston, you're in an 87 by 151 orbit, over.

S/C 87 by one five one sounds perfect.

HOU Roger and we won't have a plane change for you because we don't trust this data we've got. over.

S/C Roger, no plane change, but we're figuring garbled...3 feet to the left, over.

HOU Roger, copy.

S/C (Garbled) plane change

HOU That is affirmative, over.

S/C He said affirmative.

Gemini 11 Houston one minute to LOS.

END OF TAPE

This is Gemini Control, 31 minutes into the flight. Gemini 11 will acquire at Tananarive in a couple of minutes. Pete Conrad and Dick Gordon should have burned a 3 fps left plane change maneuver. At 29 minutes 16 seconds, that maneuver was computed onboard, and we expect that they have burned that. At Tananarive, we will give them a backup calculation for their terminal phase maneuver. We'll stand by now for the pass at Tananarive. This is Gemini Control.

END OF TAPE

This is Gemini Control, 36 minutes into the flight. Gemini 11 is in contact with Tananarive. Reports they can see the Agena. We will start this tape from the beginning of this pass now.

	Tananarive , go remote.
TAN	Tananarive
HOU	Gemini 11, this is Houston, over. . . Gemini 11, this is Houston, over.
S/C	Go ahead Houston, read you loud and clear, be advised, we're inside of 50 miles and we have the Agena in sight.
HOU	Roger, your GETB, for the terminal phase backup is as follows, over.
S/C	Standby one minute. Okay we're ready to copy.
HOU	Roger. Your GETB is 49+43, address 25 01 396, address 26 00 170, address 27 900 66, XRA is +18.9, YRA is -8.6, range is 22.7 miles and range rate is 107 fps closing, over.
S/C	Okay, 11 (garbled)
HOU	Roger.
S/C	23.2 degrees, 47. (?) degrees. burn rate 387. Now we have a visual on the Agena of about 75 miles and our voice rate and radar voice rate reading is ½ a degree in both pitch and yaw.
HOU	Roger. Gemini 11, Houston. Remember your

HOU radiator. Over.

S/C Roger, we are going to flow and - right now.

HOU Roger.

S/C This is Gemini 11. We are (garbled) ...7 miles. This Gemini Control. Gemini 11 just reported a range of 34.7 miles from the Agena. (PAUSE)

HOU Gemini 11, 1 minute until LOS.

S/C Roger, ...we have the flashing light.

HOU Roger.

This is Gemini Control 42 minutes into the flight. Gemini 11 is out of acquisition of the Tananarive station now. The YRA and XRA numbers you heard John Young pass up to Gemini 11 in the backup TPI information, YRA is the distance below; XRA is the distance behind Agena at TPI, we were looking for 10 miles below, 50 miles behind. We calculate now that at TPI the distance below will be 8.6, distance behind will be 18.9. These are backup figures computed on the ground. The crew use onboard figures, however. This is Gemini Control.

END OF TAPE

This is Gemini Control 52 minutes into the flight. Gemini 11 has just performed the terminal phase maneuver over Carnarvon and just put in a call to the Carnarvon Cap Com. We'll listen to that pass now.

CRO Carnarvon has AOS.

HOU Roger.

CRO Mark 50 seconds.

HOU Roger.

CRO C-band track.

HOU Roger.

HOU What have you got on O_2 pressure?

CRO Zero, zero on the meter.

CRO All systems look good, Flight.

HOU Roger.

CRO I've got coder lock.

S/C .....Gemini 11, over.

CRO Go ahead, 11.

S/C We're burning right now.....140 forward, 27 down, 5 left.....forward, 22 down, 4 left, over.

HOU Say again first.

S/C Roger, bank left.

CRO Flight, did you copy?

CRO Flight, Carnarvon.

HOU Right, Carnarvon.

CRO Did you copy that?

HOU Negative.

CRO I only got part of it. The air-to-ground is real noisy. I'll wait till after the burn and I'll get it from him.

HOU Roger.

S/C DCS O_2 is about 40.....manual.

CRO Roger.

S/C Gemini 11,..... All orb rate compensations.

CRO Roger. Do you copy, Flight?

HOU Negative, say again.

CRO He's taken off orb rate compensations....

S/C Gemini 11.....complete.

CRO Roger.

CRO Gemini 11, Carnarvon.

S/C Go.

CRO Those readouts you gave us, the air-to-ground was real noisy. Could you say again, please?

S/C Roger.....140 forward, 27 down, 5 left. Back-up solution, 140 forward, ...2 down, 4 left.

CRO Roger.

HOU Carnarvon from Flight.

CRO Go ahead, Flight.

HOU Did I copy he was bumping up the O_2 pressure?

CRO That's affirmative.

HOU Roger. Send us a main Gemini, please.

CRO Roger.

CRO 11, Carnarvon.

S/C Go ahead.

CRO Your radiator's go and we're giving you a go for 16-1.

S/C Roger. We're go here, Bill.

CRO They're looking good, Flight.

HOU Roger. He did say he taking orb rate....

S/C .....is .70 percent right now. I expect that it'll come up a couple of percents after the long burn.

CRO Roger.

S/C Carnarvon, give us a call one minute from LOS and remind us that we've got our ECS O_2 heater on manual. We're running in manual.

CRO Roger.

HOU Carnarvon Cap Com, Houston Flight.

CRO Go ahead, Flight.

HOU Bill, he did say he was taking out orb rate compensations?

CRO That's affirmative.

HOU Rog. What did you copy for the PQI readings?

CRO I read 140 forward, 27 down....

HOU No, no, no. The PQI readings. 70 or 76?

CRO 70 percent.

HOU Roger.

CRO And the pressure is coming up in the O_2.

HOU Roger.

HOU Carnarvon from Flight.

CRO Go ahead.

HOU Send us a Gemini main when he turns the heater off and you're about one minute to LOS.

CRO Roger.

CRO 11, Carnarvon.

S/C Go ahead, Carnarvon.

CRO Go ahead and turn the heater off. One minute to LOS.

S/C Okay, we're still a little low but we'll go ahead and turn it off.

CRO Carnarvon has LOS on Gemini.

This is Gemini Control, 58 minutes into the flight. The last data point we got at Carnarvon showed a range of 15.2 nautical miles between Gemini 11 and its Agena. You may have had some difficulty hearing the delta V of that terminal phase maneuver. It was 141 feet per second. 141 feet per second, terminal phase maneuver. This is Gemini Control.

END OF TAPE

This is Gemini Control, 1 hour and 11 minutes into the flight. Gemini 11 is just coming up on acquisition at Canton. We may have a very brief acquisition there before going into Hawaii. They were about 3-1/2 minutes away from Hawaii acquisition. To recap a little bit, following the insertion maneuvers, Gemini 11 performed a 3 foot per second plane change to the left at 29 minutes 16 seconds. The next burn was the terminal phase initiation maneuver at 49 minutes 43 seconds. This was 141 feet per second. Preliminary indications are that at the end of that burn Gemini 11 had 752 pounds of fuel remaining. These are preliminary figures. We expect the terminal phase finalization burn, the braking maneuver at about 1 hour 20 minutes 53 seconds into this flight. Gemini 11 should be very close to the Agena as we approach Hawaii and we'll standby and bring you that pass as soon as we have acquisition. This is Gemini Control, 1 hour 12 minutes into the flight.

END OF TAPE

This is Gemini Control, 1 hour 15 minutes into the flight. There was no conversation at Canton. We are in acquisition at Hawaii now but to date no conversation yet between the crew and the Cap Com. We'll standby to bring you any air to ground tansmissions from Hawaii, should acquire very shortly.

HOU Hawaii, from Flight.

HAW Right

Hou Tell him your standing by, we missed him at Canton.

HAW Roger.

Gemini 11, Hawaii standing by.

S/C Ok, Hawaii. We're at 15 000 feet, roughly 50 feet a second and I have the running lights in sight and I have (garbled) lights.

HOU Copy that.

HAW Showing about 780 on O_2 tank pressure.

HOU Roger.

S/C Hawaii we're on clocks, at this time you can listen.

HAW Roger, copy.

S/C About 42 feet a second.

HAW Thank You.

GORDON Hey, I've got to fly her down a mite.

CONRAD I suppose so.

GORDON Garbled

CONRAD I suppose so.

GORDON I believe I'll go ahead and bnake a little bit.

CONRAD Zero, point 3 miles.

GORDON Which give you second

CONRAD Point 4 miles

We got a range reading for you here.

Okay, he's droping down on me.

Do you expect to be in with that quadrant?

GORDON Yes. (garbled) shows down and running, 39 feet a second.

CONRAD Okay, back off a little bit.

GORDON Point 9, 6000 feet, 6000 feet point nine. A point a mile.

CONRAD Okay. Looks like I've got the rates stopped (garbled)

GORDON Point 98 miles,

CONRAD I'm getting an intermittent firing on that down thruster.

GORDON Seems to be, I guess.

12-4 , 44 feet per second

CONRAD Okay, I've got it go ahead and brake through

GORDON Brake through

CONRAD Brake it right down to 25.

GORDON Okay. Point 8 miles, 4800 feet.

CONRAD Think he is bright.

GORDON He sure is, isn't he.

CONRAD Fantastic

GORDON Those thrusters are popping.

CONRAD Yes. (garbled) oxygen is okay.

GORDON For awhile. Three quarters of a mile, 4500 feet

CONRAD What?

GORDON Three quarters of a mile.

CONRAD Yes. (garbled)

GORDON Their down to 40 feet.

CONRAD May I have one?

GORDON Here , here is mine.

CONRAD Never mind, never get them in the helmet.

GORDON Okay.

CONRAD (garbled)

GORDON Okay, point 6 miles

CONRAD Okay, better slow down a little bit.

GORDON Let me give you a range rate.

CONRAD What?

GORDON I'm going to give you a reading.

Boy is that bright.

CONRAD Yes.

GORDON 25 feet a second.

CONRAD Hey I want to slow down a little bit.

GORDON You are out in front of him just a little bit.

Looks good.

CONRAD Hey let me know when we hit a half mile.

GORDON Yes sir.

Point 5 and you're half mile right now.

CONRAD Looks good.

GORDON 30 000 feet.

CONRAD Now he looks better.

Okay, I got 13 feet a second, I got 19 feet per second - 19.

GORDON Hey, I'm going to slow it some more.

CONRAD Okay, point 4 miles, 2400 feet, 38

Okay point 37

GORDON What is the range rate?

CONRAD Zero miles , ...

GORDON (garbled)

CONRAD We have to get it, we're quite a ways out

GORDON Okay.

CONRAD Repeat (garbled)

GORDON (garbled) take off nine.

25 - 1500 feet

CONRAD Okay, put the (garbled) ready.

GORDON Standby.

CONRAD That is about the brightest thing I've ever seen. 16 feet a second,

5 feet a second.

GORDON She's (garbled) now.

CONRAD I'm going to hit him. I show a thousand feet.

Okay, I've got point 18, up 7.

GORDON Not quite a thousand here at 16.

Okay, 15 - 900 feet.

CONRAD I got them with the burn here.

GORDON Roger. (garbled) is all I've got.

CONRAD That's okay, its steady. Check the range.

GORDON At 14 you're not (garbled)

This is Gemini Control, 1 hour 24 minutes into the flight. We have LOS at Hawaii. You heard onboard conversations between Pete Conrad and Dick Gordon during this pass, As they performed the braking maneuver in this rendezvous. We'll be acquiring at the California station very shortly. We'll remote from there to Houston and we'll standby for the air ground conversation from the stateside pass.

END OF TAPE

This is Gemini Control. We are in acquisition at California and we will pick up that conversation.

S/C 240...Hawaii, we are here.

HOU Gemini 11, this is Houston at California, standing by.

S/C No MAPS... no MAPS.
We are not getting any MAPS back from the Agena. We tried to send a command to it earlier. We lost our radar (keying) ... angle on our rates are up and we never could ... the antenna. So we are not getting (keying)...(garbled) Get down here where I can see it. (garbled) Okay, ... angle now. (garbled)

HOU Gemini 11, Houston, did you get the Acq lights off? Over.

S/C No, we haven't turned them off yet. We will do that afterwards.

HOU Roger.

S/C (garbled) Okay, we are not getting MAPS, but the Acq lights did go off.

HOU Roger, understand. No MAPS, but the Acq lights went off.

S/C Roger, no MAPS, but the Acq lights went off.

S/C ...radar. Yes...where is the sun? Can you tell me where sun.....(garbled) We have nothing on the radar. ...get away from it. (Garbled) Still 180 feet ...

HOU Guaymas remote, California local.

GYM Guaymas remote.

S/C ....what is your range rate? (Garbled) It is 120 feet right now. You didn't find that spot meter did you? No. (Garbled)....Yes. ....fuel. Houston, Gemini 11.

HOU This is Houston, go.

S/C We are station keeping at...

HOU Roger.

S/C (Garbled) What? ..... very nicely done. Thank you. (Garbled) Yes. ....Houston did you read that? Houston? Hawaii? (Garbled) Houston, Gemini 11.

HOU Roger, this Houston, go.

S/C Roger, TPI ..reads...

HOU This is Houston, Roger. Could you go on VOX? You are pretty hard to read. Over.

S/C (Garbled)

HOU Could you put the mike away from your mouth a little?

S/C How do you read us now, Houston?

HOU I read you loud and clear, Pete.

S/C How do you read me now John?

HOU Much better.

S/C Okay, we are station keeping, looking at the

S/C TDA. And... is six five percent.

HOU Roger, outstanding.

S/C ... would you believe M=1?

HOU Beautiful.

S/C John, tell Mr. Kraft, would he believe M=1?

HOU Roger. He believes it. Over.

S/C Say again.

HOU He believes it.

S/C How about that. We go for docking.

HOU Roger, could you send 050 beacons off and 010 S-band on before you dock? Over.

S/C You want .. and what else do you want?

HOU 050 beacons off and then 010 S-band beacons on.

S/C John, I sent them, but I don't get any MAP from it. Could you check it?

HOU Roger. It is okay and you are go for docking. Over.

Texas remote, Guaymas local.

TEX Texas remote.

S/C Houston, this is Gemini 11. .. turn the recorder...

HOU Roger, you can turn the recorder off. Over.

S/C (Garbled) John, we are going to go ahead and dock at this time.

HOU Roger, you are go for docking.

S/C We are docked...lights on.

Okay, postdocking checklist complete, main red off, main green on. Secondary... is on. Secondary ... on. .... power is off (garbled) over.

HOU This is Houston, roger.

HOU Texas local.

TEX Texas local.

S/C ... 11.

END OF TAPE

S/C This is Gemini 11.

HOU Go ahead.

S/C Roger, we had some sort of a funny during the rendezvous, where we couldn't switch the antennas and on our third correction we had no azimuth or elevation. We still had our range and range rates but we did make the third correction based on Dick's backup. We're apparently getting maps now. This last one we just sent we got them in.

HOU This is Houston, roger.

S/C Houston, this is 11. I'm going to send the engine stop to armed and check the hardline connection, over.

HOU Houston, go ahead.

S/C All systems satisfactory, and our docked PQI reading is 55 percent.

HOU Houston, roger. That's just great, Pete.

S/C Thank you.

S/C ..CS update.

HOU Roger, that's a TX, over.

S/C TTX.

HOU Gemini 11, Houston. Check your O_2 pressure, over.

S/C Roger, we just turned the manual heater on.

This is Gemini Control, one hour, 40 minutes into the flight. We're still seven minutes and 4 seconds away from loss of signal at Antigua and we're continuing to stand by for air-ground transmissions during this pass. This is Gemini Control.

HOU	Gemini 11, Houston. Over.
S/C	Go ahead Houston.
HOU	Roger, we cleared to turn the encoder off to get a tape dump, over.
S/C	Roger, encoder off.
HOU	Roger.
S/C	We're gyrocompassing right at this time.
HOU	Houston. Roger.
S/C	Houston, Gemini 11.
HOU	Go ahead.
S/C	Roger.....propulsion on at this time.
HOU	Roger.
S/C	We're going to reentry command at this time. Telemetry going to command at this time, Houston.
HOU	Say again, over.
S/C	Cutoff.
HOU	Houston, roger.
GBI	LOS GBI.

This is Gemini Control, one hour, 43 minutes into the flight. Gemini 11 is gyrocompassing the Agena and Gemini around to TDA south. That means that the crew will be looking

north at the completion of this gyrocompassing maneuver. The time on the docking one hour, 34 minutes, 18 seconds elapsed time and after docking, 56 percent fuel remaining. That's Gemini OAMS fuel. 56 percent remaining of the total of 904 pounds at liftoff. This is Gemini Control, one hour and 44 minutes into the flight.

HOU Gemini 11, Houston. Can you send 001 to get the C-band beacon back on, over?

S/C Do you want 001 sent?

HOU That's affirm.

END OF TAPE

HOU Gemini 11, Houston. We're not going to dump that tape. You can turn the encoder back on.

S/C Encoder back on.

HOU Gemini 11, this is Houston. Is your Apollo camera still going, over?

S/C No. We turned it off after docking.

HOU Roger.

GTI LOS Grand Turk.

HOU Gemini 11, Houston. Over.

Gemini 11, Houston. Over.

Gemini 11, Houston. Over.

Gemini 11, Houston. Over.

Gemini 11, Gemini 11, Houston. Over.

Gemini 11, over.

S/C Roger, this is 11.

HOU Roger. Could you turn your manual heater off? Over.

S/C Heater's just been turned off.

HOU Roger. Would you confirm that your encoder was never off during that pass. Over.

S/C Affirmative. It was never off.

HOU Roger, thank you. Two seconds to LOS.

This is Gemini Control, one hour, 48 minutes into the flight. We've had loss of signal at Antigua. We have a report from the tracking station at Hawaii of a visual sighting of the Agena, the Gemini 11 spacecraft and the second stage of

the Gemini launch vehicle as they passed over that station.

This is Gemini Control.

END OF TAPE

This is Gemini Control 1 hour 54 minutes into the flight. And Gemini 11 is in contact with Ascension. We will stand by for any conversation during this pass.

ASC Ascension AOS.

S/C Hello Ascension, Gemini 11.

HOU Gemini 11, this is Houston at Ascension, over.

S/C (Garbled)

HOU Roger, you are nominal.

S/C Roger, will you send up the...?

HOU Roger. Did you find that spot meter? Over.

S/C If we ever bother to pick it out, we will find it.

HOU Roger.

S/C Houston, 11.

HOU Houston, go.

S/C (Garbled)

HOU Understand, D3 complete, over.

S/C Say again. Say again, Houston.

HOU Roger, understand D3 complete. Over.

S/C That is affirmative.

HOU Roger.

This is Gemini Control 1 hour 57 minutes D3 is the mass determination experiment which attempting to determine the mass of the Agena by thrusting against it with the spacecraft and reading

out some numbers on the computer. This is Gemini Control. We still have about 3 and a half minutes left in the Ascension pass. We will continue to stand by for any transmissions.

HOU Gemini 11, Houston. Over.

S/C Go ahead, Houston.

HOU We have a nodal update for you, if you have time to copy? Over.

S/C Wait one second and I will be with you. Go ahead, we are ready to copy.

HOU Roger, nodal update, 02 plus 37 plus 31 for rev 2 136.1 degrees east, 1 hour 49 minutes right Ascension.

S/C Roger. Would say again....?

HOU Roger, it is 136.1 degrees east and 1 hour and 49 minutes right Ascension.

S/C Roger. ...

END OF TAPE

This is Gemini Control, two hours, 10 minutes into the flight and we're just about to acquire Gemini 11 at the Tananarive station. At the time we acquire Gemini 11 should be undocked or in the process of undocking from the Agena in order to perform the S-26, Ion-Wake Measurement Experiment. In this experiment ion detectors located aboard the Agena will be used in an attempt to measure the wake of the spacecraft as it is maneuvered in the vicinity. It is believed that orbiting spacecraft makes a wake through ions just as a boat does through water and this experiment will measure and determine this. S-26 will be continued throughout the Carnarvon pass also which follows the Tananarive pass. We'll stand by through the Tananarive pass for any voice conversations from the crew. This is Gemini Control.

Tananarive remote.

TAN Tananarive remote.

HOU Gemini 11, Houston at Tananarive, standing by.

S/C Roger. Be advised we've undocked and we're just commencing S-26 at this time.

HOU This is Houston, roger.

HOU Gemini 11, Houston. One minute to LOS.

This is Gemini Control, two hours, 17 minutes into the mission. We've had loss of signal at Tananarive now. The Flight Surgeons here in the control center, Drs. Berry and D. Owen Coons report that the heart rates on the pilots during the rendezvous and docking sequence; Pete Conrad, the

Command Pilot, averaged around 120 and Dick Gordon, the Pilot, 110. This is Gemini Control.

END OF TAPE

This is Gemini Control 2 hours 26 minutes into the flight. Gemini 11 just acquired at the Carnarvon, Australia station. Still in the process of the S-26 Ion-Wake Measurement Experiment. Has completed one portion of it and is now proceeding to the second portion. We will pick up the conversation at the start of this pass now.

CRO Go ahead, Carnarvon.

S/C Go ahead Carnarvon.

CRO Would you place quantity read to ECS02?

S/C Roger, ECS02. (Garbled)

CRO Roger.

S/C Say hello to everybody down there for me.

CRO Sure will.

Will you go to H2?

S/C Roger, go to H2.

CRO Go ahead and start the purge.

S/C Roger, we are ready to start.

CRO Go ahead.

HOU Carnarvon, Com Flight.

CRO Go ahead Com Flight.

HOU That is okay, we will dump it over Hawaii.

How is the purge going?

CRO He has just started the purge.

HOU Okay.

CRO He is purging H2, section 2.

HOU Hello Carnarvon.

CRO Go ahead.

HOU Stand by and we will transmit TX.

CRO Roger, stand by.

HOU Carnarvon, Com Flight.

CRO Go ahead Flight.

HOU Better check that O_2..

CRO Roger, go ahead, Flight.

HOU Better check that O_2 pressure.

CRO Quantity meter is setting about 6 30.

HOU Did you say 6 9 zero, Carnarvon?

CRO 630.

HOU Roger. Carnarvon, Com Flight.

CRO Go ahead.

HOU Give us a Gemini main.

CRO Roger.

HOU Can you tell if his manual heater is on?

CRO That is affirmative. It is on.

HOU Roger.

CRO One minute until LOS.

S/C Roger...

HOU Roger.

CRO That O_2 is up to 660 now, Flight.

HOU Roger.

This is Gemini Control 2 hours 32 minutes into the flight. And we are out of acquisition at Carnarvon now. The next station to acquire will be Hawaii at about 2 hours 51 minutes elapsed time. This is Gemini Control.

END OF TAPE

This is Gemini Control, 2 hours 37 minutes into the flight. Gemini 11 is passing off the coast of New Guiena on the nightside of its second revolution. Pete Conrad and Dick Gordon still performing the S-26 maneuver at this time. Out of range of any tracking stations, the next station to acquire will be Hawaii, in about 12-1/2 minutes. This is Gemini Control.

END OF TAPE

This is Gemini Control, 2 hours 50 minutes into the flight. Gemini 11 due to acquire at Hawaii any second now. Pete Conrad and Dick Gordon scheduled to still be performing the S-26, Ion-Wake Measurement experiment during this pass. We'll bring you th conversation, air to ground conversation from the beginning of this pass now.

S/C We are ready to dump the tape. We have S-26 mode D sequence 1 in - excuse me 2 and 3.

HAW Roger.

S/C Okay, it's S-26 Mode D sequence 1 and sequence 2.

HAW Okay, copy that. Confirm that your encoder is off.

S/C Encoder off.

HAW Roger, we'll get tape dump.

HOU Hawaii from Flight.

HAW Go ahead Flight.

HOU Both vehicles GO.

HAW Roger both vehicles are GO. We've got 780 on O_2 pressure.

HOU Roger. Are you getting a tape dump?

HAW That is affirmative.

HOU Hawaii.....main

HAW Roger

HAW Eleven, Hawaii, we're sending TS.

S/C Okay. Standing by.

HOU Hawaii from Flight.

HAW Go ahead.

HOU Did we get a PQI?

HAW Negative I didn't get it. Do you want one?

HOU Say again.

HAW Do you want a PQI?

HOU Affirmative.

HAW Roger.

Eleven, Hawaii. Will you give me a propellant quantity readout please?

S/C Roger. Propellant quantity is - it's about 49 for the - 50 percent something like that, 49 aft.

HAW Copy.

S/C We're getting more efficient as we go along here.

HAW Yes, I notice that. How is our weather over Hawaii.

S/C We're in the BEF mode aligning the platform right now. There is a great deal of cloud cover there over the Pacific. I see a rather large cloud cover to my left which would be to our south, maybe it's one of those Francesca or Gretchen or somebody.

HAW Okay.

S/C Let us know when you get the tape dump. We'd like to press on with the S-26.

HAW Roger, will do.

Flight, Hawaii

HOU Go ahead Hawaii

HAW We've been noticing a slight decrease on the Agena ACS reg low pressure, D057, it's 3.68 psi. It was up above four I think, at some....

HOU Roger

HAW .....readings in the past.

S/C Hawaii, eleven.

HAW Go ahead.

S/C Now ask them back there at MCC at the Cape, if Neal is around, if he ever saw the paint all blistered off the side of the AGena. We've got a great deal of paint off and then it also looks like it has some sort of anodized - anodizing done to it or something. I was just wondering in all the night phase keeping in front of it if we didn't put our fuel on it.

HAW Ok fine, we'll try to find out that for you.

Incidentally we are through with tape dump, you can put your encoder back on.

S/C Okay, back on.

HAW Flight, Hawaii

HOU Go ahead.

HAW Roger, did you copy that conversation?

HOU Affirm, we're going to check.

HAW OK.

HAW Flight, Hawaii

HOU Go Hawaii.

HAW Roger, we're showing a cabin pressure now of 4.98. It has been running a little higher than that.

HOU Roger.

Hawaii, AFD.

HAW Go

HOU That is just a low regulation point on the regulator.

HAW Roger.

This is Gemini Control, 2 hours 59 minutes into the flight. We've had loss signal at Hawaii now, but will acquire at California within the next minute. We'll continue to standby for air to ground transmissions during the stateside pass. This is Gemini Control.

CAL California is remote.

HOU Gemini 11, this is Houston at California.

S/C Roger, this is 11. We're running S-26, sequence 03.

END OF TAPE

HOU Houston, roger.

S/C Houston, these values that we're doing are all part of S-26 and I have ...18 inches.....at this time. And I can also see the flame reflection of the forward firing thrusters in the TDA.

HOU Houston, roger.

S/C Houston, Gemini 11.

HOU Go ahead.

S/C Hey, John, did you know the paint blistered on your Agena? Over.

HOU Roger. There was some paint blistering on it.

S/C Roger. A bunch of.... near the TDA window. All the main paint is blistered I think.

HOU Roger. I'd like to get some pictures of that, over.

S/C Oh, we've got some. It's also got a deposit on the unpainted surfaces that looks like fluff....like anodize, you know, some sort of oxidize..

HOU This is Houston. Roger, we agree with that.

S/C I'm finally getting a little braver here doing my station keeping in pulse and it seems to be pretty economical.

HOU Houston, roger.
Guaymas remote, California local.

CAL California local.

HOU Guaymas, Houston. Are you remote?

GYM This is Guaymas. We are remote.

S/C Houston, this is 11. We'll be ready to report to ... remote in about 61 seconds.

HOU Houston, roger. 61 seconds.

S/C Say, Houston, this is 11. We ran our voice tape for the hour and we never did get a light and I'm not exactly sure that it's working at all. We just put a new tape in for S-26 and I'll check in when we have a few minutes but I think we've lost our voice tape.

HOU This is Houston, roger.

S/C Houston, 11.

HOU Houston, go.

S/C They just got tape dump in from Hawaii. Does the S-26 data look any good?

HOU They've got data from Carnarvon. Carnarvon data looks pretty good.

S/C Okay. I just want to make sure that we're checking it in the right place.

HOU Roger. I have an Agena docked update burn for you, if you're ready to copy.

S/C Ready to copy. Oh, wait a minute. He dropped his pencil. Okay, we're ready to copy.

HOU Roger. Purpose calibration burn, GETB 4 + 28 + 32. Delta V, 104.4. Delta TB, 1 + 28.

S/C John, we're not getting you. You cutoff. We got the 1 + 28, that's it.

HOU Roger. The purpose: plane change. GETB 4 + 28 + 32. Delta V, 104.4. Delta TB is 1 + 28. Address 27, 01 04.4. PPS burn, over. TDA north.

S/C Gemini 11, understand. Plane change, 4 + 28 + 32. Delta V, 104.4. Duration 1 + 28. Address 27, 0104.4. PPS burn, over.

HOU That is affirmative. This is Houston, that is correct.

S/C Roger.

HOU Gemini 11, Houston. Will you give us a call on UHF no. 2, over?

S/C Roger, going to UHF no..2.

HOU Roger.

END OF TAPE

HOU Houston, Gemini 11, over.

S/C Go ahead.

HOU Roger, we want to check and make sure your refrigerator on the S-4 blood package is working. Can you check it by feel and see if it is cold? Over.

S/C The outside of the package feels like it is ... into it. It is warm.

HOU Roger.

S/C However, the handle is cold. It is quite cold. So I am sure the refrigeration is working.

HOU Roger. That indicates the refrigerator is working. Can you guys move those mikes away from your mouth. I think that is part of our problem on communications. Over.

S/C How do you read us now?

HOU That is a little better. Try a little further away.

S/C Roger. About 2 inches. We will be better when we get our helmets off and get over in Hawaii ...

HOU Roger. That is much improved over.

S/C Okay....

HOU That is pretty scratchy.

S/C Say again.

HOU That is a little better.

S/C Roger.

HOU Texas local.

Gemini 11, Houston, can you turn your velocity - your encoder off for a velocity meter load?

S/C Roger. Encoder off. This is Gemini 11.

HOU Houston, go.

S/C ..we are through with the S-26, we are going to ahead with our forward docking... and you can help me...anything you want to.

HOU Roger. 11, this is Houston. We are taking a tape dump and doing a timer reset right now. Over.

S/C Okay...

HOU Houston, Gemini 11. Your velocity meter is loaded and the load is good.

S/C Roger.

ANT LOS Antigua.

GTI LOS, GTI.

HOU Gemini 11, Houston. Over.

S/C Go ahead, Houston.

HOU Roger, did you get any MAPs when you undocked? Over.

S/C Roger, we have to be right on top of it to get a MAP. We are 78 feet away, we don't get MAPs through our radar. I don't know what the problem is, but... close to... we get radar, why we get

S/C a MAP.

HOU Houston, roger.

S/C We are about to record a first here. The pilot is about to dock.

HOU Roger.

S/C Houston, 11.

HOU Go ahead.

This is Houston, go ahead.

S/C Roger, mark one docking for Richard Gordon.

HOU Roger, we chalked that one up. One for the right seaters.

S/C Say again.

HOU One for the right seaters.

S/C Can't understand you.

LOS

HOU Gemini 11, this is Houston, over.

S/C Go ahead.

HOU Roger, you can turn your encoder back on. The tape dump is good.

S/C Encoder coming on.

END OF TAPE

HOU Eleven, this is Houston. One minute until LOS

S/C Roger Houston. We're right on the flight plan, reading and complete so far and we'll trudge on.

HOU Houston, Roger.

S/C PQI is 46 percent fuel remaining.

HOU Houston, Roger.

This is Gemini Control, 3 hours 22 minutes into the flight. We've lost acquisition at Antigua. As you heard Dick Gordon has performed a docking, the first time in the Gemini program that the pilot has docked. They'll stay docked about five minutes and then undock again and perform more of the Ion-Wake measurement experiment. We expect to pick them up at the Rose Knot tracking ship within about two minutes and we'll standby for the conversation over that station. This is Gemini Control.

END OF TAPE

This is Gemini Control, 3 hours 24 minutes into the flight. We are withing range of the Rose Knot, we'll standby for air to ground transmission there and then the Ascension station overlaps the coverage of the Rose Knot and we'll keep standing by through the Ascension pass for any conversation between the crew and Cap Com. This is Gemini Control.

HOU RKV Cap Com, Houston Flight.

RKV Cap Com, Houston Flight.

RKV Flight, RKV.

HOU Reading you very weak.

RKV We have some problem and we'll.....

HOU Can not copy.

RKV Roger.

RKV Gemini 11, RKV Cap Com.

S/C Hello, RKV.

RKV Roger, will you turn the encoder off please, we'd like to run a tape dump.

S/C Roger encoder is off.

RKV Roger, thank you.

RKV Houston Flight, RKV can you read me?

HOU Go ahead.

Go ahead RKV.

RKV Roger. We're showing a PDP leading by something like approximately 4 hours, 4 hours 33 minute and 05 seconds.

HOU PDP is leading.

RKV That is affirmative. PDP is leading.

HOU Roger.

RKV Okay, and also DCS control valve out put primary is reading 50 degrees, secondary is reading 50 degrees also. We have switched PM stations completely here to confirm that it is nothing (garbled)

HOU Say those again.

RKV Roger, DCS control valve out temp primary 50, secondary 50.

HOU Then there is a summary.

RKV Okay, and be advised Flight that VM is presently showing all ones, presently showing all ones.

HOU Understand VM showing all ones.

RKV That is affirmative.

HOU Roger.

RKV Gemini 11, RKV. We'll have LOS shortly would you turn the encoder back on we're through the tape dump. Thank you.

S/C Roger, encoder is back on and we've (garbled)

RKV Roger, understand, on the flight plan.

RKV RKV has had LOS.

HOU Gemini 11, this is Houston at Ascension standby.

S/C Okay, Houston. We're just cooking up a little lunch here.

HOU Roger.

END OF TAPE

HOU Gemini 11, Houston. One minute to LOS.

This is Gemini Control, three hours, 36 minutes into the flight. The ground elapsed time for that redocking by the pilot, Dick Gordon was three hours, 19 minutes, 20 seconds. Three hours, 19 minutes, 20 seconds. This is Gemini Control.

END OF TAPE

This is Gemini Control 3 hours 46 minutes into the flight. Gemini 11 just about to acquire Tananarive in the night side of its third revolution. As we acquire Tananarive, Gemini 11 should be undocked and performing the linear portion of the Ion-Wake Measurement Experiment. This portion they translate back and forth in a straight line as opposed to the transverse translations they were making in the earlier portion of this experiment. We will stand by now for air-to-ground transmissions at Tananarive. (PAUSE)

This is Gemini Control at 3 hours 53 minutes into the flight. We have had no further word from Pete Conrad about the onboard tape recorder problem. There was an indication that we may have lost some of the onboard tape conversation. He said that when he got a little more time, he would take a look at it and try to verify that. He has not had time to do that since discussing it. A check with the Environmental Control Systems Officer here in the Control Center shows that the Environmental Control System valve temperature, the 50-degree temperature referred to in the air-to-ground a little bit earlier, is not an abnormal reading. He says we saw those temperatures in Gemini 10. He does not consider it a problem. We may have a clock problem on the Agena. There is some indication that the Agena clock has jumped 4 hours. Continuing to take a look at this to verify that. If it has jumped it will not impact or effect the spacecraft flight plan in any way, as long as we have the crew up there, they will be able to perform Agena maneuvers without use

of the clock. Will not intefere with the docked burns. The only problem that could arise, and this is not verified yet, but it could be a problem after the spacecraft separates finally from the Agena and we want to use the clock to perform Agena maneuvers. We may have a problem at that time, but the Agena systems officer will continue to monitor this and he says it will not interfere with the spacecraft portion of the flight plan. This is Gemini Control.

END OF TAPE

This is Gemini Control, four hours, nine minutes into the flight. Gemini 11 is just about to be acquired at the Coastal Sentry tracking ship off the coast of Japan. We'll stand by for the transmission at this pass.

CSQ Okay, Flight. The Agena and Gemini are yawing around at this time.

HOU Roger.

CSQ Cryo O_2 is showing about 640 on the meter.

CSQ Gemini 11, CSQ standing by.

S/C CSQ, Gemini 11..... for TDA north.

CSQ Roger, we're watching you come around.

S/C Be advised .....

CSQ Roger, I'm sending you a TX at this time.

S/C Roger.

CSQ Gemini 11, CSQ. Could you turn your encoder off so you can get a tape dump, please?

S/C Encoder off.

S/C CSQ, we still have about two minutes to LOS. I guess.....

CSQ Roger. I'll give you a GT time hack at this time.

S/C Go ahead.

CSQ Okay, in about 20 seconds it will be four hours and 13 minutes. 3, 2, 1, Mark. Four hours and 13 minutes.

S/C Roger, we're with you.

CSQ Okay, 11, CSQ. Would you turn your manual heater on and bump that O_2 pressure up a little, please?

S/C Roger, it's on.

CSQ Houston Flight, CSQ Cap Com.

HOU Go ahead.

CSQ Okay, both those ECS control valve temps are down around 40 degrees.....

HOU Roger. How's your V_M check?

CSQ Say again.

HOU Did you check the V_M load?

CSQ Your V_M load is okay.

HOU Roger.

CSQ We're getting an Agena tape dump at this time.

HOU Roger. How about TDT?

CSQ Houston Flight, CSQ Cap Com.

HOU Go ahead.

CSQ Okay, that tape dump is going to run over our LOS. Do you want us to shut it off at LOS?

HOU That's affirmative.

CSQ Roger.

CSQ Gemini 11, CSQ. One minute and a half to LOS.

S/C Roger. How about relaying to Houston that on the last docking we turned the radar off.... get a lock.....

CSQ Could you say again. I couldn't read you.

S/C Roger. Using the radar we ..... lock on the Agena but we couldn't send commands to.....

CSQ Roger, understand.

CSQ Gemini 11, CSQ.

S/C Go ahead.

CSQ Go for your PPS burn.

S/C Roger.

S/C CSQ, 11.....

CSQ Stand by, 11.

CSQ Okay, 11, you can turn your encoder back on.

S/C Encoder on.

HOU CSQ, Houston flight.

This is Gemini Control at four hours, 17 minutes into the flight. We have lost signal at the CSQ now. As you heard the crew was given a go for the Agena primary propulsion system burn. This will take place over Hawaii. It will be an out-of-plane burn to the north about 104 feet per second. This is a calibration burn or a confidence burn prior to the big maneuver later in the flight with the main Agena engine. There should be no large change in the orbit because of this burn. It may change the inclination by about two tenths of a degree but no more than that. This is Gemini Control.

END OF TAPE

This is Gemini Control, 4 hours 27 minutes into the flight. We have just acquired Gemini 11 at Hawaii. We'll bring you this pass from the start now.

Hou Roger, we confirm that.

Confirm camera on.

S/C Roger camera is on and sump tank cameras are on.

HOU Roger.

HAW SPS initiate.

HOU Roger.

HAW Go to burn.

HOU Say again.

HAW We saw the burn.

HOU Roger.

HAW We're showing an O_2 to water on section one delta P.

HOU Looks like the ascent phase.

S/C Okay ground, it looks like on my IVI's, 111 forward, 4 right, and 3 up. Ground copy.

HAW Roger, we copied that.

S/C Address 80, 110.4.

HAW Give me again on 80.

S/C 80, 110.4.

HAW Okay, copy that.

S/C Address 81, is a minus 2.7.

HAW Copy.

S/C Address 82, is minus 3.3, over.

HAW Roger we copy that.

S/C We have main engines on, we have 57 seconds remaining. Secondary propulsion we have 3 plus 31, over.

HAW We copy that also.

Delta P light went off.

HOU Roger.

What are you showing?

HAW On attitude test.

S/C Attitude test reads about 73 percent.

HAW Thank you.

HOU Send us an OBC Hawaii.

HAW Roger.

HAW Flight, Hawaii

HOU Go ahead.

HAW We're showing a CS partial pressure of 3.5 millimeters and .....

HOU 3.5

HAW That is affirmative.

HOU Hawaii from Flight.

HAW Go ahead

HOU Send us another main.

HAW Roger.

HAW LOS all parameters.

This is Gemini Control, 4 hours 35 minutes into the flight. We've had LOS at Hawaii. We'll pick up at California in less than a minute and we'll continue to standby through the stateside pass. This is Gemini Control.

HAW Gyrocompassing on.

HOU Roger

HAW The flight plan indicates gyrocompassing on for the retro burn, so I guess they didn't send it.

CAL California is remote.

HOU Gemini 11 this is Houston at California over.

S/C Hello Houston, Gemini 11 here. Go ahead.

HOU Roger, you're about to get off your nominal flight plan.

S/C Why?

HOU Well you can't do S-29 because the vibration points moved the Milky Way, right?

S/C We got later word that you - we were going to do a gegenschein photography instead of the S-29. They should have told you about that on the ground (garbled) and they are suppose to (garbled) the time of the exposure. We have the (garbled) coming in ready and we are setting up to BECO right now and so we need the exposure times.

HOU Roger, that is good. Have the data for you right now. At 5 hours 11 minutes and 3 seconds.

END OF TAPE.

HOU Supposed to take the pictures with the S-29 equipment, take a picture of the Gegenschien, pitch 17 degrees up at sunset. Then Comet Barbon near the Gegenschien. The second picture, then the third picture is Comet Kilston. They are out there. And sunset is 5 hours 11 minutes 3 seconds. Over.

S/C Roger, we copy. Sunset 5 hours 11 minutes 3 seconds and I think we need ... Gegenschien.

HOU Roger.

S/C We also need exposure time on film. ...John on that PPS, that is the biggest thrill we got yet.

HOU That baby really moves, doesn't it.

S/C It was a shock boy, it was like going off a catapult. John, after all, you are supposed to monitor the (garbled)

HOU Roger.

S/C And be advised...total velocity ...

HOU Roger.

S/C (Garbled)

HOU Roger.

HOU Guaymas remote, California local.

GYM Guaymas remote.

CAL California local.

HOU Texas remote, California local - Guaymas local.

TEX Texas remote.

GYM Guaymas local.

S/C This is 11.

HOU Houston, go.

S/C ...windows got so dirty, but both our windows are really dirty. It is twice as dirty as they were on Gemini 5. And we had the window covers. I don't understand it.

HOU Roger. You got one right now?

S/C Say again.

HOU You - before or after the PPS burn, over.

S/C I can't hear you.

HOU Was it during the PPS burn that they smudged up.

S/C No. They have been smudged up ever since we jettisoned the covers. As soon as I got rid of the covers - it seems as soon as I got rid of the covers the windows were dirty. Now, that could have been my imagination. It could have been dirty already. But whatever it was must have come off ... because they were dirty just as soon as we jettisoned the covers.

HOU Roger. Gemini 11, Houston, you do have exposure times for the Gegenschien and the comets, don't you?

HOU Gemini 11, Houston. Over.

Gemini 11, Houston. Over.

S/C Go ahead, Houston.

HOU Roger. You do have exposure time for the Gegenschien and the comets don't you?

S/C Wait a moment and let me look in the book.

HOU Roger, they are in there. And -

S/C Okay, we got the time.

HOU And at 5:26 Comet Kilston point commands is yaw 143 degrees left and 16 degrees up. Over.

S/C Yaw 143 degrees left.

HOU 143 degrees left and pitch 16 degrees up. Over.

S/C Yaw 143 degrees left and pitch up 16 degrees and that is at 5:26 plus 40.

HOU Roger. That is yaw 143 degrees left. One hundred and forty-three degrees left.

S/C Okay, I got it. You were fading in and out for some reason.

END OF TAPE

This is Gemini Control, four hours, 59 minutes into the flight. Gemini 11 is over South America. It's just begun its fourth revolution and is coming within range of the Rose Knot tracking ship now. We'll stand by for air-to-ground transmissions over that station.

This is Gemini Control, five hours, one minute into the flight. There's been no conversation yet over the RKV. We'll continue to stand by. This is Gemini Control.

S/C Okay, RKV, be advised that we've got the ...

.....

RKV Roger, understand.

HOU RKV Cap Com, Houston Flight.

RKV Cap Com, Houston Flight.

RKV We have the tape dump on the Agena. You can turn the encoder back on, please.

S/C Roger, encoder coming back on at this time.

HOU RKV Cap Com, Houston Flight.

... Got a report..... on conference.

RKV Gemini, RKV. We'll have LOS shortly.

HOU Gemini 11, Houston here.

RKV Roger, Houston. RKV again. We're pitching up to .....

HOU RKV, Houston Flight.

END OF TAPE

This is Gemini Control, 5 hours 9 minutes into the flight. Gemini 11 is out of range of the Rose Knot now. Beginning to perform the astronomical photography, photographs of the gegenschein, the comet Barban, the comet Kilston. The next station to acquire will be Tananarive at an elapsed time of 5 hours 21 minutes 21 seconds. The crew will be busy with the photography at that time also but we will come up again at Tananarive and standby for any conversation during that pass. This is Gemini Control.

END OF TAPE

This is Gemini Control, 5 hours 21 minutes into the flight. Gemini 11 is within range of Tananarive. John Young just put in a call to the spacecraft, we'll listen to this pass.

S/C I'm getting ready to go for the comet.

HOU Roger.

S/C There was a real wrestling match with that camera but we got it all together.

HOU This is Houston, sometimes its that way.

S/C Houston, 11

HOU Go ahead, over.

S/C Gegenschein is complete, we're on our way over to the comet.

HOU Roger.

Understand that comet Barban is near the gegenschein, over.

S/C Okay, it probably is in the same photograph with it.

HOU Roger.

This is Gemini Control, 5 hours 25 minutes into the flight. We're continuing to standby at Tananarive. The Flight Surgeon, Dr. D. Owen Coons, reports that the heart rates during the primary propulsion system burn, the Agena main engine burn, approached those seen during rendezvous and docking. Conrad up near 120 and Gordon about 110. We'll continue to standby through this Tananarive pass. This is Gemini Control.

CSQ AFD, CSQ Cap Com.

HOU CSQ Cap Com, AFD on conference.

CSQ Got it, AFD on conference.

HOU Roger.

Put CSQ on here please.

CSQ AFD, CSQ Cap Com.

HOU Go ahead CSQ.

CSQ Gota question for you on this pass coming up.

HOU Go ahead.

CSQ Okay, the Agena work schedule calls for a tape dump however, flight plan does not, which is correct?

HOU Okay, Agena says no tape dump.

CSQ Say again.

HOU No Agena tape dump.

CSQ Roger, no Agena tape dump.

HOU Roger.

S/C Roger, one minute to LOS. The comet photographs are complete, we're going to TDA forward spacecraft TEF at this time.

HOU Roger.

This is Gemini Control, 5 hours 30 minutes into the flight. Gemini 11 has passed out of range of Tananarive. The next station to acquire will be Coastal Sentry Quebec at 5 hours 44 minute 4 seconds. This is Gemini Control.

END OF TAPE

This is Gemini Control 5 hours 44 minutes into the flight. And Gemini 11 is coming up on tracking ship Coastal Sentry. Gemini 11 in its fourth revolution now. We will stand by for any air-to-ground conversation over this tracking ship.

CSQ vehicle, both vehicles are go.

HOU Roger.

CSQ Gemini 11, CSQ Cap Com.

S/C Hello CSQ, Gemini 11.

CSQ Roger, we have you go on the ground here. Send your TX.

S/C Thank you...here. We have completed everything and we are restowing.

CSQ Roger.

CSQ Houston Flight, CSQ Cap Com.

HOU Go ahead.

CSQ Okay, we are showing him in deadband roll at this time. Do you want him to go to Hawaii?

HOU You are showing deadband low? Stand by.

CSQ Deadband narrow. That is affirmative.

HOU Deadband narrow? What is flight control mode?

CSQ According to our flight plan, indicates it should be off at this time. However, it is showing on.

HOU CSQ Cap Com, Houston Flight.

CSQ Go ahead.

HOU You might check that with him. That is command 451 deadband wide.

CSQ Roger. 11, CSQ.

S/C Go ahead.

SCQ Okay, we notice you have got deadband narrow. Send command 451.

S/C Roger.

CSQ Have you sent ACS gain low command 460?

S/C Roger.

CSQ Okay Flight, CSQ. He is in flight control mode 1, heading 000.

HOU Roger.

CSQ Gemini 11 CSQ. About a minute until LOS.

S/C Roger, how do we look?

CSQ You are looking real good on the ground. You still have your L-band on.

S/C Say again?

CSQ We show you still have the L-band on. Send command 070.

S/C Roger. CSQ, this is Gemini 11, command pilot let me see if we can get a volume we can accept.

CSQ Do you read me loud and clear?

S/C Roger we can read you.

END OF TAPE

This is Gemini Control, six hours, two minutes into the flight. Gemini 11 just about to acquire at Hawaii. The crew, Pete Conrad and Dick Gordon, have stuck very close to this flight plan, in fact, have been running ahead by a few minutes on some of the items, but have never been behind. The last experiment performed was the Astronomical Photography, during this last nightside pass which ended about five hours, 45 minutes elapsed time. We hear them talking to Hawaii now. We'll stand by for that conversation.

HAW Crew status report.

S/C We have that in the flight plan.

HAW Okay. 08:00:00, purge fuel cells section 2 then 1.

S/C Roger.

HAW I'd like to ask you a couple of questions if you've got a minute.

S/C Go ahead.

HAW Okay. This is in regards to the L-band problem you had there in the S-26 where you mentioned something about you didn't have L-band lock but you sent commands and you verified the commands or something like that. Can you explain that a little bit?

S/C Roger. We had no lock light and the radar was not locked on but when we sent the commands, we'd get a map.

HAW Okay.

HAW How about that?

S/C Yeh, that's what I say. How about that? There's a little more to that story too. When we undocked the second time I used the hard-light switch and after we came back into the docking position we did not have a docked light. I don't believe ..... so I turned the radar on and set 220, got a map and got a dock light, but we never did get a radar lock on light.

HAW I see. Evidently you weren't squeezed in there good enough.

S/C Yeh, could be.

HAW Okay, someone somewhere copied you had a little bit of problem with your down thrusters during your terminal phase maneuvers. Did you?

S/C I kind of had the impression that when I was firing down I was getting intermittent firing but I can't prove that.

HAW Okay.

HOU Hawaii from Flight.

Hawaii Cap Com, Houston Flight.

Hawaii Cap Com, Houston Flight.

Hawaii Cap Com, Houston Flight.

HAW Go ahead.

HOU Ask him if the pilot noticed anything about

the thruster while he was docking, for example. I don't know whether he had occasion to use that thruster. Do you follow me?

HAW Roger.

HOU With his controller?

HAW 11, Hawaii.

S/C Go ahead.

HAW Roger. You might ask Dick while he was trying his docking practise if he used that down thruster any.

S/C We haven't noticed it recently on that thing. It seems to be okay at this time.

HAW I see. Did you use that down thruster any, Dick, when you tried your docking?

S/C Yeh, I sure did. I didn't want to say anything wrong with it. I think Pete's is all right now too.

HAW Oh, I see. Okay, we thought maybe it was in one of those controllers.

S/C We're correcting line of sight rates and I was firing long -you know, two or three second or four second bursts out of it and I thought I could hear it firing intermittently. It could have been the rate command system but it just sounded different to me. It sounded like I was getting it steady.

HAW Okay.

S/C You know, all the docking work and station keeping and everything, it's just been limited and it's always fired for us.

HOU Copy.

HAW Okay, we copy that.

S/C Hawaii, 11.

HAW Go ahead.

S/C We have powered down per the flight plan.

HAW Roger. We were monitoring all that down here.

S/C Okay.

HAW All your systems look terrific.

S/C Okay, and PQI is 43 percent fuel remaining.

HAW Thank you.

HOU Hawaii from Flight.

HAW Go ahead.

HOU Send us another main and confirm their pump configuration as per the flight plan.

HAW Roger it is.

HOU Roger.

HAW Primary A, secondary B.

HOU Roger.

HAW 11, Hawaii. We have one minute to LOS. Standing by.

S/C Roger. Roger.

HAW Caught both of you on that one.

S/C Well, he's mixing and I'm talking.

HAW We have received tape dump.

HOU Roger.

HAW LOS all parameters. All systems go at LOS.

HOU Roger, Hawaii.

END OF TAPE

This is Gemini Control 6 hours 36 minutes into the flight. Gemini 11 is over South America. They have just started their fifth revolution, is about to be acquired by the Rose Knot tracking ship. Another docking practice is scheduled from 6 hours 45 minutes to about 7 hours elapsed time. This is between RKV and Tananarive acquisition. However, if the crew is still running a little ahead on their flight plan, we may be able to pick up some of this on this RKV pass. We will start this pass at RKV from the beginning, now.

RKV 235, 235.
Flight, did you copy?

HOU 235 on which?

RKV On cryo, roger.

HOU Which one?

RKV ..valid indicator on. Do you want them both, or what?

HOU Both of them.

RKV Roger, 11, RKV.

S/C Go ahead.

RKV Roger, did you place your quantity read switch to the O_2 position please?

S/C Thank you.

RKV 235 on O_2.

S/C Roger.

RKV Okay, would you place to H_2 please?

S/C Roger.

RKV H_2 is 252. 252.

S/C Copy.

RKV 11, I have a PLA update for you when you are ready to copy. That will be block two.

S/C 11 ready to copy.

RKV Roger. Area 8-3 11;48;13;21 plus 29 27 plus 40 roll left 58, roll right - say again, roll left 85, roll right 95. Area 9 Delta 12 44 33 20 plus 27 25 plus 54. Roll left 85, roll right 95. Area 10-2 14 17 510 20 plus 20 25 plus 54. Area 11-2 15 53 24 20 plus 18 26 plus 00. Area 12-2 17 31 41 20 plus 31 26 plus 23. Area 13-1 18 57 12, 20 plus 18, 26 plus 13. Area 14-1 20 32 55, 20 plus 35, 26 plus 43. Last one area 15-1 22 08 15, 20 plus 51, 26 plus 57. Bank angle for all areas is roll left 85, roll right 95. Weather is good in all areas and they all include SEP maneuver. Over.

S/C Gemini 11, roger copy.

RKV We have nothing else for you at this time. We are standing by.

S/C Roger. We have switched back to off.

RKV Roger,...dump please?

S/C RKV, this is 11. I would like you to pass to Houston that the windows are so dirty that prior to EVA, we would like to have permission to try and clean the windows.

RKV All right, stand by one, we will see they say.

S/C They can think it over for the night and let us know tomorrow - interruption -

HOU We will think it over --

S/C The windows are so dirty we would like to do something about them.

RKV Okay, Flight copied that and will give you the information tomorrow.

S/C Fine.

RKV Carnarvon, RKV, we will have LOS in about a minute.

CRO Roger, we are getting ready to have the pilot do his night undock and dock. Over.

RKV Roger. Flight, we saw a MAP of the command that he sent.

HOU Roger.

RKV He has his L-band on.

HOU Roger.

RKV We are having LOS at this time.

HOU Roger.

RKV And we have indications that they have turned their recorder on the Agena on at this time. LOS both vehicles.

HOU Roger.

This is Gemini Control 6 hours 45 minutes into the flight. Gemini 11 has just passed out of range of the Rose Knot tracking ship. The next station to acquire will be Tananarive at 6 hours 57 minutes 13 seconds. This is Gemini Control.

END OF TAPE

Gemini Control Houston at 6 hours 57 minutes into the flight, into the Gemini 11 mission. We should be coming up over Tananarive momentarily. We are standing by for that pass now. The Gemini 11 is scheduled to start a meal during this particular pass or shortly thereafter. We have acquisition now so lets turn to the conversation from the air to ground.

TAN Roger, how is your docking practice, over.

S/C Say again this is Gemini 11.

TAN Roger, how is your docking practice,over.

S/C Oh it went just fine. Dick backed her up (garbled) I guess and we're going to flight plan, TPI is four percent or so, 43 percent of fuel remaining.

TAN Roger, superb.

S/C Say again.

TAN That's great Pete.

S/C I'm getting a lot of noise and I can't hardly receive you.

TAN Roger. I just want to say that you guys really had a great day. It's wonderful.

S/C Thank you very much.
I wish to advise that we dumped the tape over CSQ and we've already eaten. So, if you'd like a crew status report now we can give it to you.

TAN Roger, as you desire. Over.

S/C Okay. We ate day 1 meal A, then meal C. Dick ate everything and I ate everything except the brownies.

TAN Roger.

S/C The watergun reads 617 and I'd say it was about equally split between the two of us and it was 450 to start.

TAN Roger

I have a nodal update for you if you are ready to copy. Over.

S/C Roger, we're ready to copy.

TAN Roger. Time is 10 hours 8 minutes and 56 seconds, revolution 7, 21.1 degrees east, 1 hour 42 minutes right ascension. Over.

S/C Roger. (garbled) point east, 8 minutes 56 seconds

TAN That is correct. Over.

This is Gemini Control Houston. Since we have a lull in our conversation, we would like to comment about the earlier conversation. As you perhaps heard, the Gemini 11 crew has successfully completed docking practice just prior to this pass and the crew is also advised by Cap Com John Young that they have had a great day.

Gemini Control Houston, we now have LOS at Tananarive and we're standing by now for our next pass which will be CSQ. This should be at some 7 hours 20 minutes into the mission. This is Gemini Control Houston.

END OF TAPE

Gemini Control Houston at 8 hours and 3 minutes into the flight of Gemini 11. We will probably have no more conversation with the Gemini 11 crew, Pete Conrad and Dick Gordon this evening as they have just entered into their sleep period. The spacecraft is powered down and in drifting flight. At this time the Mauve team of flight controllers has come aboard into the Mission Control Center at Houston and is functioning at the consoles. The Mauve team of controllers will primarily serve during the 8-hour rest or sleep cycles of the flight to monitor the systems and the condition of the crew. Although the Mauve team of flight controllers has no flight director as such, it is interesting to note that a man with a great deal of experience in the field of flight directing is currently in the Control Center and that is Mr. John Hodge. It is expected that Mr. Hodge will spend a considerable amount of time around the Mission Control Center this evening on this shift. At this time, we will play the tapes for you of the passes over the CSQ and Hawaii. Let's roll the tapes.

CSQ — CSQ has TM solid. Both vehicles; both vehicles are go.

11, CSQ

S/C — Go ahead, CSQ.

CSQ — Roger. We are sending TX at this time

S/C — Garbled.

CSQ I would like to have you turn your encoder off so we can get a tape dump from the Agena.

S/C Roger, encoder is on off.

CSQ Roger, we are go here on the ground. We will be standing by.

S/C Roger.

HOU CSQ Flight.

CSQ Go, Flight.

HOU How does it look?

CSQ Both vehicles are looking good. Both are go. We are starting the Agena tape dump.

HOU Roger.

CSQ, Flight.

CSQ Go, Flight.

HOU Can we have an A summary please?

CSQ Which vehicle?

HOU Stand by. Gemini.

CSQ Roger.

HOU CSQ, Flight.

CSQ Go, Flight.

HOU You still have the crew awake now?

CSQ Say again?

HOU The crew are still awake?

CSQ That is affirmative.

HOU We are seeing something like an 8 to 10 amp higher load than we expected in the power down situation. You might have a word with them and

HOU see if they have got any clue. They might not have completely powered down yet. Would you check with them please?

CSQ Roger. 11, CSQ.

S/C Go ahead CSQ.

CSQ Okay, we show you are running a little bit high on your amperage. Have you completed all of your power down checklist?

S/C No, we haven't yet. We will in a few minutes.

CSQ Roger.

HOU I got that CSQ.

CSQ Roger.

Gemini 11, CSQ. You can turn your encoder back on. We have completed the tape dump.

S/C Roger.

CSQ ...LOS, standing by.

S/C Roger.

HOU CSQ, Flight.

CSQ Go, Flight.

HOU Let me have another Gemini main, please?

CSQ Roger. This is CSQ we have LOS both vehicles. Both vehicles were go.

HOU Roger, CSQ.

Hawaii, Flight.

HAW Go ahead Flight, Hawaii.

HOU I guess we have a couple of other things for

HOU you here, an ERT reset and a Gemini tape dump.

HAW Okay. Gemini 11, Hawaii.

Gemini 11, Hawaii, Cap Com.

S/C Roger Hawaii. This is 11. Go ahead.

HAW Roger. What is the position of your real-time TM input?

S/C It is in the command position.

HAW Roger, how about putting it to real time in Acq aid for me?

S/C Roger, real time in Acq.

HAW Would you go back to command?

S/C Back to command.

HAW Flight, Hawaii.

HOU Go ahead.

HAW I can't get any real time telemetry.

HOU No real time telemetry?

HAW That is affirmative, John.

HOU Let's try stand by.

HAW I just tried that, Flight.

HOU Stand by. Do you have Acq aid?

HAW That is negative, Flight.

We see the Acq beacon now, Flight.

Here comes telemetry.

HOU There you go.

HAW About 3 minutes late.

HOU I will have to think about that one. Okay now Hawaii?

HAW It is an intermittent signal. It is coming in and out.

HOU It is probably just antenna... then.

HAW Roger. 11 Hawaii.

S/C Go ahead.

HAW Okay, during your sleep period, well before your sleep period, I would like you to pump up that O_2 tank pressure to 765.

S/C Roger, 765.

HAW Right, and at the present decay rate that we have got about 100 psi per hour, it will probably go a little bit low during the sleep period. So if either one of you two gentlemen wakes up, you might pump it up during the night.

S/C Okay.

HOU Tell them not to go above 765.

HAW And don't go above 765.

S/C Roger.

HAW Gemini 11, Hawaii.

S/C Go ahead.

HAW Okay, would send a reset timer reset for us? 060.

S/C Roger. Will send 060. It is reset.

HAW All right, thank you.

11, Hawaii, one minute until LOS, standing by.

S/C Roger. We are going ahead and power down the UHF now and thanks very much good night.

HAW And a good night to you. Hawaii has LOS all parameters, all systems were go.

HOU Roger. Can we have an LOS main please?

HAW Roger. We did not receive a complete tape dump due to the problem we had during the early part of the pass on the signal. So we commanded it off at 30 seconds prior to LOS.

HOU Very good. Okay.

Gemini Control Houston at 8 hours 11 minutes into the flight of the Gemini 11. We expect acquisition by RKV in one minute. However, we plan no conversation over RKV since the crew has entered their sleep period for the evening. The - it is perhaps significant to note at this time, since the crew is now entered their rest period, that this morning's rendezvous brings our rendezvous tally sheet up to 8 rendezvous attempted in space with 8 rendezvous successful. This will include the first meeting in space, Gemini 7/6, then Gemini 8 with the first docking, there were three rendezvous in Gemini 9 and Gemini 10

with its dual rendezvous and today the swiftest rendezvous todate, M=1 rendezvous of Gemini 11. So at 8 hours 12 minutes into the flight this is Gemini Control.

END OF TAPE

Gemini Control Houston at 9 hours 7 minutes into the flight, into the Gemini 11 mission. The Gemini 11 spacecraft is now passing over the Pacific, the Western Pacific. It is some 8 minutes away or 8 minutes away from acquisition by Hawaii. It has made a pass over the CSQ. Because the crew is in their rest period, there was no conversation during this pass. The spacecraft is now in its 6th revolution. At this time in the Mission Control Center, we've had a rash of recent visitors. Astronaut Chief, Alan Shepard along with backup pilots Neal Armstrong and Bill Anders have arrived in their flight suits. Apparently just landing or landing only a short time ago from Cape Kennedy where they viewed the launch. Also aboard now is Mr. Charles Mathews who also was at Cape Kennedy for the launch and Al Bean the other Cap Com has joined John Young at the Cap Com console here in the Control Center. Otherwise, the Mission Control Center has a very quite atmosphere, it stands in considerable contrast with the Gemini X mission during the same time of day. You will recall Gemini X was an afternoon launch. The launch taking place at 4:20 p.m. c.s.t. and at this point and time during the Gemini X mission the Gemini X crew who was heavily involved in their - with their first rendezvous. In fact this evening in the Mission Control Center its much like an airplane cockpit when the autopilots on. Flight Controllers are quitely going over procedures and reviewing their days activities and of

course their monitoring systems aboard the Gemini 11 spacecraft. At 9 hours 10 minutes into the mission this is Gemini Control.

END OF TAPE

Gemini Control Houston at 10 hours and seven minutes into the Gemini 11 Mission. The Gemini 11 spacecraft is now undergoing its seventh revolution. It is passing just inside the acquisition ring of Kano tracking. The Gemini 11 spacecraft is currently tracking an apogee of 166.5 nautical and a perigee of 157.5 nautical. Flight Surgeon John F. Ziegl-schmid advises that respiration and heart rates are coming down as crew members Pete Conrad and Dick Gordon unwind from what John Young described as a great day. Flight Surgeon says that the crew is currently relaxing and not yet fully asleep, however, they are nearing that state. Our propellant useage during todays very active flight plan came to - comes to - 416 pounds. This is quite a modest figure considering the amount of activity which was accomplished during the day. At 10 hours, nine minutes this is Gemini Control.

END OF TAPE

Gemini Control-Houston at 11 hours, 7 minutes into the flight of Gemini 11. Gemini 11 is presently passing over the mid-Pacific. It is now making a southerly track on its seventh revolution. We're about 15 minutes away now from acquisition by the Rose Knot off the east coast of South America. We expect no conversation, and there will be no conversation on this pass since the crew is some three hours into their rest period at this point in the mission. We've just been advised that the Gemini 11 crew, Pete Conrad and Dick Gordon, are probably dozing at this time. Their pulse rates and respiration rates have gone significantly down. Conrad is currently clocking a pulse rate of 69 beats per minute. Dick Gordon -- 72 beats per minute. Respiration rate for Conrad reads 12 per minute; for Gordon 13 per minute. And this gives us a rather clear indication that the crew is at least dozing at this point in the mission. During this quiet period, it's perhaps worthwhile to relate a sidebar conversation that took place in the Mission Control Center. This is actually the second time that Pete Conrad has been aboard a Gemini spacecraft as it made maneuvers toward rendezvous in space. The first was Gemini 5. In the case of Gemini 5, however, there was no real target -- only a point in space. It was a phantom rendezvous. It was programmed from the ground, and the exercise was stopped at what would be considered the terminal phase initiation in a real-life rendezvous. Today, of course, there was a real target -- Agena 11, and the rendezvous significantly was accomplished by onboard computations; and as Conrad and Dick Gordon are three hours into their rest period, they are docked and secured to that target. At 11 hours, 10 minutes into the flight of Gemini 11, this is Gemini Control.

END OF TAPE

Gemini Control - Houston at 12 hours and 7 minutes since liftoff of Gemini 11. The Gemini 11 spacecraft is now in its eighth revolution, and has just been acquired by Coastal Sentry. We do not have any conversation with the spacecraft on this particular pass because the crew is now four hours into their sleep period with some four hours to go in their sleep period. However, the Coastal Sentry is monitoring systems aboard the spacecraft; and all is well. The orbital parameters remain the same as reported earlier. That would be 166.5 nautical by 157.5 nautical. Meanwhile in the Mission Control Center, activity proceeds quietly and methodically in preparation for tomorrow's activities. At 12 hours, 9 minutes into the mission, this is Gemini Control.

END OF TAPE

Gemini Control - Houston at 13 hours and 7 minutes into the mission -- into the flight of Gemini 11. Gemini 11 is now passing out of the ring of acquisition of the Rose Knot at this time, and it is currently the judgement in Mission Control that the Gemini 11 crew is sleeping. Pulse rates on Command Pilot Pete Conrad indicate 66 beats per minute. On Pilot Dick Gordon -- 64 beats per minute. Respiration reads -- rates read 16 breaths per minute by Conrad, and 14 by Gordon. In discussions with Mission Director Bill Schneider, he advises that tomorrow's activities will hue to the nominal flight plan. Additionally, Mission Director Bill Schneider indicated that no decision to wipe off the windows during EVA -- during the extravehicular activity of Pilot Dick Gordon will be made until after the matter is discussed with the crew following their awakening in the morning. One change might be anticipated by preliminary estimates at this time, and that would be an EVA hatch opening time because of the later liftoff this morning -- it is currently calculated that hatch opening time will be at 24 hours, 2 minutes and 9 seconds into the mission, and some 115 minutes later that the ingress procedures will commence. At 13 hours, 10 minutes into the mission, this is Gemini Control.

END OF TAPE

Gemini Control - Houston at 14 hours and 7 minutes into the mission. Gemini 11 is now in its ninth revolution over the mid-Pacific passing far to the south of both Canton and Hawaii tracking stations. Next acquisition with the spacecraft will be over Canary. The spacecraft will pass over South America toward Canary. Acquisition at Canary will be at 14:46:45 or some 35 minutes from now. During this drifting flight phase of Gemini 11, our apogee and perigee has remained stable at 166.5 nautical apogee and 157.5 nautical perigee. We are now some six hours into the sleep cycle, and our current estimates based on data received so far are that both crew members can reasonably expect about four hours of sound sleep this first night in space. This, by the way, is a typical situation or a comparable situation, we should say, to previous Gemini missions; and is analogous, by the way, we might add to a traveler who is away from his home environment in a distant city for the first night. One point of clarification -- our 115 minute umbilical EVA time from hatch open to start ingress takes into account a five-minute rest period which should occur prior to the D-16 experiment -- this would be the minimum reaction power tool evaluation. At 14 hours, 9 minutes into the flight of Gemini 11, this is Gemini Control.

END OF TAPE

This is Gemini Control, Houston, 15 hours 7 minutes 39 seconds into the flight. Our present orbit is 157 by 166, we still have a sleeping crew. The Flight Surgeon says they have been - they have had solid sleep for about the last three hours. The present plan is to wake the crew about - in slightly less than one hour from now. At 16 hundred hours - at 16 hours elapsed time. This will give them only four of what the Flight Surgeon describes as deep sleep, but he also says this is fairly characteristic of first nights during this type of three day flight that we have been experiencing since the flight of Gemini 8. The Flight Director, Glen Lunney, is going around the room and has gotten a good status report from each of his consoles. He's concerned with all the onboard quantities, and he is being apprised of special backroom work that is going on. This is Gemini Control, Houston.

END OF TAPE

This is Houston, 16 hours 7 minutes into the flight. The crew remains asleep. Our status is unchanged since our last report. This is Gemini Control Houston.

END OF TAPE

This is Gemini Houston. 16 Hours 22 minutes into the flight. At 12:55 A.M. CST communicator Alan Bean put in the first call to the crew today. "Pete" Conrad came up on the line and he reported the crew was "bright-eyed and bushy-tailed" in a voice that sounded neither "bright-eyed nor bushy-tailed". Very sleepy "Pete" Conrad but he indicated that they had been awake for some minutes and had already begun powering up the spacecraft for the days activities. The first thing they did was reset the Agena timer by sending a 060 command to the Agena. There was considerable discussion ensued about the problems existing that were noted during the first days activities in the Agena. They seemed to narrow down to the fact that the crew could not establish a solid radar lock. Particularly at close range. And also their MAP light or message acceptance pulse light, was somewhat erratic. Conrad said sometimes they got a MAP and sometimes they didn't, when they send commands. The ground crew at the various stations around the world is satisfied that all the commands that have gone into the Agena have been received properly and acted upon properly by the Agena. The problem seems to be in the return circuitory from the Agena back to the spacecraft. Indicating that the circuitory within the Agena is functioning properly. The crew is presently has completed their powering up of the electronic systems within the spacecraft and they are out over the east Atlantic preparing for fuel cell purge. They will be eating breakfast shortly. Meanwhile here is a tape conversation with the crew via Antiqua.

S/C One thousand one nine S Gemini

HOU Gemini 11, Houston

S/C (garbled) here. How are you?

HOU Just fine, how do you feel this morning?

S/C "Bright-eyed and bushy-tailed"

HOU Roger, good show. Get a quick shower and shave and get back to work.

S/C We were taking a little snooze just now. We've powered up waiting for the platform to come up.

HOU Roger. When you get the time send 060 which is reset timer reset to the Agena.

S/C Roger. zero six zero. And it's validated.

HOU Roger.

S/C I've got something for you test when you are ready to copy.

HOU We're ready, go ahead.

S/C I've been thinking about this L-band business and having no radar lock and it concerns me a little bit about our tether exercise. I don't know what you people have been thinking about on the ground but I think there should be some way before we up dock with the tether hooked up, that we can ascertain that we can control the Agena from the Gemini. Like maybe we better undock again one of these days and power up to radar and over a station and see if we really are getting commands

into it or not.

HOU Roger 11. We've been kicking that around down here also and we're going to give you some more information on it, probably ask you a few questions on revolution 13 as you pass over the states.

S/C Very well.

HOU 11 Houston. Our ground indications show that even though you're not getting any MAP lights there is every indication here that all your commands are getting into the Agena.

S/C We sometimes got a MAP and sometimes we didn't. The one suspension that we didn't get a MAP is that we never could...when we did have radar lock, we didn't get a MAP on sending the switch for antenna during radar and we tried both positions which we should have gotten a MAP on one of them. We should have gotten a MAP on both of them.

HOU Roger. "Pete" there's been a lot of question as to/exactly how long you're holding the transmit switch in the transmit position.. waiting for a light when you're undocked.

S/C Would you say a couple of seconds?

HOU Roger, that's what we thought. We just wanted to verify it.

S/C Okay, but don't forget now while we were station keeping we never could get radar lock on. And I have implied that the lock on light still working. That's what got me confused because apparently we're getting MAPs in without the radar being locked on. Is that possible?

HOU Right now, 11,at least to the best of our indications down here on the ground we think your problem is in the return circuitory from the Agena to you, in both the MAP and the radar lock out light. So this is the one thing that would explain both the anomalies that you're seeing.

S/C Okay.

HOU But we'll be talking to you more about it when you come over the states in about an hour and a half.

S/C Okay.

HOU Gemini 11, Houston.

S/C Go ahead Houston.

HOU Roger, when you do come across the states then we're going to want to not only talk about the MAP lights and the lockout light, but we're going to try and get some sort of feel for the FDI problem you had at the same time and see if we can get some correlation between all those three anomalies.

S/C Okay. I can give you a little bit on that right now. It's just that the FDI started to wander off and pitch a yaw. We never broke lock and we tried to switch antennas and it wouldn't switch and it made our third solution bad.... garbled...

HOU 191 LOS Antigua

END OF TAPE

Gemini Control, Houston, 16 hours 37 minutes. During the Canary pass just completed, the crew undertook a fuel cell purge and that was the primary activity during the pass. Here is the taped conversation of that event.

AFD Canary Cap Com, AFD.

CYI AFD, Canary. Okay, then you are awake. I guess about all you got is a purge and a Node update, cryo quantity.

AFD Roger.

HOU Canary, Houston Flight.

CYI Flight, Canary.

HOU Buck when he was leaving here, he was telling us a little more about the azimuth and elevation wandering. Did he notice during the terminal phase, we copied him to say that the FDI's wandered off in pitch and yaw. He commanded the other Agena antenna, and he says that it didn't do any good, by that I assume that he means the pitch and yaw continued to wander off. He started to tell us how that affected his closed loop solution and about all we copied here was that it made his third solution.- I presume that this midcourse made that solution bad. That is about as far as we copied. See if he wants to continue.

CYI Okay, see if he wants to continue. We have a little bit of -- I will get the update information up to him and then talk him, okay?

HOU Okay.

CYI Okay, we have a G to TM solid to Canary. Gemini TM solid to Canary. Both vehicles are GO. We have C-band track.

Gemini 11, Canary.

S/C Good morning, Canary. Gemini 11 here.

CYI How is it looking up there?

S/C Just fine.

CYI Okay, we are having a standby for TX here.

S/C Standing by.

CYI Okay, Gemini 11, we are still GO on the ground here. We have a Flight Plan update for you to copy during this pass, and we will start your fuel cell purge for you in just a second.

S/C Roger, we are ready to copy the Flight Plan update at this time and then the fuel cell.

CYI Okay, Title: Node at 16:10:00, REV 11, 71 degrees west, one hour 34 minutes, right Ascension. Title: Sierra 11 at 17:14:12, Sequence No. 02, Load No. - Alpha. That is the end of the Flight Plan.

S/C Roger.

CYI We are ready for your fuel cell purge, section 1, list 2.

S/C Roger, stand by. Okay, we are starting hydrogen on cell no. 1.

CYI Roger, understand.

HOU Canary, Flight.

CYI Go ahead, Flight.

HOU Send us a definite Gemini MAIN, please.

CYI Roger, this is Gemini MAIN.

S/C Okay, starting the hydrogen on no. 2.

CYI Roger.

S/C Okay, starting the oxygen on no. 1.

CYI Roger, understand.

S/C The hydrogen complete to one, slow into no. 2.

CYI Flight, this is Canary. I don't think we much of that information on the FDI. We just may make it on the Cryo range.

HOU Okay.

S/C Okay, Canary, the fuel cell is complete. The Platform should keep up on the line.

CYI Roger, would you place your Cryo switch to O_2.

S/C Roger, O_2.

CYI Okay, Cryo switch H_2.

S/C Roger, H_2.

CYI Cryo switch OFF.

S/C Roger.

CYI Okay, we are less than a minute to our LOS here, and still looking good from the ground. Both vehicles are real good and I think they will talk to you a little bit more on the FDI later on, you were cut out over Antigua at LOS. And we don't have enough time to talk about it here.

S/C Okay, we are going to FC2 and aligning the Platform.

CYI Roger, understand.

HOU Canary, Houston Flight.

CYI Go ahead, Flight.

HOU LOS, Bravo, Gemini.

CYI Roger. We have C-band LOS. Gemini LOS

END OF TAPE

This is Gemini Control Houston, 16 hours 52 minutes into the flight. We have had no additional contact with the Gemini 11 spacecraft since our last report over the Canaries. Power situation remains unchanged. A word or two might be said about the S-11 experiment that the crew will perform this morning, calls for sequence 02 and sequence 03, which is the airglow photography experiment of the northern and the southern hemisphere respectively. The airglow to be photographed is about a 15 mile thick layer which is primarily based about 60 miles above the earth. Some photographs taken on Gemini 9 indicate that there may be still another layer, slightly higher, between 90 to 150 miles. The photograph was-the airglow layer was first reported on by astronaut John Glenn. He saw it quite clearly although he was not forewarned to any extent on it's appearance or what to expect. Glenn described it as a haze layer lying above the terrestrial horizon, which is exactly what it looks like. Scott Carpenter made some very good estimates of it's visual brightness and the height of the layer above the horizon. Gordon Cooper in his Mercury 9 flight made some remarkable colored photos of the layer. It is the intent of the S-11 experiment to extend these earlier observations through filtered photographs and to look primarily at three wave lengths on this particular flight, 55 77 angstroms to record the green light of atomic oxygen, and 58 93 angstroms to record the yellow light of atomic sodium.

The filters of the camera to be used, are arranged so that the picture is split right down the center with a vertical dividing line. And the picture on one side of this line being recorded when the oxygen green light on the other side and the sodium yellow light. The new layer, which is expected to be found on the range of 6300 anstroms, will be recorded upon both sides of the line. The ultimate aim of the experiment is of course to achieve a better understanding of the earth's upper atmosphere. The relationship between the airglow and other phenomena in the upper atmosphere, is quite complicated but it is certain that the airglow layer is a very active region. It's influenced strongly by winds, by turbulence and by tidal motions of the regions immediately below. And at 16 hours 56 minutes into the flight, this is Gemini Control Houston.

END OF TAPE

This is Gemini Control Houston, 17 hours 7 minutes into the flight. During the Canarvon pass, which we are out of now, a few minutes ago listed the report on the crew status. Pete Conrad advised that both crew members had had a hearty breakfast of bacon squares and cinnnamon toast. He also reported their water gun count now at 804 counts, about evenly divided between the two. He said each man had had about four hours of sound sleep last night. There is some conversation during the Canarvon pass regarding RCS, ration control systems thrusters, the temperatures of those thrusters. Conrad advised that they had had the RCS heaters on throughout the night. Apparent the temperatures on the area around the thrusters running a few degrees below normal. This is explained by the fact that the spacecraft is docked to the Agena, thereby shielding the thrusters from the direct rays of the sun. These are the kind of readings that we saw on the flight of Gemini 10. Roughly in the mid-50's as opposed to a configuration where they'd be exposed to the direct rays of the sun and the temperatures would be up in the high 50's or perhaps 60. Therefore, the RCS heaters remain on just to keep those temperatures in the mid-50 range. Here is the tape from Canarvon.

S/C Go ahead.

HOU Roger, we're go.

S/C Roger. Ready for the crew status report, okay. Command pilot ate meal fourth day, meal A, and he ate everything but three bacon cubes and 6

cinnamon toasts. The pilot, he ate the fourth day, meal A, all but 4 bacon squares and 2 cinnamon toasts.

CRO Roger

S/C (garbled)

CRO Didn't catch that. Please say again.

S/C 804

CRO Roger.

S/C Both crew members slept 4 hours

CRO Roger

S/C We have gyro compass to TDA south, and one member standing by to power down the Agena, and do our S-11 sequence 02.

CRO Roger, you copy flight?

HOU Affirmative

CRO We have transmitted PX.

S/C Canarvon, 11

CRO Go ahead

S/C Roger, about 8 hours into the flight, we had our RCS ring A light come on and we went to RCS. The heaters, we slept with them all night, and we've just been checking now, and we had the heaters on all night, but we show that we need /RCS heat on both rings.

CRO Roger.

S/C Also, Canarvon, when we cycle the circuit

breakers. We can't see any power drop on our amps.

CRO Roger.

HOU Canarvon from flight.

CRO Go ahead, flight.

HOU Those temperatures look alright to you, there? RCS temperatures?

CRO We'll check on it.

HOU Canarvon, give us an Agena main.

CRO Roger

HOU Canarvon from flight .

CRO Go ahead

HOU You might tell them that the instrumentation on the RCS temps looks good and it does also indicate that he has to continue to work the heater.

CRO Hello, Canarvon

S/C Go ahead

CRO Okay Pete, the instrumentation on the RCS looks good and it appears that you will have to continue to play with the heaters.

S/C Okay, we'll just leave them on.

CRO Rog.

HOU And they're only a quarter of an amp, Canarvon.

CRO Say again?

HOU They're only .25 amps. That's probably why he's not seeing it.

CRO Rog.

CRO Hello, Canarvon.

S/C Go ahead.

CRO The amps that you can draw will be about .25, you probably could'nt see it.

S/C Okay.

CRO He's pumped the O2 tank pressure back up to about (?)

S/C Okay.

CRO 11, Canarvon. We're coming up on LOS

S/C Roger

CRO Roger, Roger

HOU Canarvon, flight

CRO Go ahead

HOU Wouldn't be complete without an LOS main, would we?

CRO (garbled) LOS on Gemini - LOS on Agena

END OF TAPE

This is Gemini Control, Houston, 17 hours 22 minutes into the flight. A word or two on cabin pressures and temperatures throughout the night - cabin pressure held at a very steady 5.05 pounds per square inch. The left suit, Conrad's suit, throughout the night ran between 48 and 49 degrees, that is in the suit at the temperature point. The right suit ran about a degree below that 47.9 at last reading as opposed to 48.7 degrees for Pete Conrad's suit. The cabin temperature, the overall temperature, meanwhile, has hung very steadily between 77 to 79 degrees throughout the night. The Flight Director, Lynn Lunney, in conversation with some of his backroom experts, has decided to recommend to the crew that Dick Gordon take with him a dry cloth during his EVA exercise to clean off the windows. Which primarily, Pete Conrad complained about earlier as being quite hazy, even dirty. Much more so than he said was the case during his Gemini 5 flight when some hazing was noted. There are several cloths approximately the size of wash cloths in the spacecraft. They are used for general mop-up - whatever is needed. They are dry cloths, and in this particular case, the cloth will be stowed and will be analyzed when they are back down on the ground. We have had no additional contact with the crew and it is 17 hours 24 minutes into the flight. This is Gemini Control, Houston.

END OF TAPE

This is Gemini control Houston 17 hours 37 minutes into the flight. We have had no contact since Canarvon. Over the states in this next pass which will occur about seven minutes from now. We'll pick it up actually through Grand Turk. Grand Turk will haul it up in to the Bermuda circle before it moves across the Atlantic. The crew will be performing the S-11 airglow photography experiment. The equipment includes a 70 mm general purpose Maurer camera, an F stop of 0.95. It's a fast lens to shorten the exposure time. The film magazine with a focal plane filters attached. The camera contains 12 feet of Eastman 103 D, as in dog, spectroscopic film. There are two filters one filter looking at 5500 angstroms on one side and the other side looking at 5893 angstroms. The second filter, this corrects some earlier information, the second filter will look at the 6300 angstroms region. Also during the stateside pass the.. both the ground and the crew will take a close look at the Agena clock to see if, in fact, the Agena clock is itself slipping slightly, losing a small amount of time, or if it lost some time earlier. There was some discussion about it late yesterday. Or wether the problem is in the telemetry coming off that particular circuit. A series of commands has been set up to look at this specific clock problem within the Agena. This is Gemini control Houston.

END OF TAPE

This is Gemini Control, Houston, 17 hours 52 minutes into the flight of Gemini 11. The crew has been in conversation via our downrange Eastern Test Range station, and Pete Conrad has given quite an explicit explanation of the precise problems that they have encountered with the radar. He said he noted some / drift in the radar system beginning about an hour and 5 minutes into the flight. It was at that time that he stoped using certain values showing up on the radar when he could see that they were obviously false for the visual fix on the target vehicle. He points out well into the conversation that there is no problem about getting these message acceptance pulse or map lights back while in the docked configuration. Apparently it is only in the undocked that the system is somewhat erratic. The Flight Director still believes it is in the return circuitry from the Agena and apparently is an acceptable situation. Here is how the conversation goes as we moved across the Eastern Test Range.

> Roger, we have been looking at your Agena since last night and there seems to be some sort of anomaly in the clock system. We don't know whether it is the clock itself, the accumulator that stores the impulses from the clock, or the TM readout that we get down from the Agena. We are planning that your next pass over Carnarvon to have you turn your encoder off, we will send up

some information to the Agena and then read it out on your pass over the States and try to establish if there is any problem at all with the Agena clock. Over.

S/C Houston, 11.

HOU Go ahead, 11.

S/C Test 11 is complete.

HOU Roger. Did you copy that information on that Agena clock test?

HOU Gemini 11, Houston.

S/C Go ahead.

HOU Roger, did you copy the information concerning this Agena clock test we are going to run over Carnarvon?

S/C Yes, we did.

HOU Roger. Have you got time to talk about this map problem now?

S/C Okay.

HOU Roger, what we would like to do, we have been analyzing the problem here on the ground - we'd like to send up our thoughts and get your concurrents or any comments that you have on it. First of all, we have been able to determine down here that the Agena seems to have responded to all the commands that you sent it. Even though you have not received any map, we have received the maps on the ground

when you sent the commands. Over.

S/C Okay.

HOU When the spacecraft had no indication of radar lock during your S26 docking radar, the encoders were locked on, as the L-bands were commanded and the maps were received. Even though you weren't receiving radar lock-on indications at that time, we indicated that you were locked and the L-band commands were being executed.

S/C Okay, now our radar analog display was not showing that we were locked on nor was the digital readout out of the computer showing that we were locked on. So our maps may have been getting in, but our radar was not reading correctly to us either.

HOU What was the light at this time, was it ON or OFF?

S/C The light was OFF.

HOU Roger.

S/C The lockon light was OFF and we received no map light. And then later, we would still have the lockon light OFF and we got a map when we got in real close.

HOU On these occasions was your radar locked on? At that time, were you getting range and range rate?

S/C No.

HOU At any time on your original rendezvous when you were attempting to switch the antenna, did you notice either an improvement or a degradation that lead you to believe that you were or were not actually switching antennas?

S/C Everything was going just fine and then the radar azimuth and elevation wandered off about 3 degrees indicating that the target was moving right and up, and I started to go after it and realized looking out the sight that it was not doing that. I did try to switch antennas right there and it never would switch and from that time on which was about 40 elapsed time into the rendezvous which would be about an hour and 5 minutes total, we never did have good radar azimuth and evaluation after that. The elevation came back in but the azimuth never did.

HOU Roger, and during this time, the range and range rate was good.

S/C Yes, it was good but it was doing quite a bit of wandering itself especially range rate analog.

HOU Roger, do you feel then that the map lights and the erroneous FDI indications are part of the same problem?

S/C No, we had not sent any commands to the Agena prior to this, and therefore, the first time we tried to send a command to the Agena was to change the antennas when we noticed the problem, and we never got a map light.

HOU Roger.

11, Houston, we are going to work with the information that you told us now but our first opinion is once again that all the commands you are sending are getting even though you don't seem to be able to get a map light onboard the spacecraft.

S/C Do you realize that while we are docked we are getting maps just fine. It is only while we are undocked .

HOU Roger, we understand.

S/C Houston, do you read?

HOU That's negative, 11. Say again.

S/C Roger, we are standing by to ..... 18:00.

HOU Roger.

11, Houston, during your S-26 experiment are you saying that you could never get the radar to lockon. You could never get range or range rated information at that time?

S/C It locked on once about 20 feet from the

S/C vehicle and it never locked on again after that.

HOU Roger.

S/C After that sometimes we got a map light and most of the time we didn't . .

HOU Roger, we don't see any real problem that is going to hurt either your tethering or any other portion of the mission right now, but we are continuing to work on it down here.

S/C Okay.

ANT LOS, Antigua

END OF TAPE

This is Gemini Control Houston 18 hours 7 minutes into the flight. In the recently completed pass across the Canary station "Pete" Conrad waxed nostalgically about the Canary area where he apparently worked at least one earlier mission. This is how the conversation went.

HOU	Canary Cap. com AFD
CYI	AFD, Canary
HOU	Okay, coming your way.
CYI	Roger.
S/C	Canary has cap com Agena.
CYI	Roger, Canary
	Have S-band track, TM solid Gemini
	Both vehicles are go.
	We have C-band track
S/C	Roger.
CYI	Gemini 11, Canary, you need not answer. We
	show you as go on the ground. We'll be moni-
tori	toring you...your experiment
S/C	Roger, we're at 2 minutes and ten seconds. We'll
	be pitching up to $3\frac{1}{2}$ degrees per second in 5 minutes.
CYI	Roger
S/C	Flight, Canary, Bravo Alpha zero seven is reading
	689 on the cam.
CYI	Say Again, the measurement number.
S/C	Bravo Alpha zero seven. Cryo O tape measure.

CYI 68 got it.

HOU That's 6 8 9 flight.

S/C Want me to pump it up?

HOU Yes, have him pump it up.

CYI Okay.

S/C 11 to Canary.

HOU Go ahead Canary

CYI Okay, you want to turn on your O_2 tank heater?

S/C Okay,

CYI Okay, it looks like it has dropped down a little bit. Now I'm going to hit you with a TXer.

S/C Okay

CYI Canary to 11

Go ahead.

S/C Say hello to everyone down there for me, will you? Please.

CYI Sure will.

S/C Thank you.

CYI They all said to drop in and see them sometime.

S/C Oh, I'd sure like to come back.

Stand by, we're going to $3\frac{1}{2}$ degrees, in ten secs.

S/C Roger.

HOU Flight Canary

CYI Go ahead...

HOU Looks like he's turning his O_2 heater off Bravo Alpha zero 7 is reading 824 on the cam.

CYI Alright.

HOU And we would like an LOS main, please Canary.

CYI Roger.

Canary has LOS Gemini

END OF TAPE

Gemini Control Houston, 18 hours 22 minutes into the flight. Our status is unchanged since their last report. We have no additional tape. The spacecraft is now beginning it's sweep across the Indian Ocean. This is Gemini Control Houston.

END OF TAPE

This is Gemini Control Houston, 18 hours 37 minutes into the flight. During the night, the heart rates of the two crew men got down in the low 50's. This was during the period of solid sleep duration of about 4 hours. Since being awakened, they have each run about 75 beats per minute, and their respirations are running about 15 per minute. All in all, the flight surgeon is quite pleased with the crew status. He finds them alert and rested. He says that each man has consumed about 3 pounds of water, which is slightly above the planned amount. The flight surgeon is also quite pleased with the thoroughness of the crew status reports as they've been received. The crew is now in touch with Canarvon. Here is how that conversation is going.

HOU Canarvon from flight

CRO Go flight

HOU You all set for that load?

CRO Affirmed

HOU Okay, that's about all we have for you, Bill. He'll be taking those sub-tank pictures.

CRO Rog.

CRO AFD, Canarvon

HOU Go ahead, Canarvon

CRO Roger, our S-band just went red. I don't think we will have it for this pass.

HOU Copy.

CRO Canarvon cap com, AFD

HOU Go ahead

CRO Canary sent a TX.

HOU Say again.

CRO I say, Canary sent a TX.

HOU Roger, we'll turn TM on it.

CRO Carnarvon has acquired contact.

HOU Roger Carnarvon

CRO Flight Carnarvon

HOU go

CRO Okay, the Agena is go, we still have a little trouble locking up on Gemini.

Hou Rog.

CRO Load the (garb)on Gemini

HOU Transmit a TX

CRO Roger

HOU Gemini is go

CRO Rog.

HOU Carnarvon from flight

CRO Go ahead flight

HOU He'll need to get encoder off and SPC enable after the load, Bill.

CRO Roger.

CRO 11, Carnarvon

S/C Go ahead, Carnarvon

CRO Roger. Last night, we had an Agena clock jump

about 4 hours and 30 minutes and we'd like to try to determine whether or not the problem is in fact in the Agena clock itself or in the telemetry system. So if we can, we check up a load of 16 command words and we'd like to have the first 8 or track all 16 be executed, over the states this next pass. The commands are pitch, yaw minus, pitch yaw plus, and pitch yaw low rate and pitch yaw high rate. This will probably slow them up on the time levels. We are to believe the preleminary clock or believe the spacecraft clock? Do you copy that?

S/C Okay, Bill, we were just in the middle of Apolo figure.

CRO Roger. Copy what I said?

S/c Yes, I copied it.

CRO Okay, turn your encoder on while we pass the load in.

S/C Okay, encoders going on.

CRO Okay. Transmit the load, flight.

CRO Hello, Carnarvon

S/C Go ahead

CRO Okay, we transmitted the load and we are compare.

S/C You've got a what?

CRO You've got a good load

S/C Okay

CRO Okay, the first command should execute over the States about 7 minutes after you get acquisition.at Texas.

S/C Okay, now you don't want to turn the Agena back on or anything. Is that correct?

CRO Standby, I want to send SPC enable. Okay you can turn the encoder back on.

S/C Okay, the encoder is back on. Do you want us to leave the Agena on till it passes by the States. Is that correct?

CRO (garbled)

HOU Yes, you can just leave the ACS on. You can mount it to the single, Bill.

CRO Roger.

HOU Carnarvon from flight

CRO Go ahead

HOU In the flight plan, he wants to turn the ACS on in 19 hours. He can go ahead and use this any way he wants to, and we should be able to get his commands over Texas and see how they work.

CRO Okay.

CRO Hello, Carnarvon

S/C Go ahead.

CRO This command we sent you, Pete, doesn't have any effect at all on the flight plan. I think you're suppose to see ACS on about 19 hours, isnt it?

S/C Right. We'll just go ahead with the flight plan, then.

CRO Roger. Carnarvon has LOS both vehicles.

Gemini Control Houston here again. The sub-tank photos that Conrad has referred to several times now, have occupied the crew for the past 35 to 40 minutes. They have an additional 25 to 30 minutes of work due. You heard Pete Conrad say that they would probably complete the photography of some tanks containing liquid, meaning liquid fuel, in the adapter section by the time they reach the States. The cameras recording this action as the spacecraft is yawing in various positions pitched, rolled, recording the sloshing effect or precisely whatever effect is going on in the tanks. It came from the Mercury 8 spacecraft and the Mercury 9 spacecraft we're advised by. And the authority for this advice is Mr. Jack Kroehnke, the night news center manager of the Houston News Center. The plan is that Gordon will recover these cameras during his EVA this morning, and return them to Conrad in the spacecraft. At 18 hours 44 minutes into the flight, this is Gemini Control Houston.

END OF TAPE

Go T

Gemini Control Houston 18 hours 52 minutes into the flight. No additional contact since Carnarvon. Our status remains as it was during the last report.

END OF TAPE

This is Gemini control Houston 19 hours 7 minutes into the flight. And our flight continues with nary a hitch. No new status reports since our last contact via Carnarvon. This is Gemini Control Houston..

END OF TAPE

This is Gemini Control Houston 19 hours 22 minutes into the flight. And we have just heard from the crew that the first malfunction of a piece of spacecraft equipment has cropped up."Pete" Conrad reports that the number 8 thruster seems to be, well, as he put it, "pooped out". He says he is getting virtually no thrust out of it. He suspected for sometime that something was a little wrong in it. He elaborates on it considerably in a conversation which is still going on as the spacecraft proceeds across the states. The crew is there is some question too, on whether the cameras, the movie cameras, set up to record the tank sloshing action in the Apollo sub-tank test which has been going on for much of the past hour and a half. Just how effective that might be one of the stations noted no current flowing on that particular circuit. They were looking at TM. But apparently the test was rather cyclical in nature and the crew was flipping the on and off button. So, it is just possible they did get the desired effect. This too is elaborated on in this conversation. Let's listen now.

HOU	Gemini 11 Houston
S/C	Go ahead Houston
HOU	Roger, Could you please varify for us that your camera circuit breaker is on?
S/C	Which? The Apollo sub-tank camera circuit breaker?
HOU	That's affirmative.
S/C	Yeah, it's on.
HOU	Roger, On your pass over Carnarvon we did not

copy any current on that particular circuit.

S/C Uh Oh! Well we were (clicked)ing cameras and we did the whole experiment.

HOU Roger.

S/C Circuit breakers been on all that time. We've got a little anomaly for you.

HOU Go ahead.

S/C Okay, we've got a number 8 thruster that's not up to snuff. I haven't bothered to find out whether it's completely out or not. I suspect that it is not hardly putting out anything.

HOU Roger. 11 Houston. In regard to this camera power, were you cycling your sub-camera on and off over the Carnarvon pass. Over.

S/C Were we cycling on and off?

HOU Affirmative.

S/C It might only come on once or twice while we were actually over Carnarvon.

HOU Roger, that's probably the problem right there.

S/C We did a great deal of camera cycling prior to Carnarvon and then we were in sort of the wait period there. I'm sure we turned it on once or twice over Carnarvon though.

HOU Roger, they didn't monitor you continously. But the majority of the time they were looking they

did not see any current flow in that circuit.

S/C Okay. We did check the circuit breaker several times during that experiment. It never came off or anything .

HOU Roger, we've got some information if you are ready to copy, concerning the window wipe, over.

S/C Go ahead.

HOU Roger. If your time line permits during the umbilical EVA we recommend that you use a dry rag and wipe half of the command pilots' window, while you're changing the 16 mm film pack. Or as time permits somewhere in that sequence. Later evaluate the results to determine if you want to wipe the remainder of the window later in the EVA. And if you do, do so when you get the opportunity. We'd like you to retrieve the rag for evaluation but suggest you attempt to stow it to decrease any possible out-gassing into the cabin. One possibility here is the waste container bags that you have in your pedestal Volkswagon pouches. Over.

S/C Roger. We're going to do that. I estimate that 50% of my window dirt is on the inside of the outer pane. However, the outer pane is, outside of the outer pane is covered pretty badly. My window is almost useless for photography.

HOU Roger, how about the pilot side?

S/C It's pretty dirty too. But it is not quite a s bad as mine.

HOU Roger.

S/C What we are trying to do now Al, is catch a little nap prior to EVA prep.

HOU Sounds good, we'll hold up on the conversation then.

S/C Okay.

HOU 11 Houston

S/C Go ahead.

HOU One last comment here, Can we get you to turn on the sub-camera and also the camera circuit breaker. Just for about 10 seconds and we'll monitor it here on the ground and see if you have a problem or not.

S/C Okay, stand by. The camera is on at this time.

HOU Looks okay 11. Apparently the problem was in the monitoring at Carnarvon. They probably weren't looking when you were operating the camera. Looks good here.

S/C Okay.

LOS Antiqua

S/C Yeah, we intend to power down here for the next 40 minutes and start the EVA prep on time.

HOU Roger and could you give us any information as far as what you did do as far as trouble shooting the number 8 thruster.

S/C During the Apollo sub-tank flying it direct I noticed that when I got..wait a minute I've got it written down here..yaw left I got yaw right. I think that's number 8 isn't it?

HOU That's affirmative.

S/C Okay, I was getting a good healthy roll out of it so I suspected it was just about out of snuff. Problems I just thought I'd mention to you.

HOU Roger, 11.

S/C The other thing we did determine that our voice tape is running we just don't have any light.

HOU Roger, understand it's running but your light is not operational.

S/C That's good.

HOU 11 Houston, would you also check your O_2 pressure. Over.

S/C Okay.Yeah, it's about 670. We're going to just leave it the way it is. We're going to sleep here and we'll pump it up when we start EVA prep.

HOU Roger.

END OF TAPE

This is Gemini Control, Houston, 19 hours 37 minutes into the flight. We have had no additional conversation with the crew. You recall as they left the States last time, their was an agreement that there would be about a 40 minute period where they would just relax and take a little nap before they began the rather intense work leading up to the EVA. On the No. 8 thruster problem, that will be worked a little later in the flight. The plan is to exercise it over Carnarvon to see how much thrust if any it is putting out. In past flights, we have, in Conrad and Cooper's flight, August a year ago - they lost at least two thrusters. I believe they only had partial use on a third in the course of their eight day mission. The No. 8 thruster figured very prominently in the difficulties that Neil Armstrong and Dave Scott had in the flight of Gemini 8. It was the same thruster that stuck in an open position, and eventually it was discovered that it was that thruster which put them into a high spin rate. The problem here is of course, is rather different. There are several approaches - several different tests that can be made to see if the problem is in the electrical circuitry controlling the No. 8 thruster or if it is a mechanical valve closing proposition. These possibilities will be explored over Carnarvon during this pass. At 19 hours 39 hours into the flight, this is Gemini Control, Houston.

END OF TAPE

This is Gemini Control, Houston, 20 hours and 1 minute into the flight of Gemini 11. The crew now is in a rest period for nearly 30 minutes. It is expected to go on for another 10. It was Pete Conrad's estimate when he left the Canaries which is the last time we heard from them. The first piece of activity they will do in the start of EVA preparation period which will begin 15 to 20 minutes from now will be a purge of the fuel cells. They will also start cycle their primary B and secondary A coolant pumps ON and OFF. They will go through a platform alignment at Carnarvon they will get a GO for 30-1 flight. And they will be given planned landing area update information also at Carnarvon. They will get a sunrise update for their extra-vehicular activity coming later in the morning. During the Apollo sump tank test earlier this morning, the Gemini 11 crew used about 40 pounds to carry off the maneuvers required getting the tanks in the proper position for photography. At present - have onboard about 440 pounds of fuel remaining, 440 pounds. The No. 8 thruster which will come in for additional conversation when we reach Carnarvon in about 5 to 6 minutes is located at the 8 o'clock position on the spacecraft. It would be down behind Pete Conrad and to his left. This is Gemini Control, Houston.

END OF TAPE

This is Gemini Control, Houston, 20 hours 7 minutes into the flight. Within the next minute, the Carnarvon station is to acquire Gemini. It should be an interesting pass. It will also be a reasonable pass. It is slated for something over 9 minutes. We are going to attempt to follow this pass live, we think it will be a rather full pass. Full in the since of discussion. Carnarvon does have acq aid now but there is no conversation. It should be momentarily, lets cut out there. No conversation yet. We do have a solid TM lockup via Canary.

HOU Does your surgeon think their awake?

CRO That's affirm, flight.

HOU Okay.

CRO Gemini 11, Carnarvon.

S/C Go ahead, Carnarvon.

CRO Roger, wanted to bring you up-to-date on this experiment we ran on the Agena. The ground indications are that the clock in the Agena did in fact skip four hours plus. So we are going to bias ... on that time. And we would like to flush out the memory now, so if you want to turn off the encoder, we will send you a load with all max time labels.

S/C Okay, encoder is off.

HOU Roger.

CRO Flight, Carnarvon.

HOU Go.

CRO Go for 3-1 as far as we are concerned.

HOU Okay. Standby.

Okay, Carnarvon, we are GO here.

CRO Hello, Carnarvon.

S/C Go.

CRO Okay, you have got a good load and we have transmitted SPC. You can turn the encoder back on.

S/C Roger, encoder back on.

CRO And we are giving you a GO for 30-1.

S/C Roger, we are GO here. Be advised that we start our EVA PREP.

CRO Roger. I've got a small PLA update for you when you are ready to copy.

S/C Okay, wait one.

Okay, ready to copy.

CRO Okay, the weather in all three areas is good. SEP maneuver is required. The bank angles are roll left 85 and roll right 95 for all three areas. First area is 16-1, 23:43:48, 21 + 12, 27 + 17. Area 17-4, 26:34:12, 20 + 36, 26 + 43, Area 18-4, 28:09:34, 20 +50, and 26 + 48.

S/C Roger, copied.

CRO Okay, on your EVA, your time is 24:02:09. That's sunrise plus 10 minutes.

S/C Say it again, Bill.

CRO That's 24:02:09.

S/C Roger, 24:02:09.

CRO Roger.

HOU Flight, Carnarvon.

CRO Go.

HOU Do you want to go ahead with this OAMS thruster check here?

CRO No, just tell them that's a recommendation to be done when ever he can.

HOU Okay.

CRO 11, Carnarvon.

S/C Go ahead.

CRO On this No. 8 thruster when you get a chance you might try turning circuit breaker off and yaw left and see what happens. And also you might try your secondary drivers if you haven't already.

S/C Okay, we will - we weren't too concerned until we were going (garbled) off the Agena. We have been pretty busy.

CRO Rog. Flight, Carnarvon.

HOU Go.

CRO Okay, the memory readout confirms that (voice fades) and it was all good.

HOU Okay, very good, Bill. I think you got it all done.

CRO Flight, Carnarvon.

HOU Go.

CRO I assume they purged the fuel cells. Do you want us to get a Cryo quantity?

HOU Yes, confirm that they did purge them and get a Cryo quantity.

CRO Roger.

11, Carnarvon.

S/C Go ahead.

CRO Did you go ahead and complete your fuel cell purge?

S/C No, we haven't done it yet.

CRO Okay.

One minute to LOS.

S/C Roger.

HOU Carnarvon from Flight.

CRO Go ahead.

HOU LOS Main, please.

CRO Roger.

Carnarvon has LOS.

HOU Roger.

This is Gemini Control, Houston, 20 hours 17 minutes into the flight. During that Carnarvon pass, we were watching the electrical summary table with telemetry coming in on it. And it shows the Main Bus Voltage reading 25.3. The amp level totals 37.2 from all stacks. The Cryo-oxygen pressure - I'm sorry the Cryo oxygen tank pressure - I'm sorry the Cryo oxygen tank temperature minus 224 degrees F, and the Cryo hydrogen tank temperature is minus 399 degrees F. The Cryo hydrogen quantity is 87.1 percent. We did not get valid data on the Cryo oxygen quantity. The crew is well into their EVA preparation now, which will occupy them for the next several hours. This is Gemini Control, Houston.

END OF TAPE

This is Gemini Control Houston, 20 hours 37 minutes into the flight. We have passed over and northeast of the Canton Island station. We were set up for remoting but no conversation ensued so we have no new development since our last conversation via Carnarvon. This is Gemini Control Houston.

END OF TAPE

This is Gemini Control Houston 20 hours 52 minutes into the flight of 11. Guaymas acquired several minutes ago and here is how the conversation is going.

HOU Guaymas go remote

GYM Guaymas remote.

HOU Gemini 11, this is Houston standing by at Guaymas.

S/C Roger, Houston we're progressing right along here.

HOU Roger, have you completed your fuel cell purge over.

S/C No, we haven't done that yet. What we'd like to do is wait till about an hour before the EVA and we'll get it in then. Okay? Would you prefer we get it in right now?

HOU This is Houston, wait one.

HOU Gemini 11, Houston that sounds like a good idea to wait just before EVA, over.

S/C Okay. We're on page 4 of our check list, about half way down if you're interested in where we are. We're just getting ready to unstow the ELSS.

HOU Roger, watch that light.

S/C Again?

HOU Nothing.

Texas go remote, Guaymas go local.

HOU Texas is remote

GYM Guaymas is local

Antigua is LOS

LOS Antigua

This is Gemini Control Houston. A relatively quiet pass as you have observed. We are standing by but we don't really expect very much conversation during this pass, as the crew moves through their very detailed check list. The total time allotted for EVA preparation is 4 hours. We're about three hours into that period. I'm sorry, we're not that long, we're exactly one hour into the four hour EVA preparation at this time. Let's monitor as the spacecraft/is now approaching Bermuda we've still got 2 to 3 minutes more of the possibility of conversation.

(Dead Air)

Bermuda go remote.

Bermuda remote.

Houston 11.

Houston go ahead.

S/C I understand our EVA time is 24 0209 is that correct?

HOU Roger. Sunrise plus 10 240209.

S/C Okay, we're way ahead of schedule here so we're going to power down and get a little rest.

HOU Roger.

S/C Have you got anything while / we've got some time off right now.

HOU Gemini 11 Houston. 30 seconds till LOS at Bermuda.

S/C Roger.

HOU Canary from flight

Canary, do you read?

This is Gemini Control Houston, 21 hours 22 minutes into the flight of Gemini 11. We've had no discussion with the crew since the start of the Canary pass. We're now down in the lower southeastern edge of the Kano acquisition area and we don't expect any discussion in this pass across Kano. The crew is still taking a little breather and we're still running probably 30 minutes ahead of their 9-page detailed check list, in the process leading up to extravehicular activity. Questions were raised yesterday about how many dockings the crew went through. The number is four. The initial docking which Pete performed, then there were two dockings associated with the S-26 Ion Wake experiment. We understand that each pilot performed one of those. Then a fourth docking by Dick Gordon and they remained in the docked configuration overnight. It's been commented too, about this being an all-navy flight; the first time that we've had two pilots from the same branch of service, and it goes much further than that - the capsule communicating chore seems to be divided between two navy people. Lieutenant Commander, Alan Bean worked the night side and Commander John Young is working the day side. In addition, the crew leader for this particular flight is navy Captain Alan Shepard. So, it certainly is a navy flight from start to finish, as pertaining to the pilot role. Even the backups Neil Armstrong and Bill Anders - Neil was a navy pilot while in service during the Korean War and Bill Anders, while an airforce officer, is a graduate of the naval academy, I believe. At 21 hours, 25 minutes into the flight, this is Gemini Control Houston.

END OF TAPE

This is Gemini Control, Houston, 21 hours 37 minutes into the flight. We have just moved through the Tananarive zone of acquisition. Again, without any discussion. The crew earlier got some suggestions on how to give all of us a better understanding of the acknowledged problem with the No. 8 thruster. The problem seems to be that the thruster, as Pete Conrad put it, just wasn't putting out any thrust, certainly not the full 25 pound capability. The crew - it was suggested that the crew isolate the thruster, that is, turn off the other thrusters and fire just No. 8 in order to calibrate whether it was producing any thrust or just how much. Pete noted at one point when he had called for the No. 8 thruster authority that he got some roll in the spacecraft. It apparently was very slight order of roll. And of course, he can maneuver the spacecraft so that he can use other combinations of thrusters in order to get any kind of yaw authority he needs. At this time we do not know if the crew has carried out the test to see what the - if they can shed any more light on the No. 8 thruster. But at the same time, it is not a problem of sufficient order to pose any threat to the scheduled activity coming up in about 2½ hours - the EVA. At 21 hours 39 minutes into the flight, this is Gemini Control Houston.

END OF TAPE

This is Gemini Control, Houston, 21 hours 52 minutes into the flight. The spacecraft has been over Carnarvon the last 6 to 7 minutes but no conversation has ensued just as has been the case the last 4 stations we have crossed. The crew is still very busy with their Flight Plan or check list. We are noting over Carnarvon that there is no heartbeat or respiration trace coming through. The Flight Surgeon reported this. And at closer examination of the check list shows that there is a point in the check list where they actually take off or electrically remove those circuits from the TM Bus, so this would account for this loss of heartbeat and respiration information. The outages expected to run something like 5 minutes while certain pieces of equipment are hooked up and tested in the EVA preparation buildup. Carnarvon, on the ground, the station is reading out all the systems and giving both vehicles a very resounding GO. At 21 hours, 53 minutes into the flight, this is Gemini Control, Houston.

END OF TAPE

This is Gemini Control Houston, 22 hours 7 minutes into the flight. The Gemini 11 crew is still maintaining pretty rigid communication silence. They're in the Canton area and still no discussion from them. This is about the fifth station where we had no voice contact. We don't plan any additional discussion until they're over the states. That will be some 20 minutes from now. This is Gemini Control Houston.

END OF TAPE

This is Gemini Control, 22 hours 22 minutes into the flight. Gemini 11 is on its 14 revolution just come into range of the California tracking station. We are still not attempting to contact the crew as the spacecraft passes over the tracking station. They are busy with the EVA preparation, and we are not attempting voice communication with them. Telemetry shows all systems GO on the spacecraft. This is Gemini Control.

END OF TAPE

This is Gemini Control, 22 hours 37 minutes into the flight. Gemini 11 has just started its 15th revolution. It is within range of Bermuda. The Flight Surgeon reported he has started picking up good solid data again, biomedical data. It shows that both pilots are active, heart rates in the 80's. There was a brief conversation between Pete Conrad and the Cap Com, John Young during the pass over the states. We will play that tape for you now.

CAL California is remote.

Guaymas go remote, California go local.

GYM Guaymas remote

CAL California local.

HOU Gemini 11, Houston in Texas standing by.

S/C Okay Houston this is 11. We are going to purge the fuel cells at this time. We got so far ahead of the game here that we were dumping oxygen overboard while Dick was on the ELSS. We've put him back on the ships system again and we've stopped at page 7. We are going to hold up until we get to the next darkness pass before we go any further. We are just a couple of steps of being ready to go.

HOU Roger.

S/C We're letting the manual heater cool off a little bit. We're running on all down, we're only

indicating about 480 down but we'll run it on up ahead a little bit. Commence hydrogen purge, cell number 2.

HOU Roger.

Texas go remote.

Guaymas local.

TEX Texas remote.

GYM Guaymas local.

S/C Oxygen in number one, the oxygen in number 2.

HOU Roger.

S/C Oxygen going to number one.

HOU Roger

S/C Okay, fuel cell purge is complete, cross over is off, manual heater going back on.

HOU Roger.

Gemini 11, Houston. We want a cryo H_2 readout for about 30 seconds.

S/C Roger, H_2.

ANT AOS Antigua

HOU Gemini 11, Houston, over.

S/C Go ahead

HOU Roger. You are now on the ships system you are no longer on umbilical right now, is that correct?

S/C That is right. We put Dick back on the ships system. We were just losing oxygen then but we could afford it. Houston, 11.

HOU Go ahead.

S/C Roger. When we were doing the Apollo sump tank camera business, we were suppose to hit at 10 feet per second out-of-plane to the south and it would take us back out again 15 feet but in doing the experiment we wandered off, so I was curious as to - we actually put a little retrograde maneuver and a little down and I was wondering what our orbit is now.

HOU This is Houston. We'll get it immediately.

S/C Again John.

HOU Your in a 166.4 by 154.6 Pete.

S/C You cut out say it again.

HOU You are in a 166.4 by 154.6, over.

S/C Okay.

GT LOS at Grand Turk.

HOU Gemini 11, Houston. Thirty seconds until LOS at Antigua.

S/C Roger, Houston. We are going gyro around 90 degrees here after a bit and get ready for the next rev.

HOU This is Houston, roger.

END OF TAPE

This is Gemini Control, 22 hours 52 minutes into the flight. Gemini 11 now off the west coast of Africa, just passed through the Canary Island range. We have a very brief bit of tape from the Canary Island pass. We will play that for you now.

HOU Roger, Canary

CYI TM solid Gemini

HOU Roger

CYI C-band track

CYI Both vehicles are go

HOU Roger

CYI Gemini 11, Canary

S/C go, 11 here, go ahead

CYI Okay, we show you go on the ground, we have nothing special for you at this time.

S/C This will be our last chance with you for this period We'll see you in the morning, be good.

CYI Roger, thank you.

CYI Flight, Canary

HOU Go ahead

CYI Okay, Bravo Alpha 07 cyro, tank pressure is -came down to 883.

HOU 883

CYI Looks like it peters off now.

HOU Okay

CYI It looks like it is yawing around to a +90 at this time.

HOU	Kano to remote
CYI	AFD Canary
KNO	Kano is remote.
CYI	We have acquisition
HOU	Say again Canary, this is AFD
CYI	We have LOS
HOU	Roger
HOU	Gemini 11, this is Houston at Kano, stand by.
S/C	Roger Houston, we just gyro compassed an EVA south and we're just standing by to pick up the EVA again.
HOU	Roger
CYI	Canary cap com, AFD
S/C	Canary..
CYI	Roger, you're messages are on the way
S/C	Roger, For some reason we were taken out of conference during that pass.
CYI	Okay, we'll run a check on it.
S/C	Say again, this is 11
HOU	This is Houston, we didn't call you, over.
S/C	Somebody else came up on a gesture
HOU	Roger.

This is Gemini control, 22 hours 56 minutes into the flight. Gemini 11 is still within acquisition at Kano, and will be for about another minute and a half. We'll continue to stand by through this Kano pass.

HOU Houston, Gemini 11, one minute .... Gemini 11 Houston, one minute until LOS.

S/C Thank you Houston Situation indicator should pick us up.

This is Gemini Control, 22 hours 58 minutes into the flight and Gemini 11 has had loss of signal at Kano.

END OF TAPE

This is Gemini Control, 23 hours 27 minutes into the flight. Gemini 11 is over Carnarvon where they have just been given a GO for depressurizing the spacecraft. We have the tape from the Tananarive pass plus the conversations at Carnarvon and we'll play those for you now.

HOU Tananarive, Houston,go remote.

TAN Tananarive remote.

HOU Gemini 11 this is Houston through Tananarive and standing by.

S/C Roger Houston.

HOU Good morning.

S/C Houston how do you read 11.

HOU Eleven this is Houston read you five by. How about us?

S/C Read you same. I have a question for you. We figure that at 23:36:09 we'll roll right 80 degrees and go inertial on the Agena and that should leave us at the proper angle at sunrise plus 4 minutes. Will you check that?

HOU Roger understand. Roll right 80 degrees at 3609 and we'll check that out for you.

S/C Thank you.

HOU Gemini 11, Houston, over.

S/C Go ahead Houston.

HOU Roger. I would like to put your roll jet switch to pitch. Over.

HOU So you have full roll authority.

S/C Okay.

HOU You should - we figure that you'd be roll 16 degrees right at sunrise and that ought to be okay.

S/C Yes but thats not the problem John. The problem is Dick will be in a hardsuit, suit one at that time and he can't control the Agena on and off.

HOU Roger understand.

S/C What we'd like to do is roll right 80 degrees at 23:36:09, that should be the same thing, shouldn't it?

HOU Roger that is affirmative.

S/C Okay that is what we are going to do.

HOU Gemini 11, we're one minute to LOS at Tananarive.

S/C Roger. Standing by.

S/C This is Gemini 11. How do you read us on VOX, over?

HOU Read you loud and clear Pete.

S/C Well sir, how me John?

HOU Loud and garbled Dick.

S/C How do you read me now?

HOU About the same. You - we can understand you.

S/C Okay.

TAN Tananarive has LOS.

CRO Agena is GO and Gemini is GO.

HOU Roger.

CRO C and S band track.

HOU Roger.

CRO He's got the cabin - the ECS O_2 tank pressure around 940.

HOU Roger.

CRO O_2 quantity is 81.7, right - left secondary bottles are good.

HOU Roger.

CRO Flight, Carnarvon

HOU Go ahead.

CRO He looks good for cabin depress.

HOU Okay.

CRO Gemini 11, Carnarvon.

S/C Go ahead Carnarvon, 11 here.

CRO Roger, we'd like you to send reset timer reset command 060 to the Agena.

S/C Roger. We're doing that at this time.

CRO Okay.

S/C Roger, it is sent. We got a map.

CRO We'd like to give you a GO for depressing the cabin.

S/C Okay. We're GO up here. We have about 5 steps to complete, which we will do after we go inertial.

CRO Roger.

CRO One minute to LOS.

S/C Roger.

CRO Carnarvon has LOS both vehicles.

HOU Roger.

END OF TAPE

This is Gemini Control, 23 hours 40 minutes into the flight. Gemini 11 has just come within range of Canton. Hawaii has overlapping acquisition here and we will standby through the Canton and Hawaii passes for any conversation.between the crew and the ground.

HOU Gemini 11, this is Houston at Canton.
Standing by.

S/C Roger, Houston.

VOX (Unreadable)

This is Gemini Control 23 hours 45 minutes into the flight. We are still standing by. We are about to loose acquisition at Canton.and acquire at Hawaii. There was a brief bit of VOX conversation in this Canton pass between the crewmen but the quality was very bad. We will continue to stand by through Hawaii.

HAW Flight, Hawaii.

HOU Go ahead.

HAW Roger, we have contact.

HOU Roger.

HAW All systems are go.

HOU Roger.

HAW We are showing indications that the pilot is hyper-ventilating at the present time. Respiration rate 36.
Gemini 11, Hawaii standing by.

S/C Roger, Hawaii

S/C We are all ready to go.

HAW Okay.

S/C We are going to have to run this ECS heater ON because this ELSS keeps venting. We have to run it all the time to keep the pressure up.

HAW Okay, we copy that.

HAW We show your pressure good here on the ground and the quantity about 80 percent.

S/C Roger.

HAW And your current looks good.

S/C Okay.

HAW Flight, Hawaii.

HOU Go ahead.

HAW Okay, his respiration reading is averaging about 26 right now.

HOU Okay.

END OF TAPE

H.W Looks like Dick is pretty careful in all his movements. He has'nt knocked off any switches yet, that we can determine from here.

HOU Roger

HAW We're showing intermittent jet activity on the Agena.

HOU Roger, how does the Agena look?

HAW Oh, it looks real good, it's just trying to hold a inertial attitude.

HOU Okay

HAW We've got a G.O.S off and horizon sensors off. Showing about 940 on cyro O_2 pressure

HOU Roger

HAW Okay, we're showing cabin depressed right now.

HOU Roger

HAW 11,Hawaii. One minute to LOS. All systems look good on the ground. You're go for you stateside EVA. Good luck.

END OF TAPE

This is Gemini Control, 23 hours 56 minutes and the California station is just acquiring Gemini 11. Cap Com John Young has put in a call and told him that we are standing by. Standby.

Pete Conrad reports the cabin is depressed at this time. There has been no further conversation yet, other then Pete Conrads report that he has depressurized the cabin. The Cap Com in Hawaii noted that cabin pressure was down to one half pound as they lost signal at Hawaii. It is now completely depressurized. We'll continue standing by.

This is Gemini Control, 23 hours 58 minutes into the flight. Gemini 11 has been acquired by the Guaymas station now. Still no conversation between the crew and the ground. We'll continue to standby.

Gemini Control at 24 hours into the flight and we're two minutes away from hatch opening time. Still no conversation with the crew yet. We are acquiring at Texas at this time. We will continue to standby.

Gemini Control, a report from Pete Conrad that they are standing by to open the hatch. They just ran a communications check. They were fairly good at that time. Pete Conrad reports just passing south of San Diego, California. Everything is ready to open the hatch at this time. They are opening the hatch right now. The hatch is locked open. Report from the crew of a beautiful day.

Communication is a little bit choppy right now. Dick Gordon is standing up at the present time. Dick Gordon reports the spacecraft looks clean toward the aft part of it. Pete Conrad apparently holding his feet to aid him and help him from floating out. Dick Gordon has the S-5, the nuclear motion experiment out now. S-9 experiment. We'll now go to the crew conversations and bring you that through the remainder of this pass.

CONRAD Okay, you got something to hold her up to you.

GORDON Yes.

CONRAD You hold on to it - you are on your own.

GORDON Okay.

Let me get some more tether.

CONRAD Sorry, seems like it takes a long time.

END OF TAPE

GORDON Okay, just a minute I will have her tethered here.

CONRAD The S line is tethered to me and the jump tether's from you. Here is your tether.

GORDON I am holding it.

CONRAD Throw it

GORDON Okay.

CONRAD Have you got a hold of that

GORDON No, wait a minute. Just a second.

HOU Texas local.

GORDON Get this line down between my legs and out of my way.

CONRAD ...here it is. Give me a hand.

GORDON All right now, ready to play this.

CONRAD I am going to hang on to you by your feet instead of the tether. I can't get that other thing.

GORDON Okay.

CONRAD All right. Now what are you doing?

GORDON I going to put the towel in.

CONRAD Okay, I got a hold of you.

GORDON Okay.

CONRAD You in?

GORDON Yes.

CONRAD Now the question is, what next?

GORDON Oh, ... the tether, I guess.

EVA camera coming off. Scratch 02.

CONRAD Let me hang onto you.

GORDON I have got to rest here a minute though.

CONRAD Okay.

GORDON I am pooped.

How much tether have you got left?

CONRAD Oh, I am hanging onto you right now. Do you want me to hang onto you?

GORDON How much tether do you have out?

CONRAD Tether do I have out?

GORDON Yes, that is what I mean.

CONRAD I am hanging onto you right now. Tight.

GORDON Well, let's go get that tether. Let me have some tether out.

CONRAD Oh, okay. I will tell you when I let you go.

GORDON Hold on about 3.7.

CONRAD Got about 6 feet of tether out.

GORDON That looks like it ought to be enough.

CONRAD Okay.

I have got your back foot here. I don't any more. You are on your own. Okay, your foot is on the window. Go ahead and turn the camera on.

CONRAD Did you get it?

GORDON No, I missed it. Pull me down Pete.

CONRAD Okay. ... right back.

GORDON Easy.

CONRAD I just gave you a little pull there.

GORDON Easy. I can't see where I am going.

CONRAD You are going in back of the adapter there.

GORDON Back a little more.

CONRAD How are you doing?

GORDON Pull me up.

CONRAD Okay.

GORDON ...again.

CONRAD Okay, let me know when you get a go.

GORDON Let me go some.

CONRAD You got it.

Are you hung on something out there?

GORDON Solid, good show.

CONRAD The cameras are running. How are you doing?

GORDON All right, I guess.

CONRAD Tired?

GORDON ...I guess.

CONRAD You sure are. Ride'm cowboy.

Why don't you sit down and take a rest?

GORDON What.

CONRAD How are you doing?

GORDON Tired, Pete.

CONRAD All right, just rest. You have got plenty of time. You have only been out 9 minutes.

GORDON I am going to turn off those cameras. Okay, the camera is off.

CONRAD Take it slow a little bit. Take your time.

GORDON Hey, you ought to see Houston. It is lightening like a stop light.

HOU Houston roger.

CONRAD The voice recorder is not on. ... right now. ..take a breather. How are you doing?

GORDON I am very tired.

CONRAD Well, just relax. Old boy working hard, huh?

GORDON Yes.

CONRAD You look awfully funny, setting out there in front of the spacecraft, I will tell you that.

GORDON Okay. See if you can adjust the hatch angle. The sun is shinning right on my head.

CONRAD Take it easy. How are you doing? You are breathing awfully hard...

HOU Gemini 11, Houston.

CONRAD ...take a rest.

GORDON Okay.

CONRAD You will get that all right. You are way ahead.

HOU Gemini 11, Houston.

CONRAD Go ahead, Houston.

HOU Roger. Can you go off VOX. Over. We can't get through to you.

CONRAD .. say again Houston.

HOU Roger. Would appreciate it if you stay off VOX so we can get through to you. Over.

CONRAD Okay. Dick is breathing hard. And he is resting up in front there.

HOU Roger, he keeps the VOX cut in all the time.

CONRAD He has got the tether...just sitting and resting...he is about to get all right...docking bar.

HOU Roger. Gemini 11, Houston. Gemini 11, Houston. You can turn on your manual heater. Over.

S/C Roger. Will do.

HOU Roger.

This is Gemini Control. Flight Surgeon Dr. Charles Berry reports both pilots in good shape despite some high breathing rates for a time on Dick Gordon. His respiration rates are coming down now. They reached a high of 40. Pete Conrad's respiration rate peaked at 22. Heart rates during this initial part of the EVA, Gordon 162, Conrad 120. Dick Gordon still considerably below heart rates that he had in the chamber during some of the simulations and heavy work there. We will stand by for further conversation between the crew and the ground.

END OF TAPE

Gemini Control at 24 hours, 16 minutes. We still have about two minutes of acquisition time left at Antigua.

HOU Gemini 11, Houston. One minute and 30 seconds to LOS at Antigua.

S/C Roger, Houston. I got him back in the cockpit. He's resting. We've got the tether hooked up.

HOU Gemini 11, Houston. Did you get the docking mirror up, over.

S/C No, we decided to skip that one.

HOU Oh, roger.

Gemini Control, 24 hours, 19 minutes. We've just had LOS at Antigua. We'll play now the tapes of the initial part of this EVA, up until you started hearing the conversation of the crew. We'll play those tapes now.

California go remote.

CAL California is remote.

HOU Gemini 11 this is Houston at California. Stand by. Gemini 11 this is Houston at California. Stand by. Over.

S/C Roger, Houston. We have the cabin depressed. We're just standing by to open the hatch.

HOU Roger. Guaymas remote. California local.

S/C We've thrown it over on VOX. How do you read us?

HOU Read you loud and clear.

S/C Roger. You the same. We're just standing by to open the hatch.

S/C We're just passing San Diego - just off of San Diego.

HOU That's right.

S/C VOX Shall we open the hatch?

The hatch cannot be opened till you push away.

Shall we try that one more time over there?

Yes.

HOU Texas remote. Guaymas local.

TEX Texas remote.

GYM Guaymas local.

S/C VOX It's unlocked.

There you go. Good show.

I'm opening the hatch.

Okay, the hatch is coming open.

Okay, hey, listen, that mirror is in the way.

Hold the hatch. Hold the hatch steady right there.

It's in the locked position.

HAW Make sure you don't overlap your recorder. Open it slowly.

S/C Hawaii?

HAW Right. Go ahead.

S/C (squawk)

HAW Okay. Is it open?

S/C VOX Oh, it's a beautiful day.

HAW Roger.

S/C VOX ....Put your hand in the cockpit.

Eeeasy.

S/C VOX You're not doing so bad. You guide me, Will you?

Okay.

Good deal.

Where is it?

Right up short of you.

Lot's of pressure out there and you're in pitch.

How are you doing? Can you stand? Okay.

Hey, hey, you're standing on the MDIU. That's a boy.

Keep your feet off it. Okay, now.

Now I'm also level with your side. I will make sure I'm hooked on to you.

Yep. I'm hooked on to you right now, Pete.

You are?

Yep.

Okay, I got you.

Stand by, I'm hooking up the fuel on to you.

This is Gemini Control, 24 hours, 22 minutes. We're just about to acquire at Ascension. We'll stand by and bring you the conversation from the Ascension track.

HOU Gemini 11, this is Houston at Ascension. Standing by.

S/C Houston, we're just resting.....

HOU Oh, roger.

Gemini Control at 24 hours, 25 minutes. Hatch opening time was 24 hours, two minutes, eight seconds. We'll continue to stand by at Ascension.

END OF TAPE

HOU Gemini 11, this is Houston. How is everything going?

S/C Well we are just resting. We're getting ready to do D-16 but I'll have to say goodby now and rest here. Can rest another 3 minutes.

HOU Roger that is good. I know how it is. Gemini 11 this is Houston. Could you check your O_2 pressure?

S/C It is 625, the ECS heater has been on ever since you said to put it on.

Gemini Control, 24 hours 28 minutes. We still have about 4-1/2 minutes of acquisition time at Ascension. We will continue to standby.

HOU Gemini 11 this is Houston. One minute until LOS at Ascension.

HOU Gemini 11 this is Houston. Want to turn the manual heater off, over.

HOU Gemini 11, Houston, over.

S/C Say again.

HOU Roger. Want to turn the manual heater off. Over.

HOU Over.

This is Gemini Control, 24 hours 33 minutes into the flight. We are out of range of Ascension now. Next station to acquire will be Tananarive at 39 minutes 58 seconds. We got no medical data at Ascension. That station is not set up for biomedical monitoring. The next station where we will get biomedical data is Carnarvon, Australia. We are due to acquire there at 24 hours 55 minutes 43 seconds elapsed time. This is Gemini Control.

END OF TAPE

This is Gemini Control, 24 hours, 39 minutes into the flight and Tananarive is just about to acquire the spacecraft. Has acquisition at this time. We'll stand by, putting in a call to the spacecraft now.

HOU Gemini 11, this is Houston, over at Tananarive.

HOU Gemini 11, Houston, at Tananarive, over.

S/C Roger, Houston, Gemini 11.

HOU Roger, this is Houston. Would like to put your O2 heater to auto over.

Conrad Roger. Listen, I just called Dick back in. We are repressuring the cabin right now. He got so hot and sweaty he couldn't see.

HOU Roger.

Conrad So we're back inside now and we've got about (garbled)

HOU Roger.

Conrad And the heater is manual at the moment.

HOU Roger.

Gemini Control, 24 hours 41 minutes into the flight. Pete Conrad the Command Pilot has instructed Dick Gordon to return to the spacecraft. He is in the spacecraft now and they are repressurizing. Pete reported that Dick was getting hot, prespiring very heavily and couldn't see so he brought him back into the spacecraft and they are repressurizing, at this time. We will continue to standby through this Tananarive pass. At 24 hours 42 minutes into the flight this is Gemini Control.

This is Gemini Control, 24 hours 44 minutes into the flight. We are continuing to standby at Tananarive. Apparently Pete Conrad has called off this umbilical EVA. The Flight Director does not expect that it will be attempted again. To recap a bit, Dick Gordon did get the tether attached between the Agena and the Gemini. The tether is attached. This is Gemini Control.

HOU Gemini 11, Houston, over.

S/C Go Houston.

HOU Roger. Is your heater on auto yet, over?

S/C Yes I've got the heater on auto and we're rigged up with the ELSS.

HOU Roger. I know how it is, when it gets where you can't see you got to close the lid.

S/C Okay, you are right John.

HOU Gemini 11, Houston. One minute to LOS at Tananarive.

This is Gemini Control, 24 hours 48 minutes into the flight. Tananarive has had LOS on Gemini 11. The next station to acquire will be Carnarvon at 24 hours 55 minutes 43 seconds. This is Gemini Control.

END OF TAPE

This is Gemini Control, 24 hours, 53 minutes into the flight. To recap on this EVA, the hatch was opened at 24 hours, 2 minutes, 8 seconds into the flight while in range of the Texas station. As near as we can determine in the Control Center, the hatch was closed 35 to 40 minutes later. Dick Gordon did retrieve the S-9 nuclear emulsion experiment. He attached the camera. He got out, went up to the Agena, straddled the Agena and put the tether on. At this time Pete Conrad, the Command Pilot evaluated the workload here as quite heavy, the breathing rate on the EVA pilot Dick Gordon was high, he was perspiring quite freely. Pete Conrad brought him back to the hatch, to the cabin, to rest and between Ascension and Tananarive made the decision to close the hatch, repressurize the spacecraft and call off this EVA. A decision which the Flight Director and the Mission Director wholeheartedly agree with. Now you've heard considerable mention during these last passes of the heater. This is a normal thing, has nothing to do with this EVA termination. This heater is used to keep the oxygen pressure up. To keep it gaseous, to keep it up and the heater is on a duty cycle and if left on too long could burn the heater up. So, they keep a close watch on this. When the O_2 pressure drops to a little bit low, they ask them to turn the heater on, bump the pressure up and then they want to turn the heater off after the pressure has risen sufficiently so that the heater is not burned up.

We are about to acquire at Carnarvon now and we'll standby for that pass through Carnarvon. This is Gemini Control.

CRO Flight, Carnarvon.

HOU Go ahead.

CRO Okay, the cabin is back up to 5.2 and Delta P's in the suit at zero and the O_2 tank pressure reads 650.

HOU Roger.

CRO Gemini 11, Carnarvon.

S/C Go ahead Carnarvon.

CRO Roger, we are standing by here. Looks like you've got the cabin repressed.

S/C Roger. We are just untangling all the junk.

CRO Roger.

S/C Let me recap for everybody. We stayed out about 44 minutes there and Dick got so much sweat in his right eye that he couldn't see anymore out of his right eye. Therefore, I didn't want him to get any hotter, doing any more work back there with the possibility of not being able to see out of the other one. So I called him in. We retrieved the S-9 and we hooked up the tether onto the Gemini from the Agena and we quit there. We retrieved the outside EVA film and the inside EVA film and that is where we stand right now. We are just resting and he is getting vision back in his eye and we're cleaning up the space-

craft, preparatory for a garbage dump later.

CRO Roger. What did you think about the system performance?

S/C Say again.

CRO What did you think about the performance of the systems?

S/C Say again Carnarvon.

CRO I say what did you think about the performance of the systems?

S/C The spacecraft systems are fine. I'll let Dick tell you what he thought about the ELSS.

GORDON The ELSS itself was okay. I was on medium flow, until after I got into the tether operation, where I went to high flow and obviously the cooling flow was pretty good but it rolls down my hand I have to stop (garbled) for a while.

CRO Roger we got that.

CRO How is the eye doing now Dick?

GORDON It is okay now. It's just normal flushed.

S/C I think the biggest problem that we encountered with the sweat is that even though he rested for five or six minutes it would not evaporate and he had no way of getting it out of his eye.

CRO Roger.

CRO Flight, Carnarvon

HOU Go ahead.

CRO We don't have any indication of S or C band track.

HOU Roger.

CRO Flight, Carnarvon.

HOU Standby Carnarvon.

HOU Carnarvon from Flight.

Carnarvon from Flight.

CRO Roger Flight. The parameter you asked for in the MI, X-ray roger 01, engineering units reads 48.9.

HOU Roger send us a contingency India on the Agena.

CRO Roger. It is on its way.

CRO Flight, Carnarvon.

CRO Flight, Carnarvon.

HOU Go ahead.

CRO That pitch horizon sensor, D041, it's reading 0 percent and it has been since acquisition.

HOU Pitch horizons sensor, what is the number?

CRO Delta 041.

HOU Roger.

CRO Flight, Carnarvon.

HOU Go ahead.

CRO Okay, our indications are that the C and S bands on the Agena are in fact on. However, we can't seem to lock on to the signal.

HOU Roger.

CRO It may be due to antenna pattern. I don't know what the attitude is.

HOU Roger.

END OF TAPE

CRO We are coming up on LOS, Gemini 11.

S/C 11, roger. We are still wrestling with the space in here.

CRO Roger.

HOU FLT Hawaii, from Flight..uh, Carnarvon, from Flight.

CRO Go ahead, Flight.

HOU FLT Send us a contingency Delta on the Agena. From your LOS proper.

CRO Roger. We have telemetry LOS, both vehicles.

HOU FLT Roger.

This is Gemini Control, 25 hours, 4 minutes into the flight. We have LOS at Carnarvon now. During this pass, Pete Conrad recapped for the people here in the Control Center the EVA portion of the flight. They placed the time hatch opening, to hatch closing, at 44 minutes; reported they did retrieve the S-9, the nuclear emulsion experiment; did hook up the tether; did retrieve the film from the cameras. However, they knocked off at that point, got back in, and repressurized. The Flight Surgeon, Dr. Charles Berry reports that over this Carnarvon Station the heartrates are returning to normal on both crewmen. He reported rates on Dick Gordon at about 100, on Pete Conrad about 80. The next station to acquire Gemini 11 will be Hawaii, at 25 hours, 21 minutes, 6 seconds elapsed time. This is Gemini Control.

END OF TAPE

This is Gemini Control, 25 hours 21 minutes into the mission. Hawaii has acquisition of Gemini 11. There has been no conversation yet but we'll standby throughout this Hawaii pass. for any air to ground transmission. This is Gemini Control.

HAW Hawaii has solid TM.

HOU Roger.

S/C Houston this is 11. You are coming through very poorly.

HAW Eleven, this is Hawaii.

S/C Oh, hello Hawaii. Read you loud and clear now.

HAW Okay. I don't know who was calling you.

HAW Flight, Hawaii

HOU Go ahead

HAW Looks like his biomed instrumentation circuit breaker might be open.

HOU Okay, we'll have to check.

S/C Say again Hawaii.

HAW Would you check your biomed instrumentation circuit breaker?

S/C Okay. It was off, we must have hit if off.

HAW Okay, thank you.

S/C We'll probably dump the garbage over the states. We have most of it packed away.

HAW Okay. You are going to have to boost up that O_2 tank pressure a little bit.

S/C Yes it's on its way up now.

HAW Okay. Your quantity looks good. Secondary two bottles are okay.

S/C Roger.

HOU Hawaii from Flight.

HAW Go ahead.

HOU Hey, you might tell him there is no big hurry on that, take their time whenever they are ready.

HAW Okay.

11, Hawaii.

S/C Go ahead.

HAW There is no big hurry on jettisoning all that equipment. Just kind of take your time, relax. Anytime will do.

S/C We're in fairly good order here. We have - as a matter of fact if you would like to copy, we'll tell you what we are going to jettison.

HAW Go ahead.

S/C Okay. We got both ELSS straps, both Y-connectors, one 3-foot umbilical, one pair of debris cutters, EVA long camera cable, EVA camera mount, two Appolo sump tank covers, wrist mirror, all lanyards, we also jettison the bags that we planned to jettison the EVA hoses were stowed in and we dumped some general garbage at the first hatch

opening.

HAW Okay, fine.

HAW How much weight was all that general garbage?

S/C It was 2-food bags with garbage in them, no I guess it was 4-food bags.

HAW Okay, we copy that

S/C Okay, that was about it.

HAW One minute until LOS, standing by.

S/C Roger, do we have permission to go ahead and depressurize over the states?

HAW You are GO from here.

S/C Check.

HAW Flight, Hawaii

HOU Go ahead Hawaii

HAW I gave him a go for repress over the states, okay.

HOU Yes that is okay. Are you satisfied?

HAW Roger, everything looks great.

HOU Roger, how is that O_2 pressure?

HAW They built it up quite high. It is about 80 right now.

HOU Okay.

HAW They went off the manual heaters, about 30 seconds ago.

HOU Roger.

This is Gemini Control, 25 hours 30 minutes into the flight. Hawaii has lost signal, California has acquired though and we'll standby live through this stateside pass.

HOU Gemini 11 this is Houston at California, over.

END OF TAPE

HOU — Gemini 11, Houston at California, over.

S/C — Go ahead, Houston, 11 here.

HOU — Roger, just stand by.

Conrad — Ok, we're just getting ready to depressure and dump this garbage.

HOU — Houston, roger.

11, this is Houston. You plan to jettison the ELSS to, don't you? Over.

Conrad — Over the side, yes.

HOU — Guaymas remote, California local.

GYM — Guaymas is remote.

CAL — California local.

Conrad — Houston, 11 is depressing at this time.

HOU FLT — This is Houston, roger.

Conrad — Houston the cabin is depressed and the hatch is open.

HOU FLT — This is Houston, Roger.

HOU — Texas remote, Guaymas local.

TEX — Texas remote.

GYM — Guaymas is local.

CAP COM — Gemini 11, Houston. Is your manual heater on? Over.

CAP COM — Gemini 11 Houston. Do you want to check your manual heater? It looks like you are venting 02, over.

Conrad I see the heater is on, we'll get it off. We just closed the hatch, and we are just locking it down, right now.

CAP COM Houston, roger.

Conrad 11, Houston, we are are repressured at this time.

CAP COM This is Houston, roger.

Conrad Going back to manual heater.

END OF TAPE

HOU Texas go local.

ANT Antigua LOS.

S/C Hello Houston, 11.

HOU Houston, go ahead.

S/C Roger. We have got the cabin repressurized.

HOU Roger. You can go ahead and power down and we will do S-11 at the normal time. Over.

S/C Roger. It will be a little while, John...we still have some restowing to do and do you want us to power down platform?

HOU Roger. At your discretion. Over. No hurry.

S/C Okay.

HOU Did you have any luck wipping the windows? Over.

S/C We didn't try.

HOU Roger.

END OF TAPE

HOU Gemini 11, Houston. A minute and a half to LOS at Antigua.

S/C Roger.

This is Gemini Control, 25 hours, 54 minutes into the flight. Antigua has lost acquisition of Gemini 11 now. Gemini 11 down off the east coast of South America in its 17th revolution. During this pass over the states Pete Conrad and Dick Gordon depressurized the spacecraft again and jettisoned the EVA equipment, repressurized the spacecraft. The next station to acquire will be the Rose Knot tracking ship at 25 hours, 57 minutes, 17 seconds it will be overlapping coverage there between the Rose Knot and the Ascension Island station. We'll come back up at acquisition time at the Rose Knot and go through that pass. This is Gemini Control.

END OF TAPE

This is Gemini Control, 25 hours, 57 minutes into the flight. The RKV has acquired Gemini 11. There has been no voice transmission yet between the Cap Com and the flight crew. We'll stand by live through this pass for any conversation. This is Gemini Control.

RKV — Gemini 11, RKV. We have nothing for you. We are standing by.

That's the first time their gyrocompassing to 180.

HOU — Roger. RKV, Cap Com, Houston Flight.

RKV — Flight, RKV.

HOU — Send us an Agena main please.

RKV — Agena main, Rog. OK, we show that he has the computer off, but the IMU is on at the present.

HOU — Roger. RKV, we'll have LOS shortly. RKV 11, what's your latitude, longitude?

RKV — 19,039 west.

HOU — Gemini 11, this is Houston standing by at Ascension, over.

S/C — Roger. How about a (garb) update?

HOU — We're getting it right this minute.

S/C — Thank you.

HOU — Gemini 11, Houston. One minute to LOS at Ascension.

S/C — Roger. Houston, 11.

HOU — Go ahead.

S/C (garb) 280000.

HOU Say again, over.

S/C We're going to eat lunch and pick up at 280000.

HOU Roger.

This is Gemini Control, 26 hours, 8 minutes into the flight. Ascension has lost acquisition of Gemini 11 now. Next station to acquire will be Tananarive at 26 hours, 16 minutes, 22 seconds. Very little conversation during this Ascension pass. This is a quiet time in the flight plan - no specific items scheduled. Pete Conrad and Dick Gordon getting their conkpit squared away, restowing some items, and as you just heard, they are getting ready to eat. They informed us that they will pick up the flight plan again at the 28 hour mark. The next two hours will be very quiet, probably not too much conversation but we'll stand by during the passes to pick up whatever there is. This is Gemini Control.

END OF TAPE.

This is Gemini Control, 26 hours 22 minutes into the flight. Gemini 11 just about to pass out of range at Tananarive, on its 17th revolution. We have - the best times that we have at the moment for the hatch open, hatch close time on the equipment jettison depressurization, 25 hours 31 minutes hatch was open, 25 hours 36 minutes hatch was closed. This was for the purpose of jettisoning the EVA equipment. We've checked with the Guidance and Control Officer, Gary Coen, on the number eight thruster. The crew reported low thrust on it earlier this morning. Gary Coen reports the thruster is still working and that there will be a check of this thruster within the next two to three revolutions, probably to try to get a check on this low thrust to determine what the thrust is. We have a tape of a brief conversation at Tananarive and we'll play that for you now.

HOU Gemini 11 this is Houston at Tananarive.

S/C This is 11, go ahead.

HOU Roger, we have this nodal update, over.

S/C Yes sir.

HOU At time 26 plus 41 plus 34 revolution 17, 127.1 degrees east, 1 hour 21 minutes right ascension. Over.

S/C Roger. Say again, rev number please.

HOU Rev number 17, over.

S/C Roger, 17.

HOU Gemini 11, Houston. One minute to LOS at Tananarive.

S/C Roger.

TAN Tananarive LOS.

END OF TAPE

This is Gemini Control, 26 hours, 37 minutes into the flight. Carnarvon has just lost acquisition of Gemini 11. There was a brief conversation between the Cap Com at Carnarvon and Pete Conrad on this pass. We have a tape of that and we'll play it for you now.

CRO Telemetry solid on both vehicles.
Gemini's go and Agena's go.

HOU Roger.

CRO Gemini 11, Carnarvon. We're standing by.

S/C Hello, Carnarvon, 11. Roger.

S/C Carnarvon, our status at this time is we have restowed and we are eating - just starting to eat - and we expect to pick up on the flight plan at 3:00:00.

CRO Roger. What you need is some wine, Pete.

S/C I'm with you.
How about a couple of us?

CRO 11, Carnarvon.

S/C Go.

CRO The pilot's external EKG sensor, we're not getting a regular reading down here. Could you ask Dick to press the sensor against his body?

S/C Which one?

CRO His external EKG.

S/C How's it doing now?

CRO Not any better. Coming in now. Okay, it looks good now.

S/C Now that we dumped the garbage this place looks like the grand ballroom up here.

CRO Oh, you're going to have a lot of fun tomorrow.

S/C Yep. We have a long day today to go yet.

CRO I don't know if you and I can survive a 23 minute pass.

S/C We'll see who wins.

CRO I'm going home to study it.

CRO Flight, Carnarvon.

HOU Go ahead.

CRO Okay, we're apparently having a problem with that external EKG sensor and if you want a reading you're going to have to have him press it against his body. We've lost it again.

HOU Roger.

CRO 30 seconds to LOS.

S/C Roger. Do we have you next trip?

CRO Negative. We'll see you tomorrow morning.

S/C Okay. Thank you.

CRO Rog.

CRO Carnarvon has LOS on both vehicles.

HOU Roger.

END OF TAPE

This is Gemini Control, 26 hours 52 minutes into the flight. Gemini 11 is over the mid Pacific Ocean, has not been within range of a tracking station since leaving Carnarvon. We will acquire at Hawaii in about 5 minutes. This is Gemini Control.

END OF TAPE

This is Gemini Control, 27 hours 7 minutes into the flight. Gemini 11 has just been acquired by the California station. It has passed out of acquisition at Hawaii. Over Hawaii, Pete Conrad reported that he fired the number eight thruster and it sounded like he got a good firing. The test on the thruster will be performed over the states during this pass. We have the tape of the Hawaii pass and we'll follow that through into the stateside pass and monitor the conversation between the crew and the ground during this test. Let's play the tape now.

HAW Telemetry solid Hawaii.

HOU Roger.

HOU Hawaii Cap Com, Houston Flight.

HAW Go ahead.

HOU Jim you might contact the crew, the command pilot. We have a test that we would like to perform TCA-8 over the states and we'll talk to him over California as to what the procedure is. Get his feeling on whether he thinks he can go ahead and do this.

HAW Roger.

Gemini 11, Hawaii.

S/C Go ahead Hawaii.

HAW Roger. Got some questions I would like to ask

in regards to what you jettisoned.

S/C Roger, go.

HAW Okay, what about the sextant bracket?

S/C Yes they are still aboard.

HAW Okay, and the umbilical stowage rack?

S/C That is still aboard.

HAW And the umbilical stowage bag straps.

S/C They are gone.

HAW Okay.

Eleven this is Hawaii. There is a little test we'd like you to try with regards to your TCA number 8 thruster and Houston will talk to you about it over California. They want to know what your feelings are on this, whether or not you'd like to go along with this test.

S/C Sure.

HAW Okay. Are you playing around with that circuit breaker?

S/C That is affirm.

HAW Okay.

S/C Sound like it is firing.

HAW Right, it did.

Looks okay down here now.

S/C Say again.

HAW Looks okay now and it did fire when you fired it.

S/C Yes, I was trying to listen to both seven and eight one at the time to see if they sound any different. They sound the same, they seem to be the same.

HAW Looks like the problem has rectified itself.

S/C Well it may still be a little soft, that I can't tell until I get the Agena on.

HAW Flight, Hawaii

HOU Go ahead.

HAW Okay, he powered up there momentarily to check out his eight thruster and he said he tried seven and eight and they both sounded the same. Then he powered down again.

HOU Roger.

HOU You said you confirmed it on the ground also.

HAW That is affirmative. We saw thruster activity.

HOU Okay. By the way, in reference to your earlier query, I'm satisfied with your reports Jim.

HAW Thank you very much. On this TM control switch, do you want them to go back to command or leave in real time and acq aid.

HOU Standby.

HOU Hawaii from Flight.

HAW Go ahead.

HOU We just as soon go to command.

HAW Okay. Eleven this is Hawaii. Will you go to command on your TM switch?

S/C Roger. Command.

HAW I want to transmit a TX.

S/C Roger.

HAW Okay, we have one minute to LOS. All systems are GO on the ground.

S/C Gemini 11.

CAL California has acquisition.

FD Californis go remote.

CAL California is remote.

HOU Gemini 11 this is Houston at California, over. Gemini 11 Houston at California, over.

HAW Hawaii has LOS all parameters.

HOU Roger.

HOU Gemini 11 this is Houston at California, over.

S/C This is 11, go.

HOU Roger, are you ready to copy this TCA number eight test procedure. It consists of ten steps, over.

S/C Be with you in a second John.

HOU Okay and we want to do it over Texas so that

they can get the data in real time telemetry at and look/it.

S/C Okay, lets go.

HOU The first step is spacecraft assumes control with Agena ACS off, that's three commands 300, 350, and 400. Then number two is direct mode, three-attitude drivers to primary, ACME control circuit breakers one and two on, four is yaw left to observe the roll rate effect. As the roll rate exists that's five, open and close circuit breaker number eight and see if the roll rate effect remains. Number six, if you have a roll rate open circuit breaker number seven, number seven, then yaw left for five seconds, number eight, if no thrust switch to secondary drivers and yaw again. Number nine, iff degraded thrust or still no thrust with secondary drivers, pulse in yaw 20 times and number ten, close circuit breaker number seven and yaw left again. Do you want me to say again all after number one?

S/C No, I think we're with you John.

HOU Okay.

S/C Okay you want us to do this over Texas so you can look at it is that right?

HOU	Yes sir, and I'll tell you when you get to Texas.
S/C	Okay.
FD	Guaymas remote, California local.
GYM	Guaymas is remote.
CAL	California local.
FD	Texas remote, Guaymas local
TEX	Texas is remote.
GYM	Guaymas is local.
HOU	Gemini 11, Houston. You are in Texas now.
S/C	Okay. ACS going off at this time.
HOU	Roger.
S/C	Standing by to yaw left on my mark, MARK. Roll right.
HOU	Roger.
CONRAD	We got to open number eight and yawed left and we rolled right.
GORDON	Roger, rolled to the right.
HOU	Roger.
S/C	Yes, we got a soft thruster John.
HOU	Are you on step number six now?
CONRAD	We already did that John.
GORDON	Just did that and number eight thruster doesn't work. It appears to be a little softer than number seven.

HOU Roger.

HOU Did you get the same thing when you tried the last time?

S/C Yes, we got the same thing John. It's just number eight soft.

HOU Roger.

HOU Secondary drivers didn't do it.

S/C Okay, we are going to secondary.

HOU Roger, did you go to secondary after the OAMS power switch was on, over.

S/C Roger. We just went to secondary with OAMS power switch on. We got the same results.

END OF TAPE

HOU Gemini 11, Houston. ECS is back on now, over.

S/C Roger, ECS is back on. We're gyrocompassing, TDA aft, FC 1.

HOU Roger.

HOU Texas local.

S/C Houston, 11.

HOU Yes sir. Houston, over. This is Houston, go ahead. Gemini 11, this is Houston, over. Gemini 11, this is Houston, over. Gemini 11, Houston, over. Gemini 11, Houston, over. Gemini 11, Houston, over.

S/C Go ahead.

HOU Oh, roger. You called? Over.

S/C No, but one thing that's come up here in the last hour or so, we noticed switching through our propellant, our prop gauge, that the temperature side seems to be intermittent. It seems to have an open in it, and almost any one of the selections - it'll jump up and down and go to zero - go to both scale off and come back and then read the temperature correctly.

HOU This is Houston, roger.

(Pause)

HOU Gemini 11, Houston. Could you get a source pressure and a prop quantity? Over.

S/C Roger. The source pressure is 1700 and about

20 pounds. Temperature is 59. And the PQI reads about 41 percent.

HOU This is Houston, roger.

S/C Did you copy my last on the PQI temperature - I mean, on the prop gauge temperature?

HOU That's affirmative. Over.

This is Gemini Control, 27 hours, 27 minutes and Gemini 11 is out of range of Antigua now. The spacecraft will be within range of the Rose Knot at 27 hours and 30 minutes. We'll come up at that time and stand by for the pass over that tracking ship. This is Gemini Control.

END OF TAPE

This is Gemini Control 27 hours 30 minutes and Gemini 11 is within range of the Rose Knot now. We will stand by for conversation over that ship.

RKV Gemini 11, RKV. We are standing by. We have nothing for you.

S/C Gemini 11, roger.

RKV ...RKV, we are showing O_2 tank pressure at 708. Do you think we should remind him to bump it up?

HOU Stand by. 708?

RKV That is affirm.

HOU That is okay, RKV.

RKV Okay.

HOU Send us an Agena main, please.

RKV Roger.
It is now up to 713, so apparently he is doing it.

HOU Is the manual heater on?

RKV Wait one.

HOU Don't ask him. You ought to be able to tell.

RKV Say again.

HOU Can't you tell from the ground.

RKV Yes, we could tell all right, if we had a real good base line on it. But see he was sort of semipowered up there on the last

RKV few summary messages.

HOU No, don't bother. We are not concerned.

RKV No, I wasn't going to ask him. I was just going - you know we have four meters to check out on.

HOU Roger.

RKV RKV. We will have LOS about a minute.

HOU RKV, Flight. Send us an LOS main Gemini, please.

HOU Gemini 11, Houston at Ascension. Standing by.

S/C Thank you.

This is Gemini Control 27 hours 42 minutes into the flight. Gemini 11 is down over the South Atlantic. Just passed out of range of the Ascension Island station. The next station to acquire will be Tananarive in about 7 minutes. This is Gemini Control.

END OF TAPE

This is Gemini Control, 27 hours 52 minutes into the flight. Gemini 11 is down over south Africa on the night side of its 18th revolution, within range of Tananarive now. We'll standby for air ground transmission during this pass.

S/C Hello Houston, 11 here. How do you read?

HOU Read you loud and clear.

S/C Okay. We had a wingman flying wing on us going into sunset here, off to my left. A large object that was tumbling at about one revolution per second and we flew - we had him in sight, I say fairly close to us, I don't know, it could depend on how big he is and I guess he could have been anything from our ELSS to something else. We took some pictures of it.

HOU Roger.

This is Gemini Control, 28 hours into the flight. Gemini 11 has just passed out of range of the Tananarive station. We have no additional information on this object reported by Pete Conrad. He was unable to identify it. He said it was tumbling at about one revolution per second and that they did obtain some photographs of it. The next station to acquire will be the tracking ship Coastal Sentry in the western Pacific

the time 28 hours 15 minutes 7 seconds elapsed. This is Gemini Control.

END OF TAPE

This is Gemini Control at 28 hours 16 minutes and Gemini 11 has just started talking to the CSQ. Here is that conversation.

S/C Okay, we purged the fuel cells at 28:00:00.

CSQ Roger, I'm sending you a TX at this time.

S/C Roger.

CSQ Okay I have a small flight plan update for you when you are ready to copy.

S/C Ready to copy.

CSQ Okay. At Hawaii, at 28:33:04, you'll get a PLA update. S-11 at 29:16:54 sequence 01, load able, do S-11 with platform powered up.

S/C Roger, do S-11 with platform powered up, going to platform G at this time.

CSQ Roger. After the S-11, purge section one then two and then power down. Delete the purge at 31:30. At 29:49:19, sequence 03, load able, last item at CSQ at 31:27:00 we'll have a crew status report. That is the end of the flight plan update. Over.

S/C Thank you. Just give me the time on the purge again.

CSQ Okay, that will be after the S-11, after the first S-11.

S/C Okay, actually they are together there, they

come S-11 sequence 1 and sequence 3.

CSQ Say again.

S/C They run together at times, it will be after the last S-11 you gave me.

HOU That is correct CSQ.

CSQ That is affirmative.

CSQ Flight, CSQ

HOU Go ahead

CSQ That H_2 tank pressure doesn't seem to be going up to much here.

HOU That is H_2?

CSQ It is on the H_2, right.

S/C CSQ, Gemini 11

CSQ Roger, go ahead.

S/C We've got another little anomaly for him to think about. Every time we turn on the cryo quantity, the O_2 or H_2 position we get a very dull valid cycle tone in the earphones which is something new. It started doing that about an hour ago.

CSQ Roger, we'll advise them of it.

S/C Thank you.

CSQ Did you copy that flight?

HOU Copy.

CSQ Hello eleven, CSQ.

S/C Go ahead.

CSQ Okay, would you have the pilot press on his sternal ECG sensor.

S/C I hear you, doing it now.

CSQ Okay, we are getting a good reading on that sensor now.

S/C Okay.

CSQ Gemini 11, CSQ. About one minute to LOS, we'll be standing by.

S/C Thank you.

HOU CSQ from Flight. Send us another Gemini main.

CSQ It is on the way Flight.

HOU Roger.

CSQ Flight, H_2 pressure is reading about 258 on the ground at this time. Do you want them to keep that heater on?

HOU Affirmative.

CSQ Okay.

CSQ Hello Houston Flight, CSQ Cap Com.

HOU Go ahead.

CSQ Okay we've had LOS on all parameters. Both vehicles were GO.

HOU Roger.

This is Gemini Control, 28 hours 23 minutes into the flight. Gemini 11 has lost acquisition at Coastal Sentry. The next station to acquire will be Hawaii at 28 hours 33 minutes 4 seconds. At that time a planned landing area update will be passed up to the crew. Also on this last pass we updated the time of the S-11, the Airglow Photography Experiment. It had been planned for about 30 hours 45 minutes into the flight, it will now be performed at 29 hours 16 minutes 54 seconds. This is Gemini Control.

END OF TAPE

This is Gemini Control, 28 hours, 33 minutes into the flight and Hawaii has acquisiton of Gemini 11. We'll stand by here for any conversation.

S/C Affirmative

HAW Roger.

HAW Gemini 11, Hawaii.

S/C Go ahead, Hawaii.

HAW Oh, roger. All systems are go here on the ground. I have a PLA update for you.

S/C Well, rog. We've been checking on this manual H_2 heater for the last 20 minutes and we're still hanging on till we get it up. Just a second and we'll get it copied.

HAW Okay.

HOU What are you showing on H_2, Hawaii?

HAW Uh, 28.

HOU Roger.

HAW Do you want them to keep it on manual?

S/C Go on that update.

HAW Okay. Area 19-4, 29:45:13, 20 + 47, 26 + 52, bank angle for all areas: roll left 85, roll right 95. Area 20-9, 31:05:24, 20 + 06, 26 + 12. Area 21-3, 32:40:38, 20 + 22, 26 + 35. Area 22-3, 34:15:29, 20 + 43, 27 + 02. SEP maneuver for all areas and marginal weather in 22-3.

S/C This is 11, copy.

HAW Roger.

S/C Hawaii, 11.

HAW Go ahead.

S/C Do you want us to leave the H_2 quantity read position on high. Is that right?

HAW Let me check on that.

Flight, Hawaii.

HOU That's correct.

HAW Okay.

That's affirmative, 11.

S/C Okay.

HAW You're hydrogen tank pressure is rising very slowly.

S/C Yes, we've been noticing it's been taking us 25 minutes to get it up there.

HAW Oh, one more day and then you can quit.

S/C Thanks.

HOU Hawaii from Flight.

HAW Go ahead.

HOU We're showing the L-band beacon is running pretty cool. We'd like to turn it back on for awhile. We'll try it till the sleep period. That's 071.

HAW Oh, roger.

HOU Hawaii from Flight. Send us a Gemini main.

HAW Gemini main, roger.

HAW 11, Hawaii.

S/C Go ahead.

HAW Okay, the temperature on the L-band is getting a little low, will you send 071 for us, please.

S/C Roger, 071, L-band on.

HAW Yeh, we got it. Thank you.

S/C Roger.

HAW Three and a half minutes to dump.

HOU Hawaii from Flight.

HAW Go ahead.

HOU Okay, you can tell him to go back to auto on that H_2 heater for awhile.

HAW Okay.

11, Hawaii, go back to auto on your H_2 heater.

S/C Roger, whoopee!

HOU The pressure rise is normal for this pass.

S/C It's only taken us three quarters of the way around the world to do that.

HOU Hawaii from Flight.

HAW I got ya. Go ahead.

HOU You might tell them their compressure rise is normal for this point of the flight on that one. It just took awhile.

HAW Okay, rog.

HAW 11, Hawaii. Incidentally, the pressure rise is normal for this portion of the flight on

that tank pressure.

S/C Okay.

HAW We have one minute to LOS, standing by.

S/C Okay, we're on the flight plan. We got the update copied and we're standing by to do the S-11 sequence from 1 to 3.

HAW Okay, we'll see you the next time around.

S/C Roger.

HAW Hawaii has LOS. All systems go at LOS.

HOU Roger.

This is Gemini Control, 28 hours, 41 minutes into the flight. Hawaii has had loss of signal but California will be picking up within the next 30 to 45 seconds so we'll stand by through this orbit, touches very briefly on the California and Guaymas stations, and just cuts off the corners of the ring of acquisition on those stations. We'll stand by through those passes.

HOU California go remote. California remote.

CAL California remote.

CAL Houston Com Check, this is California remote.

HOU Go ahead.

CAL We've been released.

HOU Oh, roger. Thank you.

END OF TAPE

HOU Guaymas remote. California local.

GYM Guaymas is remoted.

HOU Gemini 11, Houston in Guaymas. Over.

S/C Hello Houston, Gemini 11 to Houston. Over.

HOU Roger, this is Houston standing by.

S/C Okay.

Houston, 11.

HOU This is Houston. Go.

S/C Roger. This update time on the sequence 03 for S-11, is that sunrise time, 29:49:19?

HOU It is sunrise minus 4 minutes. Over.

S/C Okay. Roger. Thank you.

HOU Gemini 11, Houston. Over.

S/C Go ahead.

HOU Is this tone you get on the O_2 H_2 cyro, is that continuous or does it just last for about 20 seconds when you first switch to it? Over.

S/C It is continuous.

HOU Roger.

S/C It is something new. I never heard it before. About a couple of hours ago, we turned it on from off and it starting putting out this cycle tone; very dull in our ears. Now it may have been there, but I just started noticing it.

HOU Do you think you could sleep with it on? This

HOU is Houston, over.

S/C Oh, yes.

HOU Roger.

Gemini 11, Houston about 10 seconds until LOS at Guaymas.

S/C Roger.

This is Gemini Control, 28 hours 51 minutes into the flight. And Guaymas has loss of signal on Gemini 11. The next station to acquire will be the tracking ship Rose Knot down off the east coast of South America at 29 hours 5 minutes 59 seconds. This is Gemini Control.

END OF TAPE

This is Gemini Control 29 hours 5 minutes into the flight. Gemini 11 over South America just about acquired by the Rose Knot tracking ship. We will stand by for the conversation during this pass.

S/C RKV, Gemini 11. Over.

RKV 11, go.

S/C Are those numbers reading?

RKV Roger, go ahead.

S/C Roger, 9 event.

RKV Roger.

S/C And the ... looks like .11.

RKV Roger, copy. .11.

S/C That is as close as I could read it.

RKV Roger. Flight, did you copy the dosimeter reading?

HOU I copied the rate. Did you have another one?

RKV They had 90 vents and they had .11 rads per hour.

Is that all there is to that report?

HOU Stand by.

That is it RKV.

RKV Okay, mighty fine.

..RKV we will have LOS in about 1 minute.

Looks good from here.

S/C Roger. We are just standing by to S-11.

RKV Roger.

RKV RKV has had Gemini TX LOS.

HOU Roger, RKV.

This is Gemini Control 29 hours 15 minutes and the Rose Knot has lost acquisition of the spacecraft. Gemini 11 is coming up now in about a minute and a half to the night side of this revolution. At the start of this night side, they will be given the S-11 experiment. The airglow horizon photography experiment. This will be sequence 1, photographs of the eastem airglow. By the use of these photographs the experimenters hope to measure the height at which the airglow occurs in the upper atmosphere. The camera used here is a 70-mm camera with a 50-mm lens. This experiment will be conducted throughout this night side. The principle experimenters on the airglow horizon photography are Dr. M. Koomer, Mr. D. Packer and Dr. H. Friedman of the Naval Research Laboratory. The next station to acquire Gemini 11 will be Tananarive at 29 hours 27 minutes 26 seconds. This is Gemini Control.

END OF TAPE

This is Gemini Control, 29 hours, 20 minutes into the flight. Gemini 11 is in the nightside, should be performing sequence 1, the Eastern Airglow of this experiment. Additionally during this pass, sequence 3 will be performed. That's photographs of the sunrise airglow. This part of the experiment will be conducted between Tananarive and CSQ. Sequence 1 is the Eastern Airglow; sequence 3, Sunrise Airglow. This is Gemini Control.

END OF TAPE

This is Gemini Control, 29 hours 27 minutes into the mission. Gemini 11 is coming up on the Tananarive tracking station now. We'll standby for any conversation during this pass.

HOU Gemini 11, Houston at Tananarive standing by.

HOU Gemini 11, Houston standing by at Tananarive.

HOU Tananarive Cap Com, Houston Cap Com. Over.

S/C Hello Houston Cap Com, Gemini 11 here .

HOU Roger, Gemini 11. This is Houston standing by at Tananarive.

S/C Roger. We're in the middle of the S-11 experiment now.

HOU Roger.

HOU Gemini 11, Houston. One minute to LOS at Tananarive.

S/C Roger Houston.

This is Gemini Control, 29 hours 36 minutes into the flight. Gemini 11 has just passed out of range of Tananarive. The next station to acquire will be the Coastal Sentry tracking ship in the western Pacific at 29 hours 50 minutes 9 seconds. This is Gemini Control.

END OF TAPE

This is Gemini Control, 29 hours, 50 minutes into the flight. Gemini 11 coming within range of the Coastal Sentry tracking ship in the western Pacific. We'll stand by at the CSQ for any conversation during this pass.

CSQ — CSQ has TM on both vehicles.

HOU — Roger, CSQ.

CSQ — Gemini 11, CSQ Cap Com. Standing by.

S/C — Roger, CSQ. This is Gemini 11.....sequence 1 to sequence 3.

CSQ — Roger. I'm sending you a TX.

S/C — Okay.

S/C — CSQ, 11.

CSQ — Go ahead.

S/C — Ask Houston, they want us to power down the platform now, don't they?

CSQ — I believe so. Stand by one.

S/C — Okay.

CSQ — Did you copy that, Houston?

HOU — Say again, CSQ.

CSQ — The crew wants to know if you want them to power down the platform at this time.

HOU — Affirmative. Stand by.

HOU — CSQ, Houston Flight.

CSQ — Go ahead, Flight.

HOU — Stand by on that. I think we want to do a purge before we power down. Stand by.

CSQ Roger.

CSQ 11, CSQ. Stand by on that power down.

S/C Roger. Standing by.

CSQ Okay, Flight. He's shut off his OAMS thrusters and the ACS is back on.

HOU Roger.

CSQ Flight, CSQ.

HOU Go ahead.

CSQ He was supposed to have purged after that first S-11.

HOU No, on the second one. Have him purge the fuel cells 1 then 2 and then he can power down.

CSQ Roger. Suppose he's already done it?

HOU Well, there's not much we can do if he has.

CSQ 11, CSQ.

S/C Go ahead.

CSQ Okay, did you purge after that first S-11?

S/C No, we went right through from it to the other one. We'll have to purge now.

CSQ Okay. If you do your purge now then you can power down after the purge.

S/C Okay.

S/C .....the purge.

CSQ Oh, roger. We're copying that.

HOU CSQ, Houston Flight.

CSQ Go ahead, Flight.

HOU I'd like to get a quantity read on the O_2 after he gets through.

CSQ Say again, Flight. I couldn't read you.

HOU I'd like to get a quantity read any time during the purge, on O_2.

S/C Okay, oxygen's on in section 2.

CSQ Say again, 11.

S/C The oxygen's on in section 2.

CSQ Okay, roger.

CSQ Houston Flight, CSQ.

HOU Go ahead, CSQ.

CSQ I will not have a chance to get that cryo O_2 quantity readout prior to LOS.

HOU Say again.

CSQ I say, we will not have a chance to get that cryo O_2 readout prior to LOS.

HOU Okay.

CSQ 11, CSQ. About a minute to LOS. We'll stand by.

HOU Can we have another Agena main, CSQ.

S/C The fuel purge in number 1 is.....

CSQ Hello, Houston.

HOU CSQ, can we have another Agena main, please?

CSQ Roger.

This is Gemini Control, 29 hours, 59 minutes into the flight. Gemini 11 just passed out of range of the Coastal

Sentry tracking ship. The next station to acquire will be Hawaii at 30 hours, 8 minutes, 34 seconds. Pete Conrad and Dick Gordon powering down their spacecraft now. Over Hawaii they will perform the Neurospora, or pink bread mold, portion of the S-4 experiment. This is to determine if a relationship exists between the effects of weightlessness and radiation of white blood cells and Neurospora. This portion over Hawaii will be the Neurospora portion, and will be activated by pilot Dick Gordon. He'll turn a crank on a small unit on his hatch. This will expose the Neurospora to a radiation source. He'll give a time hack when he does this so that the ground control experiment can be performed at the same time. We'll pick up the pass over Hawaii at 30 hours, 8 minutes, 34 seconds. This is Gemini Control.

END OF TAPE

This is Gemini Control, 30 hours 8 minutes into the flight. Gemini 11 coming up on the Hawaii station in its 19th revolution. We'll standby Hawaii for this pass.

S/C Roger standing by.

HAW Okay, about 20 seconds.

S/C Roger.

HAW 5, 4, 3, 2, 1, MARK.

S/C Roger its activated.

HAW Okay, would you place your quantity read switch to O_2 please.

S/C Quantity read, O_2.

HAW Okay, back to H_2.

I have a PLA update for you.

S/C Standby.

S/C Okay, go ahead.

HAW Okay. Area 23 delta, 35 14 19, 20 plus 11, 25 plus 12, bank angle for all areas roll left 85 roll right 95. 24 delta, 36 48 57, 19 plus 57, 24 plus 53, 25-2, 38 24 37, 19 plus 41, 25 plus 07, 26-2, 39 59 57, 19 plus 45, 25 plus 21, 27 echo, 41 31 00, 34 plus 48, 38 plus 20, 28-1, 43 13 35, 34 plus 01, 37 plus 47, 29-1, 45 01 44, 20 plus 16, 26 plus 06, 30-1, 46 37 05, 20 plus 19, 26 plus 11, set maneuver for all areas and

the weather is good in all areas. I have a note for two of these areas. For area 27 echo and 28-1, fire rockets one, two, and three only at 0 degrees pitch attitude. Standby for a minute.

HAW Flight, Hawaii

HOU Go ahead

HAW Okay,are these negative degrees for ball.

HOU That is affirmative.

HAW Okay. Retro ball readings for 27 echo is minus 23 degrees for 28-1 it's minus 27 degrees.

S/C I'm not sure we quite understand those retro ball angles.

HAW We'll check on them for you, standby. What about that flight?

HOU Standby Hawaii.

HAW We've got them thinking.

S/C Very good.

HOU Can we have another Agena main? Hawaii we'll be with you in a moment.

HAW Roger Flight.

S/C The guy that made them up probably went home on the last shift.

HAW I tried to call him before the pass but he was

was out of the office.

HOU Hawaii, Flight.

HAW Go ahead

HOU Can you get the crew to raise the H_2 pressure to 670 please.

HAW 670.

HOU Onboard. 670.

HAW Flight they have been trying to do this. They can't get it much higher then it is right now, but I'll tell them.

HOU Okay. Very good.

HAW 11, Hawaii.

S/C Go ahead.

HAW Okay, they want to boost up that H_2 tank pressure again.

S/C Oakie, doakie.

HAW Flight, Hawaii.

HOU Standby Hawaii.

Go ahead.

HAW Roger. Just a comment, they held that thing for 45 minutes and it never did get much higher than they are right now.

HOU Okay, understand.

HAW 11, this is Hawaii. We are going to lose you in a little bit. They are going to have an answer for you on those ball angles over RKV.

S/C Okay. We thank you.

S/C We'll run this gage up to where it was the last time, Flight.

HAW Okay, we copy that.

S/C We weren't quite to 670 at our gage reading.

HAW Flight, Hawaii. We've had LOS of all parameters, all systems were GO at LOS.

HOU Okay. We have the answer to that question now but you were getting so close to LOS we'll do it at RKV.

HAW Okay.

HOU The question of the true anomaly that you fire right there and apparently the crew weren't aware of those. I have those numbers here and I'll give them to RKV.

HAW Okay fine.

This is Gemini Control, 30 hours 18 minutes. Gemini 11 out of range of Hawaii now. The Gemini orbits for the next few hours dip down away from the United States so we won't get any acquisition at United States tracking stations. The next station to acquire will be the Rose Knot at 30 hours

42 minutes 29 seconds. This is Gemini Control.

END OF TAPE

This is Gemini Control Houston at 30 hours 32 minutes into the flight of Gemini 11. We are standing by now as we approach the ring of acquisition of Rose Knot. We should be acquired by the Rose Knot off the coast of South America momentarily.

RKV We have had initial contact with the vehicle. The Agena is okay.

HOU Roger.

RKV And Gemini is go.

HOU Roger.

RKV 11, RKV. Would you turn the encoder off please so we can load a VM word?

S/C Roger. Encoder on off.

RKV Okay, and I have that information for you on the ball angles whenever you are ready to copy.

S/C Ready to copy.

RKV Okay, that is ball angles for those two areas are based on different true anomalies than what was discussed with you. For area 27-E, it is based on a true anomaly of 208 degrees for area 28-1 it is based on a true anomaly of 212 degrees. Yes, they are going to do an OAMS retro. It will be based on a true anomaly of 190 degrees and the other pertinent information associated with an OAMS retro will be

RKV updated to you at that time. Do you copy?

S/C We copied.

RKV Roger, very good. Also have a two-item flight plan update for you.

S/C Go ahead.

RKV Okay, the first item is a node time 34 12 39 it will be rev 22; it will be 11.7 degrees east 01 12 right Ascension. Second item is at Antigua at a time of 40 15 30. You will have a crew status report. Over.

S/C This is 11. Copied.

RKV Roger, that is all we have for you at this time. We have a valid DM in and you can turn your encoder back on.

S/C Encoder on.

RKV Roger.

S/C RKV, Gemini 11.

RKV Roger, 11.

S/C Roger, would you check with the surgeon down there. I would like to take a Foxtrot.

RKV Stand by.

Houston do you copy?

HOU Roger, we concur.

RKV Roger. Roger we concur with the Foxtrot.

S/C Okay. Consider it at this time.

RKV Roger.

Gemini Control Houston at 30 hours 47 minutes and we have reached a quiet period during the pass over Rose Knot. The Agena was loaded during this pass by the RKV for their big posigrade burn which is scheduled at 40 hours 30 minutes 15 seconds at this time. The information which was loaded aboard the Agena will be reverified however, later in the evening prior to that burn. And we continue to stand by now as we continue over the Rose Knot tracking area.

HOU RKV, Flight.

RKV Go ahead, Flight.

HOU You haven't given them the update, the time message yet.

RKV That is negative.

HOU How about doing that?

RKV You want that on this rev? That is 21, isn't it? -

HOU Stand by -

RVK ..the Agena, rev 21 maybe. Yes, I'll bet that is.

HOU Yes, go ahead. Have you got time?

RKV Gemini 11, we have an update for you. Height adjust.

S/C Roger. Wait one. We are ready to copy.

RKV We will probably have LOS during this GETB 40 29 59; Delta V 912.3; Delta TV 01 plus 50, R 25 09123 thrusters PPS; maneuver forward, posigrade. Over.

Flight, I think we have had LOS.

HOU Okay, we will get CSQ to do that. That was our goof. Sorry about that.

Gemini Control Houston. We have had LOS with the Rose Knot and during or just prior to LOS there were update times and Delta V for the posigrade burn being passed up to the crew. This is Gemini Control.

END OF TAPE

Gemini Control Houston at 32 hours 52 minutes into the flight, into the Gemini 11 mission. The Gemini 11 spacecraft with its Agena is now approaching on the 21st revolution, the Asian Continent. It will next be acquired by the Coastal Sentry. This would be at 33 hours and 2 minutes and 34 seconds into the mission. There will be no conversation over this pass since the crew has entered into its rest period. Prior to the start of their sleep period, however, we did have some final contact with the Gemini 11 crew, Pete Conrad and Dick Gordon, and at this time we'll play back tapes which were taken over Tananarive, the Coastal Sentry and Hawaii. We'll now roll those tapes.

FD Tananarive go remote.

TAN Tananarive remote.

HOU Gemini 9, Houston.

S/C 11, go ahead.

HOU You gained two numbers on me. Listen Dick are you on 2B-bumps yet?

S/C No

HOU Lets go to 2B-bumps now.

S/C Okay. We're on 2B-bumps.

HOU Okay. We're standing by

S/C You got the duty?

HOU Yes it's about time I did something.

S/C Say again.

HOU It's about time I did something.

S/C Laughter

HOU Have handball in a half hour.

S/C Roger.

TAN Tananarive LOS.

HOU Okay.

CSQ AFD, CSQ Cap Com.

HOU Go ahead.

CSQ Okay, the pit count on baker alpha 04, do you reach John, is 163.

HOU Roger.

CSQ You want to turn the heater off, right?

HOU Right turn the heater off.

CSQ Gemini 11, CSQ Cap Com.

S/C Go ahead CSQ, 11 here.

CSQ Okay you can turn your H_2 heater off now.

S/C I'm going to go from auto to off .

CSQ That's affirm.

S/C Roger, it's off.

CSQ Okay I'm going to send you a TX. Then we're ready for your [redacted] status report.

S/C Roger. Come again.

S/C Let's see for the command pilot lunch, ate meal 2 Charlie. The command pilot ate, now the pilot, and for dinner we ate meal 3 Charlie. We're still in the process of eating that and I would suspect that the command pilot will not eat any solids again. The pilot ate 2 Charlie for lunch and ate 2/3's of everything. Now the pilot is in the process of eating meal 3 Charlie right now, everything. (garbled) reads 1040 and it's about equally split.

CSQ Roger copy all that. Did you get all of that Agena burn update over RKV?

S/C Roger. We'll read it back to you just to see if we got it right.

Roger copied the translation for 40 29 55, delta P is 512.3 duration 01 plus 50, core 25 - 09 1 23, forward posigrade, over.

That's a PPS burn.

CSQ Roger, you got it all. Okay we'd like to have you getting to the pilot just before his sleep period, hold both of the EKG's sternal sensors for about five minutes and hold them firmly depressed to the body. We figure that it may stick backon there and if we leave them loose over night the adhesive may dry.

S/C Roger understand.

CSQ Would you turn your encoder off we want to reset the clock and turn the L-band off.

S/C Encoder is off.

CSQ Okay, we checked your TM words that RKV put in. It's good, you can turn your encoder back on.

S/C Roger, encoder is on.

CSQ Flight, CSQ

HOU Go ahead.

CSQ Okay, primary ECS is 37.9, secondary is 37.3.

HOU Roger.

CSQ That was at AOS, present reading on secondary is 37.0, primary remains the same.

HOU Roger

CSQ Both vehicles on the GO.

CSQ We checked the VM load it is good. We turned the L-band off, we sent reset timer reset.

HOU Roger

CSQ Made sure he had copied all the Agena burn data over the RKV.

HOU Say again CSQ. CSQ, Flight, say again.

CSQ Said the crew had copied all of the Agena burn update over the RKV

HOU Roger

HOU Roger, I got that thank you.

AFD CSQ Cap Com AFD

CSQ Go ahead AFD

HOU Roger, he come through, he wants them to leave the H_2 heater off and but the lowest pressure he'd like for them to let this go to is 410 psi. We don't expect any problems.

CSQ We will just have to watch it on the ground here that is all.

HOU Right.

CSQ Leave the heater off though.

HOU Right.

HOU What was the drink gun count?

CSQ 1040.

HOU Okay thank you.

CSQ It was equally divided among the two.

HOU Say again

CSQ I was about equally divided among the two.

HOU Okay.

CSQ Gemini 11, CSQ

S/C Go

CSQ Okay we got about one minute here before LOS. We're standing by. Have a good nights

sleep.

S/C Roger, thank you. We'll need it.

CSQ Hello Houston Flight, CSQ

HOU Go ahead CSQ

CSQ Okay, we've had LOS both vehicles. Both vehicles go going over the hill and our LOS reading on the primary ECS ..... control was 37.4 and on the secondary loop was 37.5.

HOU That is good, thank you.

HOU Hawaii Cap Com, AFD

HAW Go ahead, Hawaii.

HOU How is the tape dump?

HAW We received tape dump.

HOU Say again.

HAW Looked good.

HOU Okay.

HAW LOS Gemini, LOS Agena.

HOU Roger

HAW All systems were go at LOS.

HOU Roger Hawaii

HAW I guess that is our last pass with you this morning.

HOU I guess so. This afternoon, here.

HAW This afternoon.....

HOU Say again

HAW This afternoon here to, it is 12:30.

HOU Oh, very good. I guess we'll see you tomorrow afternoon then.

HAW Roger.

Gemini Control Houston. You heard Neal Armstrong pass on to Pete Conrad over Tananarive that he planned to play handball. Well he hasn't , he is still in the Mission Control Center serving at the present time as Cap Com. Meanwhile in Mission Control Center the mauve team of Flight Controllers have taken over and a gentlemen named John Hodge who was with us eight hours last night is back again tonight. Although Mr. Hodge is not officially listed as Flight Director, he does like to keep his hands in these activities. Otherwise, we're monitoring systems in the Mission Control Center. The apogee - perigee is being clocked as before at 166.5 nautical and 154.6 nautical and at 33 hours 2 minutes 30 seconds this is Gemini Control.

END OF TAPE

Gemini Control Houston at 34 hours, seven minutes into the Mission, into the flight of Gemini 11. Gemini 11 is now undergoing its 22nd revolution. It is passing over Ascension at this point in time. The crew is still in their sleep period and will be for some time, therefore we will have no contact with the crew. These are the numbers we are looking at with regard to the PPS or primary propulsion system Agena burn, over Canary. The time of the PPS burn will be 40 hours, 30 minutes, 15 seconds into the mission. It will be a posigrade burn of 920 feet per second. The time or duration of the burn will be 25 seconds. This should put us - will put us - in a new apogee of 740.2 nautical. Two revolutions later at 43 hours, 52 minutes, 54 seconds at the tail end of the Eastern Test Range, the retro burn of 920 feet per second will occur to reposition us to the lower altitude. Incidentally, the crew should see at the time of the burn, a slight glow with the SPS ullage burn of 70 seconds. And according to John Young who has witnessed this sight, the PPS burn, he says it was his experience that the PPS burn did light up the sky and we fully expect in this instance it would light up nightside pass or night sky. During this quiet period, we also have what we will describe as an out-of-plane observation relative to Gemini 11 and the PPS burn. Pete Conrad stands at 5 feet 6 and 1/2 inches and Dick Gordon stands 5 feet, 7 inches. Even in this profession the astronaut selection height limitation is 6 feet. They are very short men. Collectively in fact, they are the

shortest. Therefore, when the big burn is made over Canary, the United States shortest Gemini flight crew will start on man's tallest trip in history. At 34 hours, 10 minutes into the mission, this is Gemini Control.

END OF TAPE

Gemini Control - Houston at 35 hours, 7 minutes into the mission -- into the flight of Gemini 11. Gemini 11 is now on its 22nd revolution. It's passing over the mid-Pacific far to the south of the United States. On this particular pass, it will traverse over the South American continent. Its next point of acquisition, and this will be some 22 minutes from now at 35 hours, 29 minutes, 44 seconds into the mission, will be with the RKV off the eastern coast of South America. Flight Surgeon John Zieglschmid advises that the Gemini 11 crew was asleep within one hour from the time their official sleep period began. This is in contrast with the four to four and a half hours of sleep they obtained last night. Current pulse readings are on Pete Conrad 47, on Dick Gordon 60. Respiration rates are 13 for Pete Conrad and 14 for Dick Gordon. Weather advisors for the high apogee revolutions -- these would be revolution 26 and 27 -- on both revolutions as the spacecraft starts its rise over Africa, it will be flying over mostly cloud-free terrain. Over Eastern Africa, extensive tropical cloudiness will be visible to the south. Arabia, the Red Sea and the Persian Gulf will be mostly clear. Then over the Indian Ocean, there will be cloudy or partly cloudy conditions all the way to Australia. In the Equatorial part of the Indian Ocean and over parts of Malaysia and Indonesia, the crew will see extensive areas of showers and thunderstorms. Parts of

India will be visible, although there will be considerable cloudiness over India. Near apogee, Australia will be mostly clear except for clouds near the southwest and southeastern coasts. Also according to weather from the planned height in this area -- this is the area of apogee -- the crew should be able to make out islands 2,000 miles to the north and should be able to see winter storm systems far to the south. Earlier the S-5 and S-6 experimentors had advised that photographs secured should cover an area of some three-quarter of a million square miles and four or five of these pictures with these dimensions would cover the entire US land mass. At 35 hours, 11 minutes into the flight of Gemini 11, this is Gemini Control.

END OF TAPE

Gemini Control - Houston at 36 hours, 7 minutes, 38 seconds into the flight of Gemini 11. The Gemini 11 spacecraft continues in its powered down flight mode while the crew is still resting in the sleep period. We have some three hours yet to go before the crew is awakened. A bit over three hours, as a matter of fact. The Gemini 11 spacecraft is nearing acquisition with the Coastal Santry. We're six minutes away at this time from acquisition by Coastal Sentry. All systems continue to be monitored, however, even though all aspects of the mission are quiet at this particular time. In the Mission Control Center, Al Bean has relieved Neil Armstrong as CapCom. He's reviewing plans and procedures now to prepare himself for the very active day that lies ahead, the day that starts with the PPS burn. At 36 hours, 8 minutes, 55 seconds, this is Gemini Control.

END OF TAPE

Gemini Control - Houston at 37 hours, 7 minutes,39 seconds into the flight of Gemini 11 -- into the Gemini 11 mission. Gemini 11 has just been acquired by the Rose Knot Victor. Again in this pass during the 24th revolution, there will be no effort whatsoever to contact the crew as they are sleeping and will continue to sleep until 39 hours and 30 minutes into the mission. At this time we do have an updated flight plan which covers most of this morning's -- covers this morning's activities. At 39 hours, 30 minutes into the mission, the crew will be awakened, and the spacecraft powered up. Between 40 hours and 40 hours, 25 minutes into the mission, the platform will be aligned. At 40 hours, 29 minutes, 59 seconds, we will have the PPS apogee adjust. This is the posigrade burn to place the spacecraft and its Agena Target Vehicle into a high apogee of 740.2 nautical miles -- local time -- local Central Standard Time -- this will occur at 1:12:26 A.M. During the high apogee period of the mission, S-5 and S-6 experiments will be carried out, the synoptic weather and synoptic terrain experiments. The first set of these will occur between 40 hours, 45 minutes and 41 hours, 25 minutes. Between 41 hours and 41 hours, 25 minutes, ambient data will be gathered for the ion wake measuring experiment. At 41 hours, 25 minutes to 42 hours, 10 minutes, the S-11 photography experiment -- this is the airglow horizon photography, will be accomplished. At 42

hours, 10 minutes to 43 hours into the mission, we will have additional synoptic terrain and weather or S-5 and S-6 photographs taken. At 42 hours, 40 minutes to 43 hours, 15 minutes, we will gather additional data for the S-26 experiment -- the ion wake experiment. At 43 hours, 52 minutes, 54 seconds -- this would be at 4:35:21 Central Standard Time -- we will have the PPS apogee adjust. This will be the retrograde burn of the primary propulsion system to return it to its original apogee/perigee profile. At 44 hours and 5 minutes over Canary, we'll have a crew status report; and between 44 hours and 46 hours ground elapsed time, we will start EVA preparations. And between 46 hours and 48 hours, 20 minutes into the mission, the standup extravehicular activity is scheduled. Between 46 hours, 10 minutes and 46 hours, 50 minutes, we will have the S-13 Mode A -- this is the ultraviolet photography of selected star fields -- the Mode A is a designation for defraction grading exposure. At 47 hours, 40 minutes to 48 hours, 20 minutes, we will have Mode B of the same experiment; and this is utilizing the prism exposure. At 37 hours, 12 minutes into the mission of Gemini 11, this is Gemini Control.

END OF TAPE

Gemini Control - Houston at 38 hours, 7 minutes into the flight of Gemini 11 -- into the Gemini 11 mission. The Gemini 11 spacecraft is now taking a long pass over the Pacific, and we have a long stretch ahead of us before we're under acquisition again, and this will be over Canary at 38 hours, 51 minutes into the flight of Gemini 11. Following its pass over Coastal Sentry, Coastal Sentry was advised that it could sign off for the evening as it would not acquire the spacecraft again. Meanwhile in the Mission Control Center - Houston, we've just been advised that the crew will be awakened earlier this morning. This will be in the order of 30 minutes from the original plan. Their wake-up time will be in the magnitude of 39 hours elapsed time into the flight. Meanwhile, our countdown clock is steadily counting down toward the primary propulsion system burn -- the burn to place the spacecraft into a high apogee. And additionally rings on the orbital dynamics display -- this is a circular display which gives the spacecraft and the target vehicle altitudes -- their apogees and perigees -- this is now configured to an outside limit of 250 nautical, but it will be changed shortly to reflect 1,000 nautical mile outer limit or outer ring, and this will be to compensate for the high apogee which will be accomplished with the PPS burn. At present the crew is sleeping soundly, the Flight Surgeon advises. Pulse rates read as follows: on

Conrad -- 43; Gordon -- 53. Respiration rates,Conrad -- 11; Gordon -- 12. And at 38 hours, 9 minutes, 50 seconds into the flight, this is Gemini Control.

END OF TAPE

Gemini Control - Houston at 38 hours, 51 minutes into the flight -- into the mission of Gemini 11. The Gemini 11 spacecraft with its crew, Pete Conrad and Dick Gordon, is now approaching acquisition with Canary. Canary has been advised to awaken the crew during this contact. We're standing by now.

HOU FLT — Canary, Houston Flight.

CYI — Go ahead, Flight. This is Canary.

HOU FLT — One more thing I want you to do, Buck, after the crew is up and after they've had time to look around, I want you to get them to send ERT clock reset 060 at their convenience.

CYI — Roger. We have C-Band track. Tape dump is in progress. TX has been sent. I'm going to go to the crew at this time. Gemini 11, Canary CapCom. Gemini, Canary. Gemini 11, Canary CapCom.

S/C — Were up.

CYI — Hello there, Gemini. How are you feeling?

S/C — Just fine. We have been up for about 20 minutes. We are starting to get figures for high altitude.

CYI — Roger, we decided to wake you up about 30 minutes earlier this morning to let you have time to get ready.

S/C — Okay.

CYI Okay, I would like for you to place H_2 heater to the AUTO position if you would.

S/C Roger, H_2 to AUTO.

CYI Okay, and then at your convenience would set reset timer reset to the Agena at 000.

S/C Roger, we are doing that now.
And I think we would like to go ahead and start to power up early, if it is alright.

HOU Go ahead.

CYI Roger, go ahead, power up.
Like to remind you that before your next pass is up, like for you to go to TDA forward.

S/C Roger, were going to start that.

CYI Okay, that is about all we have for you at this time.

S/C Roger.

This is Gemini Control, Houston. The crew is advised to have their target docking adapter FORWARD, this of course, would be for the Primary Propulsion System burn. They advised Canary that they had been awake for some 20 minutes, and also, they expressed a desire to power up early. At 38 hours 55 minutes this is Gemini Control.

END OF TAPE

GEMINI 11 MISSION COMMENTARY, 9/13/66, 11:44 PM, TAPE 150, PAGE 1

Gemini Control - Houston at 39 hours, 2 minutes. CapCom Al Bean has just contacted the Gemini 11 crew via Kano remote.

S/C .... we've got something for you. We'll take you up later.

KNO Roger, we're running pretty short any way.

S/C ..... when we get a map on the second time we sent the same command.

KNO Roger. Is it performing as per your command?

S/C Say again.

KNO Is it performing as you commanded even though you only get a map the second time?

S/C Well, I'm not sure of that. We just discovered this when we started .....

END OF TAPE

This is Gemini Control - Houston, 39 hours, 7 minutes into the flight. As I believe was reported earlier, the crew was awakened at some 20 minutes ago at approximately 11:30 PM Central Standard Time. After six and a half hours of what the surgeon describes as sound sleep -- six and a half hours sleep. They were awakened during the Canary Islands pass. They're perhaps 10 minutes -- 5 to 10 minutes east of the Canary station now, and we've had no contact with them since that period. They should have completed a fuel cell purge over the Canaries, and performed a tape dump. A little later in this pass, they'll be powering up -- they're in the process of powering up their entire spacecraft now preparatory for the big burn just an hour or two from now. This is Gemini Control - Houston.

END OF TAPE

This is Gemini Control, Houston, 39 hours 22 minutes into the flight. The Black Team - the Flight Controllers are in the Control Center right now. And the Flight Director, Glynn Lunney is going around console by console and getting a status report. He is presently talking to the Flight Surgeon, Dr. Hawkins on this shift. Dr. Hawkins has advised among other things that, as we indicated earlier on the length of their sleep, he described as quite sound. He noted that they got to sleep much earlier than they did last night. It took them less time to power down, as he put it. Six and one half hours of sound sleep, and he said their rates were quite basal. He said their water intake over the last 24 hours runs about 60 ounces per man, and he said he was completely satisfied in all respects with their physical status. The time - elapsed time on the big burn is still being carried as 40 hours 30 minutes into the flight, about one hour from now - a little more than one hour from now. Of some interest may be the various ways in which the Agena can be shut down - the big engine on the Agena. Certainly it might be of curiosity to reporters working this story. There are three primary ways available to the crew onboard to shut down the Agena. No. 1 is Velocity Meter into which the specified velocity may be requested and when the meter reaches that - it is much like the Flight Director needles in the spacecraft. It is a measurement device, and when the desired

velocity is reached, the engine is so wired that it automatically shuts down. In addition, the crew has a toggle switch which is a direct hard-line connection to the engine which can be flipped in order to shut the engine down if they so desire. They can also send commands to the Agena through their little hand device - a punch-board device which operates on a 3-digit code, and there are several commands available to them which could shut down the Agena that way. In addition, the ground can send commands to the Agena, but this - they hesitate to do so in a docked configuration. At 39 hours 25 minutes into the flight, this is Gemini Control, Houston.

END OF TAPE

This is Gemini Control, Houston, at 39 hours 37 minutes into the flight. The Flight Director has continued to check and re-check with his various Flight Directors. He is very interested in insuring these two stations have verified the command functions in the vehicle. This seems to be the primary subject occupying his time, I don't think he has any reservations about it, but he just wants the assurance that it can be gotten from at least a double station check. on the receipt of the various commands from the Agena. The weight of the Agena coming up on this burn is 6,956 pounds, the weight of the Gemini is 7,669 pounds. The total velocity - delta velocity available in the Agena Primary Propulsion System is 2,670 feet per second. That is in a docked configuration - in an undocked configuration, it is approximately twice that. The Agena also has available about 193 feet per second available in its Secondary Propulsion System, 193 feet per second. This is Gemini Control, Houston.

END OF TAPE

This is Gemini Control, Houston, 39 hours 52 minutes into the flight. Gemini 11 and its companion Agena are moving across the South Pacific preparatory to the big burn which will take place just west of the Canary Islands. The latitude at the start of the PPS burn will be 26.5 degrees North - that's 26.5 degrees North latitude. The longitude will be 20.7 degrees West - 20.7 degrees West longitude. At that time, the spacecraft will be in an altitude of 155.4 nautical miles. It will be just west of perigee to not quite on perigee but just west. The weather bureau - the weather advisers here in the Control Center advise that there are - the East, Northeast Africa is relatively open. The area over Decar - the eastern tip of Africa is pretty well socked in with low stratus clouds. Mixed cloud activity across the Indian Ocean, considerably cloudiness over the Jakarta area, but southeast of Jakarta is on the - building up to the first apogee at the high altitude. The area is described as quite open and free of clouds. The entire Australian continent relatively open and free of clouds, some cloudiness noted along the Southern coast but it is confined to the Southern coast of Australia. The desert region is completely without clouds. The first apogee would be achieved over Australia. According to present plans, the burn - 912 feet per second desired, this would give us

if completely successful, a new apogee of 740 nautical miles. We have had no contact with the crew since the Canary pass approximately an hour ago. We would expect contact within about 20 minutes as they move through the Antigua area of acquisition. This is Gemini Control, Houston.

END OF TAPE

This is Gemini Control Houston, 40 hours 7 minutes into the flight. Antigua should acquire in about 8 minutes from now. Still no contact with the crew. Spacecraft onboard fuel situation is 440 pounds remaining of usuable propellant. 220 pounds of that have been either marked or set aside for an OAMS type preretro burn, should any kind of reentry by necessary during our two high apogee passes. That would be burn, of course, at perigee if we are successful in the 912 feet per second burn to a new altitude of 740 nautical miles That would give us a perigee of 156.1 nautical miles. If at any point in those two revs, 26 and 27, that a reentry should become necessary, it would be done from perigee. It would be preceded by what we call a preretro OAMS burn. We use the orbiting atitude maneuvering system as a backup to our retrofire rockets. The position of the big burn geographically is approximately 250 nautical miles west and slightly south of Los Palmas in the Canaries. 250 nautical miles. 40 hours 9 minutes into the flight, this is Gemini Control Houston.

END OF TAPE

This is Gemini Control Houston 40 hours 14 minutes into the flight. Antigua should be acquiring momentarily. Perhaps a minute from now. In the course of the Antigua pass the crew will be give a go for a 45-1 flight, that is the full duration of the planned flight. The velocity meter load the instrument that will be primarily controlling the big PPS burn over the Atlantic will be checked very carefully onboard and on ground. We may get some additional information on a crew status report. This is questionable whether it will really be gotten in to at this point. It may come a little later. Later in the pass as they move east northeast of Antigua the crew is to of course, set up and be entirely ready for the big burn. Among other things they are to activate a 16 mm camera. We are not certain whether this is looking out "Pete" Conrads" window or Dick Gordons' side. We would guess it is probably Dick Gordons' side because the window is cleaner. First call is about to go out to Antigua and here it goes, let's listen as this conversation develops.

S/C Hello Houston

Go ahead Houston

HOU Roger, you're garbling a little bit. Could you turn your encoder switch off?

S/C Roger, it's off.

HOU Roger, How does the Agena look now? When you faded out over the last station you had a problem with it. Over.

S/C Well, every once in a while we do get a MAP

and we have to send a command a couple of times then we'll finally get a MAP. We're in FC2 right now, Gyrocompassing DEF.

HOU Roger, for your information when you were over the Canaries we saw you send two commands each time for both G O rate and pitch Horizon sensors and we got MAPs for both of the commands both times and the function was executed on your first command. Over

S/C Okay, apparently we're not getting a MAP light back, that's all.

HOU Roger, at least right now it looks like all the commands are getting through even though you don't get the MAP light. Have you taken a look as far as the status display panel lights or approach lights?

S/C No, we didn't try those. How about our GET time hack?.

HOU Roger, I'll give you a time hack at GET 401800. That's about 25 seconds from now. Time will be 401800. 5 4 3 2 1 mark that's 401800.

S/C Roger, we're right with you. Primer burn is still 40 plus 29 plus 59 1 plus 50..is that correct?

HOU That is correct. As you approach the Canary Island we will varify on the ground that you actually are in flight control Mode 7 and monitor all your commands. But you presently have a "go" for the burn unless you hear from us, you'll execute the burn on time. Over.

S/C Okay. Houston 11 (garbled)

Houston 11.

HOU Go ahead 11.

S/C Can we have the encoder back?

HOU That's affirm. Turn the encoder on at this time and we'd like you to send approach lights on and monitor you from the ground.

S/C Okay.

HOU Are you ready to copy your OAMS re-entry inertial update?

S/C Go ahead.

HOU GET of 5 degrees 403239 GET 275 degrees 415104 For area 27 echo GETB 412239 Delta V 240 Burn time 5 plus 00 Address 25 9 24 00 Ball reading up 3 For area 28-1 GETB 43 05 00 Delta V 240 Burn time 5 plus 00 Address 25 924 00 Ball reading up 1 and both of these OAMS re-entries are roll left 55 degrees. Over.

S/C Okay, I didn't get the 5 degrees Ball time, please and the first thing after that.

HOU Roger. The GET of 5 degrees on the ball is 403239 The GET of 275 degrees on the ball is 415104. Did you copy that?

S/C Got it.

HOU Another possible problem that you ...that could

be causing those MAPs, intermittent MAPS, is a your L-band beacon seems to be cooling off fairly rapidly at night. Suggest you send 071..this will turn it on allow it to warm up and perhaps we can get some better MAPs.

S/C Okay.

HOU 11 Houston also you have a "go" for 451.

S/C Roger.

HOU 11 Houston. Your approach lights look good from here. You're cleared to turn them off.

S/C Okay.

HOU Yes sir go (faded out)

S/C Say again.

HOU 11 Houston. Could you give us an abreviated crew status report?

S/C Roger. We haven't eaten this morning.

HOU Roger. Thank you.

S/C We slept for about 5 hours.

HOU Roger.

S/C I can't reach the water gun, it's locked up.

HOU Have a good ride up there.

S/C Thank you.

HOU (back ground voice) temperature (faded out) Go sir.

(Dead Air)

HOU Say again sir.

HOU Stand by and I'll check.

This is Gemini Control Houston 40 hours 24 minutes into the flight and we have had LOS via Antigua. We should acquire at the Canaries in about 2 minutes from now. We'll be back with you then. This is Gemini Control Houston.

END OF TAPE

This is Gemini Control, Houston, 40 hours 27 minutes into the flight, and the Canary station has acquired the controllers there declare both vehicles are GO on the ground. The Flight Director is talking to the Canary station - quizzing him on the flight control mode being used. In the last 10 minutes, a number of visitors have come into the Control Center, among them Dr. Elms, James Elms, the new director of the Electronics Research Center in Boston. The director of this Center, Dr. Robert Gilruth, Dr. Berry is here, and Donald Slayton. Canary controllers advised the crew that there are standing by on the ground preparatory to the burn. The Secondary Propulsion System will be used first for some 68 seconds to insure the proper position of fuels in the thrust chambers for the large engine to make it burn properly. The Canary has given the final GO for the burn. 40 hours 30 minutes and we are standing by. We have SPS initiate. We have an ullage burn starting - it started at about 40:30:20, 40 hours 30 minutes 20 seconds. No conversation going on back and forth across the line but the listening is so intense you can almost hear it. The attitudes are looking good Canary reports. 40 hours 31 minutes 20 seconds - we should be just a few seconds away from the PPS. We have a PPS start. Pete Conrad said "It's going, it's really going." Looking good. We have a cut-off.

CYI Cut-off.

S/C Whoop-dee-do, look at it go.

CYI Looked real good from here. Looked real good from here, 11.

S/C Roger, Bill, 31 seconds of MAIN propulsion left.

CYI Would you say again, please?

S/C We have 31 seconds of MAIN propulsion left.

CYI Roger, understand. 41 seconds of MAIN propulsion left.

S/C Negative, it's 31.

CYI Roger, 31.

This is Houston, we have had confirmation from both the crew and from the Canary Islands that the velocity meter did cut the vehicle off. Stand by one. Dick Gordon has just advised that we achieved a 918, 918 feet per second, which would be only 6 feet per second off the planned maneuver.

HOU Rog.

CYI Coming back to loose flight control modes, Flight.

HOU Rog.

CYI And want me to check with them on this central angle now?

HOU Say again.

CYI Do you want me to check with him on this ...

S/C Canaries, 11.

Roger, I did get the Platform to FREE, I got it to FREE at 40:33:30, and would you have them

S/C compute the angles for that time, please?

HOU Will do.

CYI Roger.

Do you copy, Flight.

HOU Wilco.

They are working on it now, 11.

S/C Okay

CYI You will have to give that to them over Carnarvon, Flight.

HOU Yes, we will get is as soon as we can.

CYI 11, this is Canaries here at our LOS. They will get that to you as soon as they can.

S/C Okay.

CYI We have LOS.

This is Gemini Control, Houston. From all appearances, a very successful burn. Additional information could be - will be forth coming at Carnarvon. Meanwhile, the spacecraft is beginning its climb to a new altitude record of perhaps slightly more than 740 nautical miles. This 740 was based on a 912 feet per second burn. The onboard readout was 918. The spacecraft at this time, was almost directly east of Marakesh. It will proceed across the northern portions of the Sahara Desert, start its swing southward on - perhaps 300 miles south of Cairo, move across

the Red Sea, bisect the Arabian Penisula from northwest to southeast, and then proceed across the Indian Ocean. It will come into Australia on the northwest corner, and it will - its orbit will carry it over the entire central portion of Australia before it beings its climb up across the Pacific Ocean. We will confer with the controllers here to get more precision on the times of the burns and come back to you with them. This is Gemini Control, Houston.

END OF TAPE

This is Gemini Control Houston, 40 hours, 52 minutes into the flight of Gemini 11. We have conferred with the flight dynamics officer and he advised that our new apogee will be 741.7 nautical miles. We should achieve this apogee some 25 minutes from now. The longitude of the new apogee is 150.6 degrees east and the latitude is approximately 26 degrees south. This would be at a point roughly 150 miles west of Brisbane, Australia. Almost over the eastern coast of Australia, just inland from the east coast of Australia. The new period, the earth fix period, the time that it will take the Gemini to get around the earth during this high apogee period is 107.5 minutes. This in contrast to our period prior to the burn which was 96.5 minutes. Our new period, 107.5 minutes. No additional contact with the crew since we left the Canary station, and we don't expect any till they reach Australia. This is Gemini Control Houston.

END OF TAPE

GEMINI 11 MISSION COMMENTARY 9/14/66, 1:44 AM, TAPE 159, PAGE 1

This is Gemini Control Houston, 41 hours, 01 minutes into the flight. Canarvon has acquired both vehicles on the ground. They've advised the center here in Houston that they are both GO. We can watch the climb here as the data is coming in now in real time. The present altitude is 564.6 nautical miles high. By the time they reach Australia, they will reach the maximum altitude of 741.7 nautical miles. We have just been advised that the ground elapsed time for the apogee will come at 41 hours, 21 minutes, 58 seconds. This will be an unusually long pass, 21 minute pass, which is a product of the altitude. Pete Conrad has just started talking, let's cut in on that live.

S/C It's fantastic, you wouldn't believe it. I've got EB at the left window and Borneo under our nose, and you're at the right window. (Canarvon)

CRO Get some pictures out the right window, not the left.

S/C We're taking them all at the right window except the 75 milimeter camera.

CRO Roger. Okay, I've got your ball readings when you are ready to copy.

S/C Okay, wait one. Okay, ready to copy.

CRO Okay, will you turn your encoder off, and we'll go ahead and get our Agena tape dump.

S/C Okay.

CRO Okay, for area 27 Easy, your ball reading is up 7.

For area 28-1, your ball reading is up 4.

S/C Okay, we copy.

HOU Carnarvon from flight.

CRO Go ahead, flight.

HOU Let him know that he released the ball 8 degrees past his perogee.

CRO Okay. He released the ball 8 degrees past perogee.

S/C Okay, 8 degrees, Roger.

CRO Flight, Carnarvon

HOU Yes..

CRO We're copying the dump, but the volume is pretty poor.

HOU Okay

S/C I tell you, we can't believe it. Just out of my left window, I see all the way up. At the top of the world, all the way around about 150 degrees, including the horizon all the way around.

CRO Okay, we're now going to connect you with the VM work for your retroburn.

S/C Okay. What's our orbit?

HOU 156 by 742.

S/C That's 156 by 742. Have you got a period for us?

HOU 101.5

S/C 101.5, Thank you

CRO You've got a good VM load.

S/C Okay.

CRO I've got your GAT apogee.

S/C Roger

CRO 41+21+58

S/C 41 21 58

CRO Roger

S/C Have you got a retro time for us?

CRO Stand by

HOU The one he has is good

CRO The one you've got is good, Pete.

S/C The one that I've got is good. What one is that?

CRO You should have 27 easy.

S/C I mean the retro burn XXXXX with the PPS

CRO Okay, standby

CRO Flight, Carnarvon. Did you get that with the update with the 40.9 59.

HOU Yeah, I'm not sure he wants it. I think what he wants is the retro Delta V.

CRO He said he wanted the burn time. The Delta V is 9 12, is'nt it.

HOU That's right

CRO Okay.

CRO Hello, Carnarvon

S/C Go ahead

CRO Okay, your time for that burn is 40+29+59.

S/C Negative, that's the first burn. That's the first burn

CRO I'm sorry, Pete. Standby....Flight, Carnarvon

HOU Go ahead

CRO Okay,I've got the VM work for that maneuver, but I don't have the time.

HOU Okay, I'm giving that to you now, Bill.

CRO Okay

HOU Command 501 is 43+52+38

CRO Say again

HOU Command 501 GETB is 43+52+38

CRO Roger. That time is 43+52+38

S/C 43+52+38 retroburn

CRO That's affirmed

CRO Flight, Carnarvon

HOU go

CRO That dump data we're getting is pretty poor.

HOU Okay. We'll get all the burn data over the Canaries.

S/C For your information, our dosimeter reads .3 rads per hour up here.

CRO Rog.

S/C And the number of events is 11.

CRO Roger.

This is Gemini Control Houston. Our present altitude is 681 miles, still climbing to that 741.7 mark, which will come about 10 minutes from now. It's now 41 hours, 10 minutes, 51 seconds. Here is more conversation.

S/C go ahead

CRO The first is a mode, time 40 13 31. Rev 26 80.6 degrees west, 1 hour, 4 minutes Ascension.

41 21 57, apogee 126. S-11, 41 29 58, sequence number is 04 the mode is A.

S/C Copy.

CRO We're about 10 minutes to LOS

S/C 10 minutes, Rog.

HOU You get a countdown, Carnarvon?

CRO Say again, flight.

HOU You going to/countdown LOS

CRO Yeah, I might try that. Spacecraft looks real good.

HOU Why sure.

CRO I'm a little surprised, the TM quality is pretty/good in the front room

CRO Dick, play the dumps, you can go ahead and put the encoder on.

S/C Roger, encoder's on

CRO Why don't you talk to us about the view.

S/C Okay, I have to go back while we're doing it, because we're very busy. We're looking straight down over Australia now. We have a terminator at our right window. We have a southern part whole/world at one window. Utterly fantastic. Here comes the terminator behind me, moving like a streak. Gemini 11, over.

CRO Okay

END OF TAPE

S/C We are setting up for S-11 now.

HOU Roger.

S/C Can you get us a second apogee time?

HOU Stand by.

Carnarvon, from Flight.

CRO Go ahead, Flight.

HOU GT the second apogee, 43:03:28.

CRO Roger.

11, Carnarvon.

S/C Go.

CRO Okay, second apogee will be 43:03:28. This is Houston, present altitude 726.1 nautical miles. You heard Pete Conrad refer to his radiation count - .3 rads per hour for a skin dose reading and the depth dose .11 rads total. He reported as 11 events - that can be interpreted as .11 rads. These are almost precisely as predicted in the way of radiation. They are slightly less than John Young and Mike Collins took on their 413 mile apogee ride during Gemini 10. We are less than a little more than 3 minutes away from apogee.

S/C Do you copy Carnarvon.

CRO That's negative, we lost jam on you. Say again.

S/C Hello, Carnarvon.

CRO 11, Carnarvon.

Flight Carnarvon.

HOU Go.

CRO Okay, we have lost jam here for about a minute here...

S/C Hello, Carnarvon.

CRO 11, Carnarvon.
and we have lost C and S-band track.

HOU Give them a call, Bill.

CRO Gemini 11, Carnarvon.
We are getting the jam back in but it is very, very weak.
Gemini 11, Carnarvon.

S/C Go ahead.

CRO Roger, Read.

S/C Say again.

CRO Roger, read me?

S/C You are very weak, I think maybe out antenna is underneath us and blocking you.

CRO Rog.
Did you get that second apogee time?

S/C 43:03:06 is that correct?

CRO It is 43:03:28.

This is Houston, the Flight Control Communicator out there is Bill Garvin, employee of the Flight Control Division here at the Manned Spacecraft Center, and a veteran Flight Controller who has worked, I think all the remote sites in past manned missions. This is Houston, in the course of this pass, the

Flight Surgeons have been observing heart rates on both men of 75 to 80, respiration is about 50. This is considered quite normal for both men - despite the view which Pete Conrad described as "utterly fantastic." And we are less than one minute away from apogee right now and the Flight Dynamics Orbital Digital figures which are coming in real-time from Australia presently read 739.1. Here is the spacecraft again.

S/C You are very weak.

CRO The TM has been dropping in and out for about the last two minutes.

S/C Yes, we got a low-angle thrust, I guess our range pretty far. We are almost to the other end of Australia, and we are coming up on apogee in about 8 seconds.

CRO Rog.

HOU He ought to be right on the coastline, Bill, for apogee.

CRO Mark apogee.

S/C We had better turn on our apogee recorder.

CRO Roger.

We have had LOS, Flight.

HOU Roger.

This is Gemini Control, Houston. We have had Loss of Signal with the Gemini 11 spacecraft after approximately a 20 minute conversation that began hundreds of miles

northwest of Carnarvon, extended over to the east coast directly over the city of Brisbane. The flight controller, Bill Garvin at Carnarvon marked the apogee and the altitude at the time as 739.4 nautical miles. That was at an elapsed time of 41 hours 21 minutes 58 seconds. The velocity of the spacecraft has shown a commensurate lessening as we climbed to apogee. It got down to a low point of 22, 650 feet per second. This in contrast to its lower altitude orbital velocity is something on the order 25, 550 feet per second. As we descend to perigee, the velocity of course will step up. Our next contact will be at - via Canton Island. That is to come 2 minutes from now, and the duration of the pass is slightly more than 15 minutes. The spacecraft pass actually takes up far south of Canton Island some 15,000 miles or more south, but because of the extraordinary altitude we can and will remote through Canton Island, John Young our communicator here will talk to the spacecraft. We will come back up when we have acquisition at Canton. This is Gemini Control, Houston.

END OF TAPE

This is Gemini Control Houston. John Young has put out his first call to advise 11 that we are standing by. Here is "Pete" Conrad.

YOUNG Sound great up there "Pete"

S/C Thank you

YOUNG Sound like you are really up there.

S/C Yes..

This is Gemini Control Houston. The line may have been inadvertently dropped to Canton. It sounded like the carrier signal dropped off the line and John Young is querying his back room right now on that.

Sounds that way.

Okay, we'll check that.

Earlier we were given/the time of the retro type burn from the high altitude. It'll be a burn back to the conventional orbit of roughly 160 circular. That burn will take place over the eastern part of the United States at an elapsed time of 43 hours 52 minutes 38 seconds. The Delta V will be 912 feet per second which is the /same order of Delta V that we requested to reach the high atltitude. Carrier signal is back up now and we expect Young will be putting in a call momentarily.

HOU Gemini 11 Houston, over.

S/C Go ahead.

CTN Roger, can you see New Zealand down south there?

S/C Can we see what?

YOUNG New Zealand.

S/C What's that?

YOUNG I just asked if you could see New Zealand down south.

S/C No, I don't think we did. We were passing the terminator.

CTN Roger

S/C We're showing we're still in daylight up here. The sun is just oh a couple of/three degrees from setting up here and should in just a few minutes. And the terminator pass was a long time ago.

CTN Roger.
All you need is a bigger fuel tank, right?
Ha!

This is Houston. The period of darkness that the Gemini 11 is entering will continue across the eastern half of the Pacific Ocean and off the east coast of the United States. It'll enter daylight again at approximately Bermuda, southeast of Bermuda. Present altitude showing 689 nautical miles. Velocity building up slightly, 22956 feet per second. Our new perigee shows 156.5 nautical miles. That will be achieved out over the central Atlantic Ocean. We'll continue this stand by keep the carrier signal up and should be with the signal for another 5 to 6 minutes at least.

This is Houston. The crew is busy throughout this period taking S-11 experiment S-11 photographs. These are photographs of the airglow area that shows up in a specific light region starting at, something on the order of, 60 miles above the earth. Occurring in various layers and invarying intensities up to 150 miles above the earth. Photographs of course at this altitude would represent vital new data to the experimenters in the airglow area. Our primary experimenters for this specific experiment are the U.S. Naval Research Lab. in Washington, D.C. and the Office of Space Science and Applications, NASA Headquarters in Washington. Another veteran experimenter in the field is the University of Minnesota, Dr. Nye. No additional conversation via Canton but we'll continue to stand by. This is Gemini Control Houston.

END OF TAPE

HOU Gemini 11, Houston. 30 seconds to LOS.

S/C Roger, Houston. We are working with the S-11.

HOU Roger.

CTN Canton has LOS.

This is Gemini Control, Houston. We have had a Loss of Signal at Canton Island. The next acquisition will be via the Texas station, and that is to come at 41 hours 57 minutes into the flight. We presently show 41 hours 42 minutes into the flight. The Agena has advised that the combined weight of the two vehicles presently - this is a ground based weight is 13, 289 pounds, subtract that from the pre-burn weight and we find that about 1,436 pounds of fuel SPS and PPS fuel were expanded in the course of that burn which sent us to this new altitude. It will take slightly less weight - less fuel - consequently less weight to lower our apogee about one rev from now. This is Gemini Control, Houston.

END OF TAPE

This is Gemini Control in Houston, 41 hours, 54 minutes into the flight, presently showing an altitude of 348.9 nautical miles. The spacecraft is southwest of Mexico approaching the Central American peninsula. The Texas station is to acquire in about three minutes from now. During the course of the Australian pass, you heard Pete Conrad query Bill Garvin about his new period -- the time it takes to circle the earth. He was given that period on an inertial reference which is 101.5. The earth's fixed reference as far as revolutions go -- that is the time that it takes to completely go around and pass the 80° longitude mark at the Cape -- is 107.5 minutes. This is Gemini Control at Houston.

END OF TAPE

15 Jim is not on

This is Gemini Control Houston 41 hours and 58 minutes into the flight. John Young has put in a call to Gemini 11 which has been acknowledged. There has been no conversation. We are remoting they're talking to them through the Texas station located at Corpus Christi. There will be some discussion during this pass. We should have fairly consistent contact through all tolled a good ten to twelve minutes. The crew is still taking airglow S-11 experimental photographs.

Texas go local

Texas local

Among other things during the course of this pass the velocity meter on the Agena will be up dated for the letdown burn from apogee. To occur about one rev from now. Later as the spacecraft moves across Africa;the crew will begin taking a series of S-5 and S-6 ground cloud photographs across northern Africa north of Kano and on across northeast Africa, over the Red Sea and the Arabian penninsula. They're on their 26th revolution about to begin their 27th.

LOS Antigua

This is Houston. We're about 9 minutes away from perigee. Present altitude is 207.6 miles. Our velocity has stepped up to 25977 feet per second. It will continue to increase as we move to perigee. Flight Director has been in conversation with the Agena. Here is conversation.

HOU We have a dock burn update for you. over

S/C Roger. Ready to copy.

Okay, we're ready to copy. Ready to copy Houston

HOU Roger. Purpose is height adjust GETB 43 plus 52 plus 39 Delta V 911.8 Delta TB 01 plus 48 Address 25 99118 PPS burn TDA aft retrograde and the VM word you have is good.

S/C Roger, understand the VM load is good.

HOU That's affirmative. If you'll turn your encoder off we'll look at it one more time.

S/C Okay.

HOU Gemini 11 Houston. The word is good you can turn the encoder on. Over.

S/C Roger.

This is Houston. After we leave the Antigua area and move over to the Canary area the attitude of the spacecraft will be target docking adapter pointing up. Thereby maximizing the view from the windows of the spacecraft for the ground and the cloud photography that will be taken across the northern part of Africa.The velocity meter burn the elements involved in that burn have been varified in the Agena vehicle on the ground and by the crew. All parties are satisfied that we are in the proper configuration to lower this apogee at an elapsed time of 43 hours 52 minutes and 39 seconds. The next apogee will be achieved 43 hours 3 minutes 28 seconds, or slightly less than an hour from now. This is Houston standing by.

END OF TAPE

Gemini 11 Houston. 1 minute and 30 seconds to LOS at Bermuda.

(Canary Cap com AFD)

(AFD Canary)

HOU Canary Cap com AFD

(AFD Canary Cap com)

HOU Canary Cap com AFD

(AFD Canary Cap com)

LOS Antigua

This is Gemini Control in Houston. We've had LOS Antigua.

(Canary Cap com AFD)

Meanwhile we've been advised by the Flight Director that the stand up EVA this morning scheduled at 46 hours elapsed time into the mission should be carried off as carried in our flight plan, with one possible exception. This will be discussed with the crew a little later. That exception being we may-we're considering asking them to go ahead with the window wiping operation. This could not be included in yesterdays umbilical EVA. The main question in peoples' minds here is whether Dick Gordon can actually reach both windows from his position in the standup EVA mode. We'll get the crews opinion and a decision will be reached after that. The Canary Islands is to acquire less than a minute from now. Since there is no additional work scheduled except the getting ready of the cameras for the S-5 and S-6 experiments perhaps we can expect a little more conversation.

We'll come back when the Canary acquires.

END OF TAPE

UN-AIRED TAPE

CRO Carnarvon has ACQ aid contact

Telemetry solid on the Agena and Gemini.

Flight, Carnarvon.

HOU Go ahead.

CRO Okay, we have got both vehicles and they are both GO.

HOU You are kind of low, Bill.

CRO How are you reading me now?

HOU Fine. Both vehicles are GO.

CRO That's affirm.

The TX has been transmitted.

HOU Roger.

Carnarvon from Flight.

CRO Go ahead.

HOU The GET of apogee will be 41 plus 21 plus 58.

CRO Roger.

S/C Carnarvon, 11.

CRO Hello, up there.

S/C How long have you had us?

CRO Just about a minute here.

S/C The readings are go up here.

CRO Have you got a good view?

S/C I mean it's spectacular.

~~Bill~~, it's utterly fantastic. You wouldn't believe it.

END OF TAPE

This is Gemini Control, Houston, 42 hours 15 minutes into the flight. Canaries has acquired. Let's listen.

HOU Roger.

CYI 11, Canary

S/C Go ahead.

CYI Okay, you can turn your encoder back on.

S/C Roger.

CYI I guess you are on your way back up now.

S/C Rog.

CYI Okay, Flight we have the tape dump completed at Canaries.

HOU Say again.

CYI Tape dump is complete.

This is Canary. This is just about our LOS. Your still good, we will see you next time around.

S/C Roger.

CYI We have C-band LOS, this is Canary.

HOU Roger, Canary.

CYI Gemini LOS.

HOU Rog.

Kano go remote.

KNO Kano is remote.

We have contact.

HOU Gemini 11, Houston at Kano. Standing by.

S/C Roger. This is 11 were are just taking pictures.

END OF TAPE

This is Gemini Control, Houston, 42 hours 48 minutes into the flight. These passes are showing how the ground stations and their placement are being maximized for this two revolution period of high apogees. The time is less than one minute from the acquisition via Tananarive to a handover at Carnarvon. Actually, something on the order of 30 or 40 seconds. Carnarvon will be acquiring any minute. According to our slate, they could have acquired approximately one minute ago. Again a 22 minute pass over Carnarvon. The apogee time will be an elapsed time of 43:03:28, and that apogee will occur at 126.2 degrees east which is inland - several hundred miles inland off the west coast of Australia. Again it will be about 25 degrees south latitude. The present altitude is 656.8 miles and we are predicting for this rev based on tracking data, an apogee of 739.3 nautical miles. Here comes Pete Conrad now talking to Carnarvon. Let's tune in.

S/C Do you have us in sight?

CRO Roger, we still haven't locked up on you Pete.

S/C Say that again.

CRO I said we haven't locked up solid on your telemetry yet.

S/C Okay.

Carnarvon, 11.

CRO Go ahead.

Go ahead, 11.

CRO Flight, Carnarvon.

HOU Go ahead.

CRO We still haven't had any luck on locking up on the vehicle.

HOU Okay.

CRO The TM is very intermittent.

Carnarvon has telemetry solid on the Agena.

She is go.

HOU Roger.

CRO And the spacecraft is starting to come in.

HOU Roger.

CRO Telemetry solid on Gemini. Gemini is go.

HOU Roger.

CRO Gemini 11, Carnarvon.

S/C Now, that's clear.

CRO That's clear. Do you want to turn encoder off and we will start the dump?

S/C Okay.

We have rolled around to where we are slightly pitched down but we are rolled into the orbital plane now preparatory to setting up the Agena.

CRO Roger.

S/C We have you in sight down there, loud and clear.

CRO How is the weather?

S/C Just south of Shark's Mouth Bay, they got some clouds but that's about it.

CRO Stand by, I am going to transmit you a TX.

S/C Okay.

CRO Flight, Carnarvon.

HOU Go ahead.

CRO We are copying the dump.

HOU Rog.

CRO And we have got C- and S-band track.

HOU Roger.

CRO 11, Carnarvon.

S/C Go ahead.

CRO I will give you a GET time hack at 42:56:00, in about 40 seconds.

S/C Okay.

CRO Stand by, 3, 2, 1 mark.

S/C Roger, we are right with you.
And second apogee 43:03:06, is that correct?

HOU 28.

CRO That was 28.

S/C What was 28?

CRO The seconds.

S/C 43:03:28.

CRO That's affirm.

S/C Thank you.
Retrofire burn time is 04:35:239.

CRO Roger.

This is Houston. The present altitude is 725.8 miles, the vehicles have slowed to 22, 729 feet per second, and we are about 25 minutes away from apogee.

S/C Carnarvon can we have the encoder back?

CRO Stand by.

Okay you have got it back.

S/C Okay.

CRO Stand by one, Gemini 11.

S/C Standing by.

Encoder is on.

END OF TAPE

CRO Flight, Carnarvon

HOU Go ahead, Carnarvon

CRO We've got over 5 minutes of dump.

HOU Okay

CRO They look real good

HOU Roger. Sounds good too, Bill

CRO It must be quite a view up there

HOU Bill, could you send us a Gemini A summary, please.

CRO Roger.

CRO Go ahead, 11

S/C He's bringing the Agena up in one minute.

CRO Roger

This is Houston. We're less than 50 seconds away from apogee and we presently show 739.0 nautical miles, the apogee expected is 739.3 nautical miles. Velocity is 22,649 fps mark, apogee 739.3.

S/C FC gyro compasses at this time.... FES spacecraft at this time.

CRO Roger, looks good

This is Houston. Nearly 7 minutes remain in this Australian pass and there will be a 3 to 3½ minute out between Australia and Canton Island. The Canton Island pass, this time, is to run something over 16 minutes.

This is Houston. The cabin pressure during this period continues to show 5.05 pounds per square inch. The left suit in the temperature, 49.8 degrees F. Dick Gordons suit is 50.5 degrees F. The overall cabin temperature 78 degrees. The Carnarvon telemetry shows 425 pounds of propellant still remaining on board. 425 pounds.

HOU	Carnarvon from flight
CRO	Go ahead, flight
HOU	I want a PQI readout for corrulation on the ground.
CRO	Roger.
CRO	Hello, Carnarvon
S/C	Go ahead
CRO	Could you give us a PQI raadout?
S/C	Roger, PQI looks like about 35 per cent
CRO	Roger. Copy flight?
HOU	Thank you
S/C	We were as modulely as we could be.

END OF TAPE

One minute to LOS

S/C How much?

HOU One minute.

S/C Okay. Next pass.

HOU Roger.

CRO Carnarvon has LOS on Gemini

HOU Roger

This is Houston. That wraps up the Australian pass. Our elapsed time is now 43 hours 11 minutes 53 seconds. This is Gemini Control Houston.

END OF TAPE

This is Gemini Control Houston 43 hours 33 minutes into the flight. We have just completed a pass over the Canton area. And in it we find some of the most descriptive phrases we have heard from space. "Pete" Conrad and Dick Gordon describing what they saw primarily in the region of apogee. They just passed apogee they were at an altitude of 650 nautical miles during much of the conversation. Gordon is the primary talker. He describes the colors of the ocean in fairly vivid terms. The tape runs slightly more than 4 minutes and here it is.

Canton go remote.

Canton go remote

Canton go remote

Canton is remote

CTN Gemini 11 Houston at Canton standing by.

S/C Roger. This is Gemini 11 here everything seems to be going okay. Standing by for retrograde.

CTN Roger. At 653 miles now coming down.

S/C Say again.

CTN 650 miles now coming down.

S/C Roger. It surely is round up here.

CTN That's something alright. We figure you've got the thousand kilometer time to climb.

S/C It didn't take long did it? You show the radiation at 22 revs per hour and we have had (garbled) over.

CTN Roger. Say again events over.

S/C 11 eleven

CTN Roger. Sounds like it's safer up there than a chest x-ray.

S/C That's affirmative. Nothing like actual data huh?

HOU Gemini 11, this is Houston. Do you have any comments on the view, the colors and everything for guess who?

S/C I'll tell you one thing it really is blue, that water really stands out and everything is blue. Obviously the curvature of the earth shows up a lot. A lot of the passes reaches over the ocean area Africa, India and Australia were clear however.

HOU Houston, Roger.

S/C Looking straight down you still see just as clearly down below there is no loss of color. And detail is good, extremely good even at that altitude.

HOU Roger.

S/C Houston 11

HOU Houston go.

S/C Roger, we've gotten a little behind that first hour of the EVA prep. I think we're going to have to eat, then we'll see if we can catch up.

HOU Houston roger. Gemini 11 Houston one minute 30 secs to LOS at Canton.

S/C Roger. Houston standing by.

Canton approaching LOS

END OF TAPE

This is Gemini Control, Houston, 43 hours 41 minutes, and since we started talking, John Young has established voice contact with Gemini 11. We probably won't get in any solid conversation for about another minute until we are into the Texas zone of acquisiton on a local basis. The pass will be an extended one - let's see we can give you the exact time. The Guaymas circle will hold them for something over 6 minutes. Texas has them for nearly 9 minutes, and they will move on east. It should be something like a 20 to 25 minute at the very least, pass.extending on out to Bermuda. In the course, of which of course, we will have the burn to lower us from our high apogee back to a more conventional of 160 mile orbit. The burn is to take place at 43 hours 52 minutes 39 seconds. The delta velocity is 911.8 feet per second. Time of the burn will be 1 minute 48 seconds, total time, that includes an ullage burn of approximately 70 seconds of ullage and about 25 or 26 seconds of Primary Propulsion System burn. The attitudes are being looked at now on the ground. Texas is being remoted, and John Young is talking.

HOU Your attitude is holding good.

S/C Roger.

HOU If you will turn your encoder off, we will check that BM mode one more time.

S/C Roger, encoder off.

HOU Gemini 11, Houston. You can turn your encoder back on, the BM load is good.

S/C Roger.

Our present altitude, 214.5 nautical miles headed for a perigee of 156.3 nautical miles. Perigee will occur at 56.57 degrees west longitude. Watching the velocity buildup again we are up to 25,975 feet per second and still climbing. This is Houston, we are 6 minutes away from the burn. The velocity meter has been checked, the program has been checked very carefully and everyone is satisfied that we should proceed with the burn.

HOU Texas go local.

TEX Texas local.

The Agena/Gemini configuration is in an attitude with the big engine leading and it will fire into the direction of flight. In other words, a retrograde type burn, the onboard Orbital Attitude Maneuvering System will be turned off. The configuration will depend on the Agena for rate command, attitude control, and it will be in rate command. It is all quiet here on the ground and apparently up above. Here is Pete Conrad confirming that he is in Flight Control Mode 7.

S/C We are in 7, Houston.

HOU Roger, we show that down here.

END OF TAPE

We're about one minute away from the burn. The velocity is 26,352 fps, altitude 160, four miles short of perogee which would have been perogee on this orbit. The velocity meter has been enabled. Crew confirms. Burn was initiated, the sequence has been initiated. 16 pounders initiated.

HOU We show your 16 pounders going.

S/C We have .....

PPS has been initiated, the Turbines beam has reported as steady. We had a good burn, Pete Conrad says.

S/C Good burn

HOU Roger

The burn has been completed and it was a good burn.

Bermuda , go remote

S/C The address 08 00 518

HOU Roger

S/V The address 81 reads 02 13

HOU Roger

S/C The address 82 reads 560 122, over

HOU Roger

S/C (garbled) side by side, John.

HOU Really something, is isn't it.

S/C A recorders off

HOU Roger

S/C You got our latest orbit?

HOU Roger, a second

S/C I got the plume movies on all three burns. They ought to be interesting because the lighting conditions were different on each one.

HOU Houston, Roger

HOU Is your VM still on?

S/C Say again, John

HOU Roger, is your VM still on, over?

S/C Roger, I send pulse 520.... 520, check it.

HOU Roger, disable now

S/C Roger, thank you

HOU Right now you are in a 155 by 156, 11

S/C That's not fast for a couple of big birds, is it?

HOU It's outstanding, I think.

S/C Tell Neil, it doesn't look like we have to make those tuneups in the burn, this morning.

HOU That's a big disappointment for me, Dick

S/C Sorry about that, ol buddy.

HOU Maybe next time.

HOU 11, Houston, 30 seconds LOS at Bermuda.

S/C Roger

HOU How does it feel up there?

S/C Thank you John. It"s a lot better orbit.

Gemini Control, Houston, 43 hours 59 minutes and we have completed the burn activity with the Agena. You heard the preliminary orbit - the apogee 165.2 the perogee 156.2. Our

velocity now shows 25,396 fps. It will remain at that number within 50 to 75 fps of that number, while we stay in this relatively 160 circular orbit. Canaries will acquire in a few minutes. The bulk of the morning now, will be spent preparing for the EVA. The check list is'nt quite as likely as the one for the umbilical EVA, but it's still rather extensive. EVA is scheduled two hours from now, to last some two hours and twenty-five minutes. This is Gemini Control Houston.

END OF TAPE

GEMINI 11 MISSION COMMENTARY 9/14/66 5:05 AM TAPE 174 PAGE 1

This is Gemini Control, Houston, 44 hours 22 minutes into the flight. We have had conversation via Canary Islands and Kano, and the - John Young, while we have been talking has put in a call to the crew via Tananarive. The question came up - it was raised by Pete Conrad, he queried Houston and ask if the surgeon had any objection to his taking a "fox trot" pill. This shows up in the tape, which we will play for you in a few minutes. The reference to the "fox trot" pill is to an anti-bowel movement pill. Apparently the doctor advises that neither man has had a bowel movement in the course of this space flight. And they are hoping they can complete the flight without any bowel movements. The specific pill is called a lowmotile - we will have to check on the spelling of that. It is one word - lowmotile, and it is a canical substance which reduces the peristalsis effect and thereby limits the possibility of a bowel movement. Before concurring in it the surgeon wondered if there was any discomfort. He was assured by Conrad that there was no such discomfort. Here is the taped conversation Canary and Kano combined.

CYI Okay, appreciate it if you would turn your encoder off so we can dump the Agena.

S/C Turning the encoders off.

CYI Okay, thank you.

I am going to hit you with a TX here.

Okay, 11, Canaries. We are ready for your fuel cell purge, section 2 then 1.

S/C Roger.

CYI Houston, I have a PLA update for you.

HOU Roger.

CYI Gemini 11, are you ready to copy your PLA?

S/C This is 11, stand by.

CYI Roger, we are standing by.

S/C This is 11, go ahead, read.

CYI Okay, area 31-4, 49:28:28, 20 + 20, 26 + 05; area 32-4, 51:04:03, 20 + 21, 26 + 12; area 33-4, 52:39:40, 20 + 18, 26. 34-3, 53:58:55, 20 + 17, 25 + 56 + 08. Area 36-3, 57:10:31, 20 + 17, 26 + 19; area 37-3, 58:49:21, 20 + 21, 26 + 16, bank angles for all areas - roll left 85, roll right 95, weather in all areas good. SEP maneuver required on all areas. Did you copy?

S/C 11, copied.

We are all set to go on docking.

CYI Roger.

Okay, 11, Canaries, you can turn your encoder back on.

S/C Roger. Encoder is on and oxygen purge is completed right now.

CYI 11, this is Canaries. Did you do H_2, section 1?

S/C That's affirmative.

CYI We didn't see it on the ground here, we will play it back after post-test.

Okay, would you place your Cryo switch to O_2, please?

S/C Closing O_2.

CYI Would you place your Cryo switch to H_2, please?

S/C H_2 switch.

CYI Okay, 11, this is Canaries. You can place your Cryo switch off.

S/C Okay.

CYI That's all we have for you this pass.

S/C Roger, we are all GO up here.

CYI Roger, we show you GO on the ground.

We have LOS on Gemini.

We have LOS in the Canaries.

HOU Roger, I copied.

Kano, go remote.

HOU Gemini 11, Houston at Kano standing by.

S/C Roger, Houston.

HOU Go ahead.

S/C Ask the Flight Surgeon -

HOU Surgeon from Flight, we are copying you.

This is Houston will you say that again.

Over.

S/C Roger, ask the Flight Surgeon if I can take another "fox trot"?

HOU This is Houston, Roger. Tell him to go ahead. Go ahead. Over.

S/C Say again.

HOU This is Houston, go ahead and take it. Over.

S/C Okay. We will make the EVA on time.

HOU Roger.

Gemini 11, Houston. On that "fox trot" are you having any problems. Over.

S/C I'm not having any problems. It's just that stop and take time.

HOU Roger.

AFD Carnarvon Cap Com, AFD

CRO AFD, Carnarvon.

AFD Okay, you'll pick up a couple of items from Canary that we postponed to your pass. It includes status report and a first star update for S-13. It is on the way out there to you.

CRO Okay. I have got one question for you, what is our present orbit?

AFD Say again.

CRO What's our present orbit.

AFD Okay, 164.5 aligning at 156.3.

CRO Okay.

AFD That's based on Canary.

CRO Rog.

HOU Tananarive go remote.

TAN Tananarive remote.

HOU Gemini 11, Houston at Tananarive standing by.

S/C Roger.

We are trying to grab a quick bite, we haven't had anything to eat yet.

HOU Roger, go to it.

S/C Say again.

HOU Be our guest.

TAN Tananarive LOS.

END OF TAPE

This is Gemini Control Houston 44 hours 37 minutes into the flight. Carnarvon has both vehicles go. Carnarvon has given them both a go based on telemetry readouts. We have no conversation. He's sending them a message up to the space-craft now from Carnarvon. We imagine the crew is eating. Here is some conversation.

S/C Just finishing up. We'll be starting our EVA prep here shortly.

HOU Okay, we 'd like to get a crew status report from you.

S/C Okay wait one
Pilot ate day 2, meal A, everything but the solids. The command pilot ate day 3, meal B, and everything but the solids..and the water gun The water gun reads 1167.

HOU Roger. I've got an S-13 update for you when you are ready to copy.

S/C Okay, wait one. Go ahead one

HOU Okay the time is 45 00 00 mode A address 25 997 86 address 26 91139 address 27 91713 sunset 46 12 35

S/C This is 11 copy.

HOU Roger

72

HOU Carnarvon from flight

CRO Go ahead flight

HOU Bill, he said he ate everything but the what?

CRO No salad.

HOU No salad, okay. Okay, no salad.

CRO Flight Carnarvon

HOU Go ahead

CRO You copied that solids didn't you? Not salad.

HOU Oh, okay. S O

CRO Right.

This is Houston. That last report on the meal has caused a little consternation here in the Control Center. Some people heard it as "we've eaten everything but the solids" others thought he said "we've eaten everything but the salad". The consensus is that he said solids. And it will enter the log book as solids. We still have 3½ minutes of acquisition time. But it is unlikely that we'll have any additional conversation. We'll keep the line open.

HOU One minute to LOS

S/C Roger

CRO Roger Carnarvon

Carnarvon to flight

HOU Can you send us a Gemini LOS main, Bill?

CRO Roger, it's on its way

Houston here. That wraps up the conversation from Carnarvon. There is complete agreement in this control center that the crew has certainly put in a good days work before breakfast, which has literally been the case. They got up at 11:30 Houston

time. Benn up now for six hours and have completed two major burns, very tricky manuevers demanding their full time, the effort of both pilots. And only now are they eating breakfast. Lapsed time is 44 hours 47 minutes . This is Gemini Control Houston.

END OF TAPE

This is Gemini Control Houston, 45 hours 7 minutes into the flight. In 11 minutes from now at 6:01 Houston time, Central Standard Time, the Gemini spacecraft very likely will be viewable from the Houston area. It will be in a fairly high maximum elevation pass, 36 degrees in the sky and may be visible for as much as nine minutes. So, we would want to alert any Houston area people to look to the southwest. The spacecraft will move across Houston from the southwest to the east at an elevation of 36 degrees, on a third of the way up to the zenith and moving from southwest to east. It should be visible from approximately 6:01 to 6:10 a.m. Central Standard Time. Meanwhile we have some tape conversation recorded via Canton Island, here it is.

FD Canton go remote.

CTN Canton remote.

HOU Gemini 11, Houston at Canton, Over.

S/C Gemini 11, go ahead Houston.

HOU Roger, have you been thinking about this window cleaning, over?

S/C Say again.

HOU Have you been thinking about this window cleaning during the standup EVA? Over.

S/C I don't think he can reach either one.

HOU Roger, we were worried about that he might put inadvertent tension on the hoses reaching the windows and if the probability exists that

you can't reach either one of them, over.

S/C Okay, no we don't intend to try.

HOU Okay.

CTN Canton has LOS.

This is Gemini Control Houston again. The weather today looks like this, in the mid Pacific landing zone the skies will be partly cloudy today with a few scattered showers, variable winds of 10 knots will restrict wave heights to 3 feet. In the west Pacific landing zone, mostly couldy conditions with scattered rain showers will prevail, winds will be variable with 10 to 12 knots with three to four foot seas. In the eastern Atlantic landing zone, increased cloudiness and isolated showers will be the rule, persistant northeast trade winds will maintain 3 to 5 foot seas. In the primary landing zone in the western Atlantic, the skies Thursday morning will be partly cloudy with a few scattered showers, southeast winds of 15 knots will raise seas to 3 to 4 feet, in the end of the mission landing area. Interesting meteorological features that will be overflown during the day include tropical storms Franchisca and Helga in the eastern Pacific. This information has been provided to us by the U.S. Weather Bureau. At 45 hours 12 minutes into the flight, this is Gemini Control Houston.

END OF TAPE

This is Gemini Control Houston, 45 hours,22 minutes into the flight. Across the states, the crew has been quite busy with their pre-EVA checklist. A few minutes ago, Dick Gordon reported they were about to perform a suit integrity check, and we assume that they are into that now. They were also asked to bump up their - increase their - turn their manual heater on to increase their oxygen pressure. The Agena has been given a GO for EVA and Pete Conrad has indicated that they're running a little bit slow this morning on their checklist, but he believes they'll make the starting time just about on the mark. Elapsed time is to be 46 hours, would be 37 minutes from now. Here is some conversation as we move across the States.

	Guaymas go remote.
GYM	Guaymas is remoted.
HOU	Gemini 11, Houston, Guaymas standby
GYM	Roger.
S/C	We're progressing, we're a little late but I think we'll make it alright.
HOU	This is Houston, Roger. Gemini 11 Houston, over.
S/C/	11, go
HOU	Roger, you want to bump up that manual heat when you get a chance, over.
S/C	Roger, manual O_2 going up. We're getting ready

for the pressure check.

HOU Roger.

HOU Texas, go remote. Guaymas local.

TEX Texas remote

GYM Guaymas local

HOU Texas go local

TEX Texas local

S/C Houston, 11

HOU Go ahead

S/C We missed (garbled) Could you find a set of 20 commands/for about 45.... 4000 for us

HOU Roger, we'll work on it.

S/C We're going to make it on time

HOU Roger

S/C Houston, 11

HOU Go ahead, over

S/C We have both A pumps on for the checklist and passed the suit integrity test

HOU Roger, we saw it down here,/good to us too. looks

HOU Could you send reset timer 060?

BDA Bermuda remote.

HOU Gemini 11 Houston, over.

S/C Go ahead.

HOU Could you send reset timer reset 060?

S/C 060, Roger.

HOU Give the pointing command for 45 40, over.

S/C 21...Real slow and he'll put it in the computer direct.

HOU Roger. 25 08 473. 26 05 027.

S/C Got it

HOU 27 91 713.

S/C Got it, thank you

HOU Roger, it's still 46 12 35

S/c 46 12 35

S/C Houston, 11

HOU Go ahead, over.

S/C At the bottom of the checklist, it says Primary A Secondary B, which do you want?

HOU Primary A and Secondary B is good, over.

S/C Okay.

CYI Canary Islands, flight.

HOU Go ahead Canaries and copy

CYI no copy, just give them a standby

HOU They're tracking the ACS up there

This is Gemini Control Houston, 45 hours and 34 minutes and we're out on the Eastern edge of the Bermuda circle. Canary will acquire in a couple of minutes and will be a fairly low elevation in pass and will move through the Kano area for all the final checks prior to hatch opening. It appears that hatch opening will come on schedule now at very close to 46 hours, 46 hours even elapsed time into the mission. That event to occur over Tananarive. We will be remoting through

Tananarive and the primary action, of course, during the EVA will be to take ultraviolet pictures to shoot a number of different star fields, primarily what astronomers call hot-stars. They give off radiation to the 4,000 Angstom region. Photographs, then, some say, careful analysis can even identify what kind of matter may be in the stars makeup. In the flight of Gemini 10, John Young and Mike Collins took 22 exposures and got good data on 24 different stars. This particular, they plan to look at star fields and hope-fully will get data on as many as 45 stars. This is Gemini Control Houston.

END OF TAPE

This is Gemini Control, Houston, 45 hours 52 minutes into the flight. In addition to the S-13 photographs which are carried in our flight plans, some additional photographs, S-5, S-6, the topography photography, and the weather photography will be performed during the day-side passes during the EVA exercises. During the day-side passes, the crew will - Dick Gordon will work with the Hasselblad camera and take color photographs of unusual ground and cloud formations. Our present orbit is 156 by 164 and a revolutionary period of 96.3 minutes. We have had no additional conversation with the crew since our last tape report.. Tananarive will acquire the spacecraft at some 3 minutes from now and during that pass, we can expect to have depressurization of the spacecraft and hatch opening. With Gordon leaving the craft at 46 hours elapsed time, that is exactly 6 minutes from now. This is Gemini Control, Houston.

END OF TAPE

This is Gemini Control Houston, 45 hours 57 minutes into the flight. The switching has been done through the Goddard Center to remote Tananarive back into Houston here and John Young is putting in his first call to Gemini 11. He has advised them we are standing by, he got a Roger from the crew.

S/C .....depress the cabin in about 7 minutes.

HOU Roger.

Pete Conrad advised that we are going to depress the cabin in about 7 minutes, I thought I heard him say, which would put it a couple of minutes later then the exact elapsed time of 46 hours, about 4 minutes later. The crew has had a very busy day since their wakeup about seven hours ago, with the two big burns on the Agena engine. A very active day they didn't get around to eating breakfast until six hours after they had awakened. They had a good nights sleep, Pete said something over five hours of pretty sound sleep. It appears that we will have at least a two to three minute interlude, we'll come back up when we get closer to hatch opening. This is Gemini Control Houston.

END OF TAPE

This is Gemini Control Houston 46 hours 5 minutes into the flight. And just exactly one minute ago we heard again from the spacecraft, Dick Gordon reported, "We are depressurizing". Depressurization started; we clocked it at 46:04 minutes. This process will take a minute or two and then the door will be opened. Following this and a half hour plan, 2-1/2 hour EVA activity, which will be mostly consumed by taking photographs. The crew has another 5 1/2 hours of work stretching out in front of them today. And the high point of that will be evaluation of the tether, which Dick Gordon secured yesterday. A line between the two vehicles. The Flight Director is now advising Carnarvon that it may be that we will have no additional conversation with the crew. We won't know whether they have opened the hatch. The spacecraft is out on the eastern edge of the Tananarive acquisition zone. And it is entirely possible we won't. We can only assume the hatch is open by this time, elapsed time of 46 hours 6 minutes and 50 seconds. We still not have had LOS at Tananarive, but we expect it any second. Carnarvon should be acquired 6 minutes from now and we will be back with a status report at that time. This is Gemini Control Houston.

END OF TAPE

This is Gemini Control Houston, 46 hours 13 minutes into the flight and we are standing by for some word from Carnarvon from which we have not yet heard regarding acquisition, and the status on the crew. During the night here at the Control Center there was discussion of perhaps we might ask the - now we are getting a report that the cabin pressure is zero and that the - all the suit loops look proper on the first ground, the first call going up there. Conrad says they are depressurized, the hatch is open and the cameras are installed in their proper brackets and they are just waiting to pick up the proper stars during this first night pass. As we started to say earlier there was discussion during the night here of perhaps asking the crew - asking Dick Gordon to lean over and try to clean those windows, but it was decided not to attempt that to rule out any possibility of straining or stretching his hoses linking him into the spacecraft ECS system. The flight of Gemini 11 will continue with some smudgy windows. We only hope that the dirt or the obstruction on the windows won't mar the photographs or the view which Gordon and Conrad describe so vividly several hours earlier over Australia when they were up at an apogee of 740 nautical miles. The crew is - during this first night pass the crew is to take photographs of the star Antares in the constellation Shaula(Scorpius).

It will also take ultraviolet photographs of Achernar and a third constellation Gamma Velorum. The primary star in Gamma Velorum will be Canopus. The principal experimenters for the S-13, Ultraviolet Photographs, are the Northwestern University Space Science group at Evanston and the Office and Science and Space Applications, NASA Headquarters, Washington, D.C. We have six minutes remaining in this pass which has been extremely quite to this point.

This is Gemini Control Houston, still no conversation via Carnarvon, apparently the crew waiting to acquire the stars which was their last instruction to us. We have this brief conversation on tape which came at the start of the pass, some six or seven minutes ago. Here is how it went.

HOU Standing by for you Carnarvon.

CRO Houston Flight, Carnarvon Cap Com.

HOU Go ahead.

CRO Okay, the cabin is zero, the suits are good, ECS is on, and the OAMS control power is off.

HOU Roger.

CRO Gemini 11, Carnarvon Cap Com.
We are standing by.

S/C Roger, we are depressurized, we have the camera installed, fixing the hatch and we are just waiting to pick up the stars. We haven't got them yet.

CRO Roger.

CRO Flight, Carnarvon

HOU Go ahead.

CRO ECS is now off, and OAMS control power is now on.

HOU Okay, they are probably moving a little bit.

CRO Roger.

Houston again, 46 hours 20 minutes and we are still without conversation. We're a minute and a half away from loss of signal. We will continue to standby and monitor and bring you whatever developments that we can. The Canton acquisition this pass is to come about 11 minutes from now and it will be slightly more then an eight minute pass, with John Young hopefully talking to the crew, remoting through Canton Island.

CRO Gemini 11 Carnarvon. We're one.....
Gemini 11 Carnarvon. We're one minute to LOS.

S/C Roger. We're taking pictures at this time.

We're on the first series, Shaula.

CRO Roger.

CRO Carnarvon has LOS on Gemini, LOS on Agena. .

HOU Roger Carnarvon.

HOU How did the O_2 pressure hold up?

CRO Real well. It was reading 8.....

This is Gemini Control Houston. You heard the communication indicating loss of signal via Carnarvon. Canton to acquire 10 minutes from now. The crew has one pack of ultraviolet film which would be something on the order of 40 to 45 exposures and there is some additional pad in there. I would say at least 45 exposures. The surgeon now is advising the Flight Director that the rates during this early part of the extravehicular activity were about 90 on heart for both people and the respirations running 16 to 18, which the surgeon views as entirely satisfactory. At 46 hours 23 minutes into the flight, this is Gemini Control Houston.

END OF TAPE

This is Gemini Control Houston, 46 hours 33 minutes into the flight. And as we started talking, the Canton, go remote signal came through. John Young is advised that we are standing by.

S/C (garbled) Do you read me?

HOU Roger, you're very garbled, Pete, say again, over.

S/C Okay, ...complaining about the grease on my window. It's so bad, that I can't even see the star horizon field.....inside the outer pane.

HOU Roger, inside of the outer pane.

S/C It's going along just fine, we wouldn't be doing this well if we didn't have the Agena working for us.

HOU Roger. Do you need the point of command to see the star- to get the star?

S/C Yes we used the first step and took direction of Eridanus and / we're locked up on Achenar right now. Doing great. On the second series we ran pictures. Right now, we're headed for Orion. Might get all three of them.

HOU Roger, great.

S/C Say again

HOU That will be wonderful.

This is Gemini Control Houston. That was Pete Conrad talking about fairly garbled message. The sense of it was the smudges, he called it grease on my window is so bad, he said, I can't even see the stars. It sounds perhaps, like it's getting worse, although he's had quite a lot to say about it yesterday. The window situation is such that the flight director has asked the people in the back room here to come up with some pointing information where for the next series of stars in the next nightside pass, Pete can use his instruments to find these stars, such as the clouding on the window. The Canton pass, the Canton acquisition this time, will flow right into Hawaii so we'll be able to stay right with them, total pass of something like 12 to 14 minutes. The combined weight of these two vehicles after the big burn is presently carried - estimated at 11,900 pounds. The weight prior to the burns, combined weight of Agena and Gemini, was 14,625 pounds. There has been no additional conversation. Let's go back and keep the line open.

HAW Hawaii has C-band track.

HOU Roger, Hawaii.

HAW S-band track, Hawaii

HAW Gemini 11, Hawaii standing by

S/C Okay, Hawaii

S/C Okay, Hawaii, we're on our last step. We got all three steps. We plan to roll

off to 80 degrees and keep it on the horizon

Is it okay with everybody for a thermo?

HOU That's good

END OF TAPE

Houston here 46 hours 44 minutes. Conrad just advised that they plan to do a roll left manuever. Roll 80 degrees left and they will hold on that attitude. The left suit, "Pete" Conrads' suit showing a pressure of 3.71 pounds per square inch. The pressure on Dick Gordons' suit is reading 3.76. These reading coming from Hawaii. The left suit inlet temperature 49.4 degrees and the right suit inlet temperature 49.1. I think we'll have additional conversation here.

HAW Flight Hawaii

HOU Go ahead

HAW Roger. One. Check with ecom on F 55 per cent 55 point about 56 per cent.

HOU Ecom figures we have enough.

HAW Okay.

HAW 11 Hawaii

S/C Go ahead.

HAW Okay, we show about 56 per cent. You've got enough to get back in and out again.

S/C Okay. We may stay out and take some pictures for awhile.

HAW Okay, very good.

HOU Hawaii from flight

HAW Go ahead

HOU You might pass on that I've heard there is no cloud cover over the area this morning.

HAW No cloud cover over the area?

HOU Over this area.

HAW Okay.

HAW Just a bit of information..no cloud cover over the U.S.

HOU Hawaii from flight

HAW Go ahead.

HOU That's just over the Houston area that I know of.

HAW Okay

HOU Thought he might like to take some pictures.

HAW Okay
In case you want to take some pictures of Houston, there's no cloud cover there, 11.

S/C Okay Hawaii, we're going to..we're going to stay out.

HAW Okay.

S/C we'll take a EVA.

HAW Sounds like a winner.

S/C Did you..I've got my PQI covered up. Could you tell me how much fuel I'm using, I've got the impression I'm using a batch.

HAW Used about 15 pounds since Carnarvon.

S/C How much?

HAW Used about 15 pounds since Carnarvon.

S/C 15 pounds since Carnarvon.

HAW We probably lost the flight.
We've got LOS all parimeters.

HOU California has contact

California go remote.

California is remote.

Cal Gemini 11 Houston at California over.

This is Gemini Control Houston 46 hours 48 minutes into the flight. A few minutes ago "Pete" Conrad called down and indicated he was considering having Dick come back in to the spacecraft. The only purpose being that it is an easier place in which to work to change some of the lenses and change the mounts that go over the ultraviolet camera. There is no problem in any of the equipment apparently that "Pete" specifically query the ground on the amount of his oxygen remaining. He was told it was 56 per cent that it was more than enough if he wanted to bring Dick back in, close the hatch repressurize and get the camera set up for the next set of experiments it would be perfectly alright. "Pete" thought about it a little bit longer and indicated he..the last indication was that no he thought we'd just run as they are, hatch open. He also queried the ground about his fuel usage. He was advised that he had used 15 pounds of fuel since hatch opening at Carnarvon. That's 15 pounds of fuel his total propellage usage is about 25 pounds. At the start of the EVA Gemini 11 had 420 pounds of fuel remaining and this is 260 pounds extra. The crew has been vary as husbanded their fuel very well. 260 pounds was the pad they had going in to this EVA and well, it just couldn't be a better figure. John Young has put in a call through the California station we can

expect some additional conversation and we have an agreement from the crew that they'll try to take some pictures over the Houston area which is free of clouds this morning. Keep the line open and listen to any conversation as it develops.

Cal Gemini 11 Houston at California

GYM Guaymas does not gain contact with Gemini

HOU California Houston. Are we radiating?

CAL That's affirmative.

Gemini 11, Gemini 11 Houston at California over.

S/C Roger

CAL Roger, you've used about 25 pounds of fuel since Carnarvon, over.

S/C Houston Guaymas

HOUS This is Houston go ahead.

S/C How much fuel did you say we used?

HOU Twenty-five pounds of propellant, over.

S/C How much?

HOU 25 pounds from Carnarvon to Hawaii.

S/C Coming in weak I can't hear you.

I've got you now, 25 pounds.

HOU That's 2 5 pounds "Pete".

S/C That's right 25 pounds. Garbled

Guaymas remote California local.

Guaymas remote

S/C Hey, John where are we?

HOU You're right over Baja California.

S/C That's good, over Baja

HOU Gemini 11 Houston You have used 25 pounds over.

S/C Okay, now I'm with you. I couldn't hear you before, John You're much clearer on that tape. Okay, it'll probably cost us another 35 or 40 pounds then. Is that too much?

Hou Roger, Gemini 11 We're planning to wake you guys up a little early tomorrow you know.

END OF TAPE

S/C Yes, that is what is bothering me. I am showing 33 percent.

HOU Roger, that is ... for that number. It looks like they are somewhere around El Paso now, 11.

S/C ...I think we inadvertently knocked 50 and number 1 off. We just turned it back on again...

HOU Roger. Texas remote, Guaymas local.

TEX Texas remote.

GYM Guaymas is local.

S/C Say again.

GORDON Man, does Houston ever look beautiful down there! Tell Dr. Gilruth I will take his picture. We have got this camera tied to the spacecraft.

HOU Roger.

S/C Say again.

HOU You are approaching MSC now.

S/C Tell Dr. Gilruth we are going to snap his picture.

HOU Roger. Appreciate that.

GORDON It is beautiful down there. Boy, this is not a job, it is a privilege.

HOU Roger. You see those kids on the roof?

S/C They better not be.

CONRAD Well, while he is taking the good view, I am just burning up looking at the sun and a real nice sky.

S/C Where are we, John?

HOU You should be right over New Orleans.

S/C Okay.

HOU Maybe Pensicola or Mobile.

S/C Okay, I got.... We are drifting in rate command 80 degrees roll ... pitch down about 30 and we have got...on top of the hatch.

HOU Roger.

HOU Texas local.

TEX Texas local.

S/C Tell Dr. Gilruth we are taking a shot of the Cape, too.

HOU Roger, it looks like you are going to be a little north of there.

Houston here. That was Dick Gordon, who was so enthusiastic about the view over Houston. And apparently the Cape area, the Jacksonville area is relatively cloud free also. The left suit pressure, Pete Conrad's suit shows on our TM readout here at 3.74 pounds per square inch. Dick Gordon's suit 3.76 pounds. The - Dick Gordon's heart rate is just coming to us now from

the surgeon. He says there has been quite a bit of variation during the last 15 minutes. He has seen rates as high as 140 and as low as around a 100. He said it has gone up and down. Somewhat higher than it was at start of EVA over Hawaii where the rates were running about 90. The left suit in the temperature 49.4 degrees F and the same rate on the right suit temperature, Dick Gordon's suit. We still have a good 45 minutes left in this pass and we will have probably more conversation before they leave the Bermuda area. This is Houston standing by.

HOU Gemini 11, Houston. Do you require a point in command for the next star? Over.

S/C No, we will find it.

HOU Roger, we got some if you want to enter them. Be a little rough in that hard suit.

S/C Thanks a lot. You guys are all right. We used the old one. That is close enough for government work.

HOU Right.

END OF TAPE

This is Gemini Control, Houston, 47 hours 6 minutes into the flight. We still have a couple of minutes left on the Bermuda circle. During the next night pass, which will begin slightly east of Tananarive at an elapsed time of 47 hours 45 minutes, the crew will direct their attention to the star Antares and perhaps a dozen other stars that surround Antares in the constellation Scorpii - in the constellation Antares. Their next star field will be Shaula and again Orion with a guide star in Orion of Rigel, Rigel and Betelgeuse.

HOU Gemini 11, Houston.

S/C Yes.

HOU Roger, from Carnarvon you used about 50 pounds of propellant so far. Over.

S/C Okay.
Can you give me a cutoff for the early wake up?

HOU Roger, no cutoff. Over.

S/C Okay.

HOU One minute to LOS there, 11.

ANT LOS, Antigua.

END OF TAPE

This is Gemini Control Houston, 47 hours 22 minutes into the flight. The 11 crew checked in with Houston via Ascension Island a minute or so ago and the only conversation was to the effect that they were - the crew was standing by preparatory for their second night pass. They are being advised now that they are one minute to LOS and Pete Conrad came back with roger we're standing by. The night pass begins at 47 hours 45 minutes, slightly east of Tananarive. It will carry them on through to Hawaii in darkness and at 48:20 - approximately 48:20 to 25 elapsed time about one hour from now, they should be closing the hatch. That will be over the Hawaii station at the conclusion of the second night pass. We're estimating that the - and it's only an estimate now because it occurred out over the Indian Ocean out of contact, but we are estimating the hatch was opened at an elapsed time of 46 hours and 7 minutes. That may vary by a minute or two and it will probably - if it does vary it will be somewhat later then that. We don't believe that they could have gotten the cabin depressed and the hatch opened before 46:07, if anything it might be 46:08 or 46:09. At 47 hours 24 minutes that is our situation. This is Gemini Control Houston.

END OF TAPE

This is Gemini Control Houston, 47 hours 37 minutes into the flight. In the course of the last stateside pass, the surgeon has compiled some numbers on the heart rates. Dick Gordon had a high of 145 at one point, his low rate during the pass was 83. He had an average during the pass of 106 beats per minute. Pete Conrad had had a high of 120, his low was 75 and his average was 91. Gordons respirations during that period averaged 19 per minute while Conrads averaged 13. Also in the course of the pass you heard John Young and Pete Conrad refer several times to an early wakeup tomorrow morning. This refers to a possibility of an additional rendezvous in this mission, a rerendezvous, which may be attempted early tomorrow morning. The details of this maneuver and the possibilities of it happening will be discussed fully at the 9:30 briefing this morning. Since we have left the states, between Ascension and Tananarive, we seem to have chalked a dubious space first in that Pete Conrad reported both he and Dick Gordon had caught a little cat nap. He said they'd both dozed off. We have this tape from the Tananarive pass.

FD Tananarive go remote.

TAN Tananarive remote.

HOU Gemini 11 Houston at Tananarive, standing by. Over.

HOU Gemini 11 Houston at Tananarive, standing by.

S/C Roger. You got two guys taking cat napies up here that is all.

HOU 11 this is Houston, say again. Over.

S/C I said we were taking a cat nap.

HOU Roger, that is a first. First sleeping in a vaccum.

S/C Well we both just fell asleep here a few minutes ago and woke ourselves up.

S/C Hey John, how come everything floats up out of the spacecraft?

HOU This is Houston, say again. Over.

S/C How come everything floats straight out of the spacecraft? We just let little pieces of the Velcro go and they all just take off straight up right out of the spacecraft. Although we are rolled over on our side.

HOU Roger. I think that's a Collins effect or the Cernan effect one, over.

S/C Yes, well it seems to work.

HOU Gemini 11 Houston, one minute thirty seconds to LOS at Tananarive. Over.

S/C I sure wish this pass was over a star field.

HOU Roger.

END OF TAPE

This is Gemini Control, Houston, 47 hours 52 minutes, and 11 has tagged up with Bill Garvin, the Flight Controller in Carnarvon. The conversation was brief. Pete Conrad said "we are here and we are taking pictures." So apparently they are - they will be able to complete the three constellations that are in their program for this night-side before Dick Gordon comes in over Hawaii. There are 50 - a total of 50 exposures available in the ultraviolet film pack, as many as 10 were to be used to calibrate the camera, and leaving as many as 40 for actual star spectrographic photos. The control factors quite important in these because the exposures are relatively long - as much as 60 seconds. Most of them are at least 30 seconds long demanding very stable spacecraft. And if this pass goes like the rest of them during this EVA, we will hear very little and probably have additional conversation when we get to Hawaii regarding the hatch closure. 47 hours 54 minutes into the flight. This is Houston.

END OF TAPE

This is Gemini Control Houston, 48 hours, 7 minutes into the flight. We have had no additional contact since the spacecraft left Carnarvon. It's due over Hawaii at 48 hours 14 minutes, about 7 minutes from now. It would not appear from our orbital map that any remoting through Canton is possible. It's west Canton right now. The fuel useage thus far in the standup EVA, looks like about 50 pounds. That's the fuel. The total propellant, would be something more than that, on the order of 75 pounds, we would estimate. We still have plenty of additional fuel for whatever exercises we wanted them to take. Before we started EVA the estimate was, we had something over 200 pounds of extra fuel. This is Gemini Control Houston.

END OF TAPE

This is Gemini Control Houston, 48 hours 14 minutes into the flight. The controller at Hawaii has put in a call but there has been no acknowledgement as yet. It should be an interesting pass and we'll standby to follow it.

HAW Hawaii has intermittent TM.

HOU Roger.

S/C Hello Hawaii, Gemini 11 here. We were in the middle of ingress when you called. We have closed the hatch and we have started to repress. We've got all of S-13 complete.

HAW Okay, we copy all of that.
Standing by for your repress.

HAW Okay, Flight. He is starting to repress right now.

HOU Okay, did you get telemetry yet.

HAW That is affirmative. Solid on both Gemini and Agena. All systems look real good.

HOU Okay, send us a couple of mains.

HAW Roger.

S/C We went to manual heater - hold 700 pounds.
We're showing 1 psi.

HAW Roger.

HAW How about that, your meter reads just like ours.

S/C Just wanted to check you on the ground and see how you were doing.

HAW Are we GO?

S/C (garbled) onboards prime.
You are go on the ground.

HAW Roger. Thank you.

S/C It's a beautiful night you have down there.

HAW Haven't had a chance to look at it yet.

HAW Incidentally right now Houston is just ginning up a little L-band test for you guys during the tether exercise. They'll pass that up to you over the states.

S/C Roger.

This is Houston. We clocked the cabin repressurization process starting at 48 hours 16 minutes 25 seconds. We would estimate that hatch closure was at 48 hours 15 minutes. We are watching the cabin pressure build. It is presently showing 1.9, it will continue up to something over 5 pounds per square inch. Suit inlet temperatures both running about 50 degrees and all other values look like they are quite normal. The surgeon is advising that in the process of ingress they did note some somewhat elevated rates associated with closing the hatch and the general maneuvering that is required to

shinny into that small space. But the surgeon also notes that once the hatch was closed the rates settled down and they are approaching the normal range, right now 85 to 90. We'll continue to monitor the pass across Hawaii. We still have three minutes.

HAW	Flight, Hawaii
HOU	Go ahead
HAW	Do you want to keep that TM switch to real time and acq aid?
HOU	Say again.
HAW	Do you want them to keep that TM switch to real time and acq aid?
HOU	Okay, as soon as he gets through he will probably put it back to real time - to command.
HAW	I didn't notice it here in their ingress checklist that is why I was quering that.
HOU	ECOM here thinks he will. Let it alone anyway, we'll talk to them over the states about it.
HAW	Okay.
S/C	Hawaii, 11.
HAW	Go ahead.

S/C Okay, we shut off the repress, we're at 4.8, we'll let the regulator top it off.

HAW Okay, we concur..

S/C Boy is that feeling good to get that pressure off.

HAW I bet it does. We have about a minute before LOS, we'll standby.

S/C Okay, what's next on the schedule for us we hadn't looked at the flight plan yet.

HAW Lets see, you got all your post ingress procedures, then you have to purge.

S/C Is that over the states?

HAW That's over Carnarvon.

S/C Excellent, excellent.

HAW Hawaii has had LOS both vehicles. All systems GO at LOS.

CAL California has contact.

FD California go remote.

CAL California remote.

END OF TAPE

HOU Gemini 11, Houston at California. Over.

S/C Gemini 11, Houston. We're just going through our first ingress.

HOU Oh, roger. We have a ninth depth L-band test procedure for you when you're ready to copy. Over.

S/C Okay, wait one.

S/C Okay, I'm ready to copy.

HOU Okay, Gemini 11. Just prior to undocking we'd like to have you in the following configuration: have the L-band at stand by, five minutes prior to undocking; have your computer in NAV; turn on the Agena transponder, that's 071; and then turn your encoder off. After that the ground will send SPIRAL SELECT and then you'll be cleared to undock. Now after undocking you want to hold a bore sight at about 20 feet separation, turn your radar on. We'll look at the antenna you're locked on for about three minutes and if you're on the SPIRAL we'll send DIPOLE SELECT. That will be from the ground. After that you'll be cleared to turn your encoder back on again and after one more minute of boresight, we'd like you to send ACQ lights on and off, 251, 250. We'd also like you to report azimuth, elevation,

lock-on range, range rate and maps. And you can leave your radar on for the stateside pass.

S/C Okay. Let's be sure I got it all. L-band at stand by, five minutes. Prior to undock, computer in NAV and tie up the L-band in the Agena, 071 and then turn the encoder off. The ground will select spiral. Dock out, undock 20 feet, the radar on and we'll look at it for three minutes. And the ground will select dipole and we can turn our encoder on and look for one more minute. And then you want us to send acq lights on, acq lights off, 251, 250. And after that you want a report on the azimuth, elevation, range, range rate and maps.

HOU Roger. That's correct and we have a node update for you.

S/C Roger, wait one.

S/C Go, ready to copy.

HOU Roger, node 49:36:55, rev 31, 135.5 east, zero hours, 53 minutes, right Ascension.

S/C You're fading from me. Say again the longitude and the local.....and right Ascension.

HOU Guaymas remote, California local.

GYM Guaymas remote.

HOU Gemini this is Houston through Guaymas. Did you read?

HOU Gemini 11, Houston through Guaymas. Do you read?

S/C Yes. Say the longitude and the right Ascension again.

HOU Oh, roger. We faded through California. That's 135.5 east, zero hours, 53 minutes, right Ascension.

S/C You faded again.

HOU Stand by.

HOU Texas remote. Guaymas local.

S/C That's 135.5 what?

TEX Texas remote.

GYM Guaymas local.

HOU Gemini 11 this is Houston through Texas. That was 135.5 east, zero hours, 53 minutes, right Ascension.

S/C Copy.

HOU Good show.

END OF TAPE

HOU Texas local.

TEX Texas local.

HOU Gemini 11, Houston. Over.

S/C Go ahead.

HOU Roger, could you check your biomed circuit breaker? Over.

S/C Yes, it is off. We will get it on in a second. I had it off when I changed the stand up cable.

HOU Roger.

S/C It is on.

HOU Gemini 11, Houston. Over.

S/C Go ahead.

HOU Roger. Can your A-pumps? Over. Both A-pumps? Over.

S/C Primary A is on and Secondary B is on. Okay A is on and the primary D is on primary. Do you want to put the other A-pump on?

HOU Roger, you are fully powered.

S/C Say again.

HOU Roger. You are powered up. Over.

S/C Okay, we will put the A on the secondary.

GTI LOS Turk.

HOU Gemini 11, Houston one minute and 20 seconds to LOS at Antigua.

S/C Roger, I have the feeling we are a little bit behind. We will see how we progress and we

S/C will see how we are progressing and let you know over Carnarvon. We are pretty busy.

HOU Roger. That was a lot of EVA.

S/C Yes. We are wrapping it up right now. Thanks a lot.

HOU All right, the new world's outdoor record.

S/C Roger.

END OF TAPE

Gemini Control, 49 hours, 36 minutes into the flight. Gemini 11 is over New Guinea on its 31st revolution. We have the tapes of the passes through Ascension, Tananarive and Carnarvon. We'll play those for you now.

S/C Houston, this is 11.

HOU Gemini 11, this is Houston at Ascension standing by.

HOU Gemini 11, Houston at Ascension standing by.

S/C Hello, can you read me?

HOU Gemini 11, Houston. Did you call?

S/C Yes. We're going to hate to leave this Agena. It's been pretty kind to us.

HOU Say again.

S/C I say we're going to hate to leave this Agena. It's been pretty kind to us.

HOU Sure has.

S/C For ground information at seven seconds, the primary propulsion - three minutes and 19 seconds of secondary propulsion and 43 percent energy fuel.

HOU Roger.

HOU Tananarive go remote.

TAN Tananarive remote.

S/C Houston, Gemini 11.

HOU 11, Houston. Say again.

S/C Oh, roger. We have .... dropped off on our electronic timer. Could you give us a GET

time hack?

HOU Roger. We'll give you one. In about 45 seconds it will be time 049:11:00.

S/C Roger.

HOU Okay, about 30 seconds now.

S/C Roger, understand. 49:11:00. Call us down, please.

HOU Roger. 10 seconds. 5, 4, 3, 2, 1 Mark. 49:11:00.

S/C Give us a hack at 10.

HOU We missed it. We can try for 20.

S/C Can you make it 15?

HOU 1 Mark. That was 20 seconds.

S/C Want to align the course?

HOU Roger. We'll go all the way to 49:12:00. 15 more seconds. 10, 9, 8, 7, 6, 5, 4, 3, 2, 1 - Mark. 49:12:00.

S/C We're with you.

HOU Roger.

S/C Houston, 11.

HOU Go ahead, 11.

S/C I can't get any maps on the Agena unless I turn the L-band on.And then when I turn the L-band on everything seems to be okay.

HOU Roger, understand. You can't get commands in unless you turn the L-band on. And when you

do, everything's okay. Is that correct?

S/C Well, at least I don't get any maps back. We couldn't get the SDP to turn off so that's correct.

HOU Roger, 11.

HOU 11, Houston.

S/C Go ahead.

HOU Did you say that when you do command the SDP on and you do not receive a map light the SDP in fact does come on?

S/C That's negative. It was on and I tried to command it off and it wouldn't go off so I had to turn the L-band on to get anything into the Agena at all.

HOU Understand. Gemini 11, Houston.

S/C Go ahead.

HOU Could you turn the L-band off and then cycle the arm stop switch and check the results?

S/C I've already done that and the longitude is correct and the arm stop switch does cycle.

HOU Roger, understand it functions with the L-band off.

S/C Affirmative.

S/C Houston, 11.

HOU Go ahead, 11.

S/C Now we're just still playing with it and I turned the L-band off and everything works okay now.

S/C Do you need a temperature in the L-band?

HOU Roger. You're just about LOS. We'll see if we can get it for you.

HOU 11, Houston.

S/C Go.

HOU Roger. We checked the temperature. It's 58 degrees which is normal.

TAN Tananarive LOS.

Telemetry solid on Agena. Telemetry solid on Gemini.

CRO Flight, Carnarvon.

HOU Go ahead.

CRO Did you copy that?

HOU Stand by.

CRO Give me a mark when you start the purge.

S/C Yeh, we're getting ready. Mark, hydrogen on number 1.

CRO Roger. And I've got a sunrise time for your tether exercise.

S/C Okay.

CRO 49:49:47.

S/C And we've got a delta P light on hydrogen that time for the first time.

CRO Roger.

S/C And we're getting it on the other one too.

CRO Yeh, we see it on the ground.

HOU Carnarvon from Flight.

CRO Go ahead, Flight.

HOU Does he have the cross over open?

CRO Is the cross over open?

S/C Yeh, its open.

OK, Carnarvon, be advised that I have turned off the auto and manual circuit breakers, retro sequence control one and two. Attitude indicator retro circuit breaker is open, and that leaves me three switches to go to jettison the tether. And that's the configuration we'll start in. Oh, excuse me, I've got the RCS squibs one and two open also.

CRO Rog. On that L-band problem you had in commanding, did that happen about the same time you had that electronic timer circuit breaker off?

S/C Yep. That's possible.

CRO Okay.

S/C I probably knocked it off when I was in the back stowage box.

CRO Rog. Did you copy, Flight?

S/C And it was also .... for by about a minute.

HOU We copy. That could have been the problem.

CRO Rog.

HOU Carnarvon from Flight.

CRO Go ahead, Flight.

HOU Ask him what he feels his concern is on this radar, is it a time problem?

CRO 11, Carnarvon.

S/C Go ahead.

CRO What do you think the problem is, Pete, in performing that L-band test at the same test you spun up?

HOU Non-spun up.

CRO The non-spun up.

S/C They say go fly in front of it at 20 feet and if you want and try to do it/once we get undocked - is that the idea?

HOU Yeh.

CRO That's it.

S/C Okay. The 20 feet was confusing me.

CRO Okay.

HOU Yeh, after he....

S/C We'll try it after we undock.

HOU After he undocks at 20 feet sep turn the radar on as he's moving out.

CRO After you undock and you turn the radar off as you're moving out.

HOU On, at 20 feet.

CRO That's turn the radar on at 20 feet.

S/C Okay.

CRO Flight, Carnarvon.

HOU Go.

CRO That circuit breaker must have been off according to my GR block. It was exactly three minutes in lagging. So I think it was off for about three minutes.

HOU Okay.

S/C Okay, oxygen down on number 1, going on number 2.

CRO Roger.

CRO One minute to LOS.

S/C Roger.

CRO And we'll see you tomorrow morning.

S/C Okay. Pretty nice day today, Bill. You guys look great from 750.

CRO You better bring the pictures back.

S/C Yeh, we got them. I hope. Go have a ... for me will you?

CRO I sure will. In fact, I might bring you guys back a couple.

S/C I'd appreciate it.

CRO Carnarvon has LOS both vehicles.

CRO Flight, Carnarvon.

HOU Go ahead.

CRO Did you copy that about the Delta P light on the H_2?

HOU Affirmative.

This is Gemini Control, 49 hours, 47 minutes into the flight. We're about three minutes away from acquisition at Hawaii. Flight plan calls for the undocking and the tether evaluation to begin 20 seconds prior to acquisition at Hawaii. Pete Conrad could decide to hold off until he has acquisition before he undocks. We'll come back up in about a minute or minute and a half and stand by for this Hawaii pass. This is Gemini Control.

END OF TAPE

This is Gemini Control, 49 hours 49 minutes into the flight. We are 25 seconds away from Hawaii acquisition of Gemini 11. We'll standby for this pass at Hawaii.

HAW Hawaii has TM solid.

HOU Roger

HAW Intermittent TM

HAW Gemini 11 Hawaii.

S/C Roger Hawaii this is eleven. We've undocked from the Agena. Agena is in inertial attitude, down 3 degrees below local vertical and we're going on to tether.

HAW Okay.

HAW Roger. They're in a terrible attitude.

S/C We sort of upset the Agena a little bit with the tether when we undocked. He's sort of stabilizing back into his attitude again.

HAW Okay.

S/C The tether is not flopping at all and is maintaining tension very nicely.

HAW Copy.

S/C I just came on with the radar and I don't have any lock.

HAW Okay, why don't you go off with the radar.

S/C Radar is off.

HAW Okay, turn your encoder off.

S/C Encoder is off.

HAW Okay I am going to command fire on antenna from the ground.

S/C Roger.

HAW Okay we're cycling you here. Let's hold it there for a minute.

HAW Okay, do you want to turn your encoder on.

S/C Encoder coming on.

HAW Turn on the radar.

S/C This figure is starting out a little bit poorly for the - then spun up because .....I just got to the end of the tether there is suppose to be a (garbled)

HAW Okay Flight, he's/locked on the diapole antenna.

HOU Roger

S/C Okay, it's hung up in the back now. We didn't get it all out we only got about 50 feet out and I jerked it a little bit. We'll try it again.

HAW Okay.

S/C This is really wierd.

HAW I'll bet.

HAW Have you got your OAMS cut off for this exercise.

S/C Say again, what is it.

HAW 10 percent

S/C Roger.

HOU Hawaii from Flight

HAW Go ahead.

HOU That leaves him enough to do the rest of the flight plan and experiments.

HAW Okay.

HAW 10 percent will give you enough for the rest of the flight plan and your experiments.

S/C Okay.

HOU Hawaii from Flight.

HAW Go ahead

HOU Just the experiments

HAW Oh, just the experiments.

Roger.

HOU Hawaii from Flight

HAW Go ahead

HOU Did you say he was locked on the diapole?

HAW Affirmative

S/C Okay we got it to running.

HAW Say again.

S/C We got it coming out free the rest of the way.

HAW How about having Dick send that acq lights on and off.

S/C Say again.

HAW How about having Dick send acq lights on and acq lights off.

S/C Okay. They are on.

HAW Okay.

S/C They came on and they went off and I have no map.

HAW Both ways.

S/C That's affirmative. Both ways. No map but I do get the acq lights.

HAW Okay.

S/C We're ten feet from the end.

S/C Oh man, I really upset the Agena. I can't - I haven't got the end on the swivel yet. I hit it very lightly and it just really upset the Agena so I'm not even going to be able to start the non spun up.

HAW Okay we copy that.

HAW Flight do you want them to go right into the spun up?

S/C Oh, I see what's the matter. It's hung on the handle, the right handhold handle.

HOU Hawaii from Flight.

HAW Go ahead.

HOU That is up to him. If he determines he can't start it.

HAW Okay.

HAW Okay 11, if you feel like you can't do the non spun up business and you want to start the spun up exercise you can have at it.

S/C We are already passed the point of doing the non spun up.

HAW Okay, at your discretion then.

HOU Hawaii from Flight.

HAW Go ahead.

HOU The ACS off.

HAW Negative it is on.

HAW We have a minute to LOS, what is your plan?

HOU Hawaii from Flight.

HAW Go ahead.

HOU Remind him to - you might remind him of ACS off before he starts to spin.

HAW Roger.

HAW 11 Hawaii. Don't forget the ACS off command before the spin.

HAW He may have caught that Flight. I don't know how we stand for LOS.

HOU Roger.

HAW We've had LOS,all systems were GO at LOS. The ACS was still on.

This is Gemini Control, 49 hours 59 minutes into the flight. We'll continue to follow Gemini 11 through the stateside pass, we'll standby to pick it up at California.

FD California go remote.

CAL California is remote.

END OF TAPE

HOU 11, this is Houston, go ahead.

S/C OK Houston. This thing is hot on the handle out here. I'm going to go ahead and try and spin it up. I can't get it off the handle.

HOU Roger. Is your CS off at this time?

S/C Say again.

HOU Is your ACS off at this time?

S/C Yes.

HOU Roger.

S/C Would you see if our ACS is off, ground.

HOU We'll check on it, 11.

S/C Now about this (garb)

HOU Roger, and we're not going to get any data until Texas.

11, Houston. Like to recommend that you stand by until over Texas where we can verify ACS off.

11, Houston. Do you still have lock-on?

S/C We never had a lock-on light.

HOU Roger.

Unknown Guaymas remote, California local

Unknown Guaymas is remote, California is local.

S/C Houston, 11.

HOU Go ahead 11.

S/C Roger. The nylon tether is completely free at this time.

HOU Ah, roger.

S/C It's not stuck to the handle of the docking cone, it's only at the turn-patch point.

HOU Roger. We show your radar locked on to the Agena, but apparently the Agena information isn't getting back to you.

S/C No I lost it cause I can't send the AC lights on and off.

HOU Roger.

S/C I don't even think I'm going to be able to get it started spinning; I had ACS off I guess, and got some rates into it and am having a hard time station keeping on it. I can't really psyc out what's going on.

HOU Roger.

Gemini 11, Houston. Suggest you turn ACS back on at this time. That would be command 401.

S/C Roger. I'll check it.

HOU Roger.

Stand by to turn it off when we get some more information. Get data in Texas.

S/C Roger. Yeh, but three did have some motions and the ground going by and the tether whipping around, I'd really have had a hard time figuring out who would have gone first.

HOU Roger.

S/C I've hit the end of it a couple of times inadvertently, left a big bow in it, but all of a sudden (word garb) you know you're at the end of it.

HOU 11, Houston. We indicate that your ACS is on. You can send ACS off and 400 when you're ready.

S/C Roger, understand.

Unknown Texas remote, Guaymas local.

Unknown Texas remote, Guaymas is local.

S/C This tether is doing something I never thought it would do. It's like the Agena and I have got a skip rope between us and it's rotating and making a big loop, and I got things pretty well under (word garb) now and it looks like we're skipping rope with the thing out here.

HOU Roger, and we still indicate on the ground that the ACS is on.

S/C We're trying to get to the end of the tether. We're getting there slowly.

HOU Roger.

S/C Man, have we got a wierd snarlin' job going here. This will take somebody a little bit to figure out. The tether is still doing this spin like I say, and that's the reason I can't get the end of it, because it keeps a bowing it while its spinning it and it has tension in it.

HOU Roger.

S/C I can't get it straight.

HOU Gemini 11, Houston. We indicate you've used approximately 40 pounds of fuel. Could you give us a PQI reading if possible?

S/C Roger. 22 percent.

HOU Say again.

S/C Roger. It's 22%.

HOU 22.

S/C Roger.

END OF TAPE,

HOU 11, Houston consensus here is that you will never be able to get the spin the tether out by applying tension to it and using your own judgment, if you desire you can initiate the spin from this point.

S/C Roger, it is down right now, and we are getting in position to do the spot on station keeping right now. It is out of it.

HOU Good.

Texas local.

S/C Houston. Watch it. Let me know if I get ACS on again there.

HOU Roger. 11, Houston. We still show ACS on here.

S/C Roger, we are just getting a buzz right now. Man, this towing is a job. Is ACS off?

HOU Roger, we confirm it off.

S/C Roger, thank you. Well, we started it.

HOU Roger. 11, Houston, do you have an tension in the cable at this time?

S/C Negative. As soon as I backed off and down it stopped. And a lot of slack in it.

HOU Roger.

S/C Hey, this is not going to work. As a matter of fact, - well, I will wait and see. Hang on. Here goes the jerk. Boing.

S/C Well, the tension must be extremely light because we can't even hardly feel it. But we did hit the end of it so by golly, we are oscillating.

HOU Houston roger.

S/C Hey, I will tell you what though. Once this thing settles down a little bit more on that gyro, it will whistle over the night side, it looks like.

HOU Roger. Did you put full thrust down? To initiate?

S/C Either side right now.

ANT LOS Antigua.

S/C Well, it seems to be settling down. We are spinning after a fashion. As best as I can determine we got sent up about 45 degrees out of the orbital plane.

HOU Houston, roger.

S/C Al, check and see if I don't have the running lights on. I think I do.

HOU We will check. Hey - 11, Houston. Your running lights are on. We show you with approximately 200 pounds of propellant remaining.

S/C Good. Actually, I am quite surprised. We

S/C had a great deal of slack in the tether when we - tied up a time or two. But the tether seems to be - have kinds of tension in it, like we really are spinning.

HOU Roger, could you give us PQI?

S/C It looks like about 21 percent.

HOU Roger. 11, Houston, we show you 27 minutes from sunset. 11, Houston. Could you give us a feel for how your spin is progressing now?

S/C I think it is really settled down, the attitudes haven't, but we apparently have constant pitching, to the tether. We have only lost sight of him once. And what he is doing is - we've wound up so that our dispersions are mostly in yaw. And he is yawing to oh, 30 to 35 degrees in either side of us. We have rolled about 90 degrees to him right now. The tether is maintaining tension at all times. Didn't think - first started.

HOU Roger. How do you feel now about going into sunset in it spun up?

S/C Goes right ahead, we will press on. It might be some damping in the tether because we got a good 6 feet of slack right after I let go of it. It may be that there is a bit of

S/C some elasticity to the tether.

HOU Roger.

S/C It is damping down considerably. I believe have that we/damping.

HOU Houston, roger.

GTI LOS Turk.

HOU 11, Houston. 30 seconds from LOS.

S/C We will press on. We have got a lot of tension; here goes the acid test. It is going on her nose now. We have got a lot of tension. Good steady tension. I can't even feel it oscillating. It looks like we have got a good spin going, so that it is going to hold it.

HOU Roger. Is it still 40 degrees or so out of the orbital flight?

S/C The Agena pulls us with respect to the tether is very low, but the Gemini motion with respect to the tether - we are the ones that have all the motion. It seems to me we are doing 48 degrees, plus or minus. Right now we are just about - we are only flying 30 degrees or so out of the orbital plane. I can't really tell...

HOU LOS, 11.

Gemini Control 50 hours 22 minutes. We have had LOS at Antigua. Gemini 11 coming within range of the Rose Knot tracking ship at 50 hours 24 minutes 17 seconds. It will pass directly from there into Ascension range for a brief time. We will pick up Gemini 11 again at the Rose Knot. This is Gemini Control.

END OF TAPE

This is Gemini Control at 50 hours 24 minutes into the flight. RKV is putting in a call to Gemini 11.

S/C 11 here, everything is going okay.

RKV Roger we'd like to know what the period of spacecraft oscillation is? If you have any estimate.

S/C The rate is around - I didn't get the oscillation but the rates were about 1 degree per second going out and they've jammed. I'd say they are down to about a half degree per second. The whole thing is begining to stabilize out pretty well.

RKV Real good. Mighty fine. Glad to hear that. We'd also like to know if you got an indication of the analog range or range rates.

S/C The analog is showing 00 at 300 000.

RKV Roger copy. 0 0 at 300 000.

S/C Say again RKV.

RKV Roger I copy 0 0 - 300 000.

S/C Yes both the range rates are zero and the range needle is (garbled) at 300 000 feet.

RKV Okay very good. Thank you.

S/C Vigital range is 120 on the computer.

RKV Digital range 120 on the computer.

S/C Hey I got a question them in Houston. Will you tell them that we've been using the 16-mm movie camera with an 18-mm lens in it and I've gotten about - well I got all of this, the camera has been on all the time and I was wondering if they want us to change to the 75-mm lens or keep on with the 18.

RKV Roger, we'll check with them.

RKV Flight do you copy.

HOU We copy.

HOU RKV from Flight

RKV Go Flight.

HOU Stay with the 18.

RKV 11, RKV. You can stay with the 18.

S/C Okay.

HOU RKV from Flight.

RKV Go Flight

HOU Send us some OBC's.

RKV Roger

HOU RKV Houston Flight

RKV Go Flight

HOU Ask him if he can estimate how long it takes him

go from peak to peak on his oscillations.

RKV 11, RKV. We'd like to know if you can estimate how long it really takes you to go from peak to peak on your oscillations.

S/C Okay. We'll start timing these good things here (garbled)

RKV Okay.

S/C RKV, 11.

RKV Go eleven.

S/C The oscillations seem to be a little bit random. We keep getting coupled in a different axes and it's rather hard to sort them out. We also figure that there is probably some fuel sloshed around in the Agena. Maybe - which is doing it.

RKV Roger, copy.

RKV Are you getting the air to ground transfer ok.

HOU That is affirmative.

RKV Roger.

S/C We're having oscillation about 50 seconds.

RKV Copy, having oscillation about 50 seconds.

RKV 11 RKV. We have about one minute to go.

S/C Okay, we'll press on.

RKV Roger

HOU RKV from Flight.

RKV Go Flight.

HOU Ask him if can try to estimate his rotation rate and we'll pick him over Ascension or Tananarive.

RKV They would like to know if you can estimate your rotation rates and they'll pick this information up over Ascension or Tananarive.

S/C Say again.

RKV They'd like to know if you can estimate your rotation rates and they'll pick you up over Ascension or Tananarive.

S/C All right, we'll try but we can get coupled up so badly that I can't really tell which way we're spinning.

RKV Okay.

RKV Flight we've had LOS both vehicles.

HOU Gemini 11 Houston. We're standing by for your estimate of your rotation rate.

S/C Do you want the spin rate we have?

HOU 11, Houston. Say again.

S/C I 'm having a hard time pulling it out now. I have great roll rotation, the two vehicle

rotation is very low.

HOU Houston, roger.

S/C I see the ground going by....the orbital plane it really screws you up. It's very hard to (garble) this.out.

HOU Roger

HOU 11 Houston. Our ground information indicates from Agena that it's about 40 degrees per minute.

S/C 40 degrees per minute, okay.

END OF TAPE

HOU Gemini 11, Houston. Thirty seconds to LOS.

S/C Roger

This is Gemini Contrd, 50 hours, 37 minutes into the flight. Ascension has just lost signal from Gemini 11. To recap a bit, the Agena Systems Flight Controller here on the ground estimates the rotation rates in this span at 40 degrees a minute, or it would take about nine minutes for a complete revolution. The next station to acquire will be Tananarive at 50 hours, 45 minutes, 21 seconds. We'll come back then and pick up Gemini 11. This is Gemini Control.

END OF TAPE

This is Gemini Control, 50 hours, 45 minutes into the flight. Gemini 11 has just started the nightside of its 32nd revolution and we're just about to pick up at Tananarive. We'll stand by there.

TAN Tananarive AOS.

HOU Tananarive remote.

TAN Tananarive remote.

HOU Gemini 11, Houston. We're standing by.

S/C Roger. Everything's going just fine.

S/C Houston, 11.

HOU Go ahead, 11.

S/C Roger. The Gemini is yawing at about, oh, two thirds of a degree per second and the highest pitch or yaw rates that we're seeing right now with a couple are also about two thirds of a degree per second.

HOU Houston, roger. Two thirds of a degree per second in both cases.

S/C It's very evident that the back of the tether is on the docking bar. I got from CG that this is advantageous for us in that the Agena motion is staying out in front of our windows all the time and therefore, it's very seldom that we lost sight of it.

HOU Roger. For your information if you wanted to use that 75 millimeter lens you should hand

hold the camera.

S/C Okay. I don't think that will be necessary. We've gotten good pictures and the 18 will give you a wider field of view and I've got one old magazine and one frame per second now and I plan to run another one on the next day pass.

HOU Roger.

(PAUSE)

HOU Gemini 11, Houston. We're about one minute from LOS.

S/C Roger, Al. We're settling down here pretty well, as a matter of fact. You'll have us going to sleep on you. Matter of fact, think I will.

HOU Roger.

TAN Tananarive LOS.

Gemini Control at 50 hours, 53 minutes. We've had LOS at Tananarive now. Both Pete Conrad and Dick Gordon reporting this tether exercise going very well as they're still on the nightside of this pass. Ground track of Gemini 11 passes north of Carnarvon within the next few hours. So the next station to acquire will be the Coastal Sentry tracking ship out in the western Pacific. Gemini 11 due there at 51 hours, 9 minutes, 12 seconds. This is Gemini Control.

END OF TAPE

This is Gemini Control at 51 hours, 9 minutes. Gemini 11 still in the night cycle, coming up on the Coastal Sentry now and we'll listen there.

CSQ Our TM is real spotty.

Gemini 11, CSQ.

S/C Go ahead.

CSQ Roger. Could you give us a readout of address 35.

S/C Address 35 coming up, (garbled)...099

CSQ Say again, eleven.

S/C Roger, address 35 is reading 09999, ...just a bunch of garbage, over.

CSQ Roger.

Copy, Flight?

S/C (Static)..our radar in here, and it tried to lock, and ....intermittently for...(static) ....20 minutes ago, and 10 minutes ago... (static) so we must have had some sort of .....in our onboard radar. Can you confirm that?

CSQ Stand by, I'll check.

Did you copy that flight?

HOU CSQ from Flight.

CSQ Go ahead.

HOU We think it is in the Agena transponder right now.

CSQ Roger.

Eleven, CSQ

S/C Go ahead

CSQ They seem to feel that it's in the Agena transponder.

S/C Okay, now the Agena is up and to our left and the address shows that it's up and the elevation shows that it's (garbled) up and apparently we have some sort of information going through our radar. Our radar needles are nulled and we seem to be getting some sort of lock also.

CSQ Roger, copy.

CSQ Flight, CSQ

HOU Go ahead

CSQ Okay our TM is still real ragged. I don't know whether you are getting any good information out of our summaries or not.

HOU Roger. Are you sure lock on.

CSQ Affirmative

HOU Check Hotel 331.

CSQ It's showing zero.

HOU Say again

CSQ Hotel 331 is showing zero.

HOU Roger.

CSQ Do you want a prop quantity readout at this time?

HOU CSQ, Houston Flight.

CSQ, Houston Flight.

CSQ Go ahead Flight.

HOU Ask the crew if they can use a pencil or something to see if they can determine any g field effect and also to see what their thinking is. We can talk to them over Hawaii about possibly spinning it up at a little higher rate.

CSQ Go over the first part again.

HOU Also ask them to think about possibly spinning up at a little higher rate.

CSQ No the first part Flight.

HOU Oh, ask them to use a pencil or something and see if they can note any g field effects. Or if they feel any.

CSQ Houston Flight, CSQ

HOU Go ahead

CSQ What type of effects did you say?

HOU G field

CSQ G field?

HOU Affirm.

CSQ Roger

CSQ Eleven, CSQ

S/C Go ahead

CSQ Okay Houston would like you to use a pencil or something to see if you can establish any g field effects.

S/C Okay

CSQ And also they are going to talk to you over Hawaii about possibly setting up a higher rate.

S/C No we haven't seen any.CSQ, any effects

HOU CSQ Houston Flight.

CSQ Go ahead Flight.

HOU Did he say he had been trying and hadn't seen any effects?

CSQ That is affirmative

HOU Roger

CSQ Eleven we've got about one minute to LOS.

S/C Roger.

CSQ You're all go down here on the ground.

S/C Thank you.

S/C It's a GO up here too.

CSQ Roger, that.

This is Gemini Control, 51 hours 16 minutes into the flight. The CSQ has lost acquisition of Gemini 11 now. The next station to acquire will be Hawaii at 51 hours 26 minutes 24 seconds. Mrs. Charles Conrad, wife of the command pilot of Gemini 11 came

into the viewing room here at the Control Center during this pass. She is now an interested observer of her husbands flight. This is Gemini Control.

END OF TAPE

Gemini Control at 51 hours 26 minutes into the flight.

Hawaii acquiring Gemini 11 now, lets listen.

HAW — Gemini 11 Hawaii

S/C — Go ahead

HAW — We'd like to get an Agena tape dump so if you would turn your encoder off we'll try to get that.

S/C — Roger. Would you advise Houston that this thing is stabilized completely almost. The Agena and Gemini oscillations are almost all being done except the roll and it's sticking right straight out our nose on the end of a tight tether. Very nice slow rotation.

HAW — Very good.

S/C — I wouldn't have believed it, two hours ago.

S/C — We're slowly getting alined through our C.G. so that the Agena is upside down to us, the way we started out.

HAW — We copy that.

S/C — It is rolling very slightly and we can every once in a while see a slight sideways come up to tether and I suspect that it's maybe some fuel in the Agena still sloshing just a little bit, ever so slight.

HAW Okay.

HAW I'm going to send you a TX

S/C Okay.

HAW That's to backup our tape dump we're getting on you. Another thing Pete, we'd like to uplink a TR and also a load for this 45-1. We'd like to check out your computer.

S/C Okay. You want us to go to prelaunch.

HAW Affirmative

S/C Computer is in prelaunch.

HAW Roger.

HAW How about that, we got you in sync again.

S/C Okay.

HAW And here comes your load.

S/C Hell, that's what you were suppose to do, wasn't it?

HAW You guys ought to keep your fingers away from the electronic timer circuit breaker.

S/C Okay sorry about that. I was upside down in a stowage box when that happened.

HAW Okay.

HOU Hawaii Cap Com, Houston Flight.

HAW Go ahead.

HOU Ask him how he feels about trying to spin it up a little faster.

S/C We need to do a little .....

HAW We copy that. Understand you've been trying to spin it up a little fast....

HOU Negative, ask him how he feels about it.

S/C Negative, we were just stabilized. I haven't - since I let go of it back over the states the very first time I haven't touched a thing. I've powered the Gemini down.

HAW Okay, how do you feel about trying to spin her up a little more.

S/C I don't know. What will it prove? We are nice and stable and steady station keeping right now and we do get a little artifical gravity out of it when you stick the camera or something up against the bulkhead. It floats back in the direction of the tether everytime.

HAW Okay.

S/C I think all we'd do is waste fuel and I'm sure that it would damp.

HAW What have you got on prop quantity?

S/C Looks like about 19 percent

HOU Hawaii Cap Com, Houston Flight

HAW Go ahead

HOU Ask him if he feels like he could add about a one second burn to increase the rates.

S/C Another thing is I'm not sure how much learning it's going to be to despin this thing. I'd just as soon not shoot a bucket getting all wound up and not have anything in the hip pocket to unwind.

HAW Okay.

HOU Hawaii from Flight.

HAW Go ahead

HOU We agree to that. Our thinking on the despin is probably just to blow the bar, the docking bar. We don't think there'd be but about a foot or two a second relative velocity between the two. Also ask him how he would feel about adding a one second burn to try to spin it up slightly faster.

HAW Adding one second burn.

HOU How about one foot per second.

HAW One foot per second.

HAW Okay.

HAW 11, Hawaii

S/C Go ahead

HAW Okay they would like to know how you feel about adding about a foot per second burn in there to see if you can spin up any faster.

S/C Okay. We'll give her a go, whatever you say.

HOU Hawaii from Flight

S/C How do they want us to apply the lateral thrust, how many seconds?

HAW Okay, I'll let you know in a minute.

HOU One second.

HAW Okay one second.

HOU Standby Hawaii

HAW Okay.

HOU That will be three seconds Hawaii and also pass on our comment on the descent.

HAW Okay, I missed that Flight.

HOU Our thinking is rather than try to despin it just jettison the tether, we expect about one to two feet per second relative velocity between the two.

HAW Okay.

HAW 11, Hawaii

S/C Go ahead Hawaii

HAW Okay the feeling is as far as stopping the spin they feel you should probably just jettison the bar and that will get it out one or two feet per second separation.

S/C What are you saying?

HAW Rather then just try and stop the spin, just jettison the index bar.

S/C You want us to just jettison the index bar when we are ready to separate.

HAW That is the feeling at Houston, right.

HOU That is affirmative

S/C Okay and you want us to spin up higher is that correct.

HAW Okay with that three second burn is what they were thinking about.

HAW 11, Hawaii

S/C Go ahead

HAW Okay you can go back to nav if you want to.

S/C Okay, I didn't get your last, you want us to spin up higher is that correct.

HAW Roger that. Three second burn

S/C Okay.

HAW Hawaii has LOS

HOU Roger

This is Gemini Control at 51 hours 34 minutes. We'll pick up at California momentarily and continue to listen there.

CAL California is remote.

END OF TAPE

This is Gemini Control at 51 hours 34 minutes. We'll pick up at California momentarily and continue to listen there.

CAL California is remote.

END OF TAPE

HAW Houston Flight, Hawaii.

HOU Go ahead.

HAW Roger, we checked out his load. It looked good.

HOU Roger.

Gemini 11, Houston.

S/C Go ahead.

HOU We got a prephasing maneuver update for you when you are ready to copy.

S/C You guys are full of all good things, man. We are trying to ... the S there. Okay, ready to copy.

HOU Okay. The GETB is 53 24 55 Delta V 9.3 address 25 0, 0, 0 55 address 26 90075, address 27 00000. You will be using your forward firing thrusters. The maneuver will be posigrade and up. You will perform this maneuver in components prior to the maneuver align your platform BEF and get a good solid station keeping position with the Agena. The pitch attitude is included to take advantage of some network tracking. Over.

S/C This is Gemini 11 - 532455, Delta V 9.3 address 25 00055, address 26 I didn't get

S/C 27 is all zips, forward firing thrusters. Posigrade up. Align station keep and do it peachy keen. Give me address 26 again.

HOU Roger. 26 90075.

S/C Roger, understand 90075. Is that affirmative?

HOU Guaymas remote, California local.

GYM Guaymas remote.

CAL California local.

S/C Hello Houston.

HOU Houston. Standing by.

S/C You just ruined a good thing.

HOU What does it look like now, 11?

S/C It is wild. Here we are nice and steady. Yes, we have about a 60-degree attitude changes on evening. The tether went way slack and we banged off the end of it.

HOU Roger, are you getting oscillations in yaw and pitch both?

S/C Yes, we have got oscillations everywhere. How does it look down there? Kind of tame, I'll bet, huh? I suspect that it will damp, but it sure is wild.

HOU Are you all skipping rope up there now?

S/C No, we have the tether tight again, but the attitudes are pretty good on both the Agena and the Gemini.

HOU Roger, everything is okay down here, we are all on the ends of these 3-foot ropes.

S/C Okay. Yes, that is something nobody thought about, but by golly if you spin a rope and pull it tight, it applies tension and that is exactly what has happened to us. Why I couldn't get started right away. Everytime I backed off, the rope would spin faster and get tension in it and then it would jerk the Agena. What time is our next sunset?

HOU Wait one.

GYM Guaymas has LOS.

HOU 11, Houston. About 28 minutes, 52 13.

HOU Texas remote, Guaymas local.

TEX Texas remote.

HOU 11, Houston, did you copy your sunset time. About 28 minutes.

S/C Okay, I tell you what I am doing right now. I am in pulse and I tried to damp the Gemini rates a little bit.

HOU Roger.

11, Houston. We are just about at LOS.

This is Gemini Control 51 hours 46 minutes into the flight. We have had LOS at Texas. The next station to acquire will be the Rose Knot down off the east coast of South America. Acquisition time there 51 hours 59 minutes 9 seconds. This is Gemini Control.

END OF TAPE

We have a bit of interesting information from the Agena Systems Engineer, Mr. Robert Carlton. He calculated during this initial stabilized spin before we speeded up the spin, that the gravity rate in Gemini 11 was .00015. Mr. Carlton says that in this gravity if the pilots let go of their camera, it would fall three inches in 10 seconds. This is Gemini Control.

END OF TAPE

This is Gemini Control, 51 hours, 59 minutes into the flight. We're just about to acquire at the Rose Knot.

RKV It's locked in now. All vehicles go.

HOU Roger. We're reading you very broken.

RKV Roger.

RKV Gemini 11, RKV.

S/C Hello RKV, Gemini 11 here.

RKV Roger. We're showing the encoder as being off at the present.

S/C Rog. It's off.

RKV Okay. You can turn it back on.

S/C Okay.

RKV Roger, we have it.

S/C This last pass I guess we didn't get it back on. I was telling Houston that it got pretty wild there so I just let back the /. pulse and damped the Gemini rates and that killed the whole system down and it's real stable again. I guess we're rotating slightly faster. Can you read out on the Agena and tell us.

RKV Roger. We'll do a good check on it for you shortly.

RKV It sounds like damping the rates on the Agena stabilizes the whole system. Is that correct?

S/C I was damping the rates on the Gemini and it stabilized the whole system.

RKV Oh, roger.

S/C Yet the Gemini always, for some reason, has had wilder attitude/dispersions in the beginning than the Agena did, and the same way this time. The Agena stayed relatively stable but the Gemini seemed to wind up for some reason.

RKV Flight, RKV.

HOU We're copying.

RKV Okay.

RKV Okay, 11. Looking at the rates here on the ground there are two axes on the Agena and we're having a little problem coming up with anything definite for you.

HOU RKV, Flight. Send us an Agena main.

S/C We fired about four seconds aft and four seconds down or so on this last one so we should have added more to it. I can't really tell myself.

RKV Roger.

HOU RKV from Flight. Send us a main Agena.

RKV It's on the line, Flight.

RKV 11, RKV. We're unable to get you anything on these rates from the ground. We'll look at the data post-pass and maybe get some better idea of it.

S/C Okay.

RKV Sorry about that.

HOU RKV, give us another Agena main.

RKV Roger.

RKV 11, RKV. We'll have LOS in about 30 seconds.

S/C Roger, RKV. See you next pass.

RKV Roger.

Gemini Control at 52 hours, 8 minutes. Gemini 11 is out of RKV's range now. Tananarive will pick the spacecraft up at 52 hours, 20 minutes, 43 seconds. This is Gemini Control.

END OF TAPE

Gemini Control 52 hours 20 minutes and we are acquiring at Tananarive and we will listen there.

HOU Gemini 11, Houston.

S/C Hi there Houston, Gemini 11. Go ahead.

HOU Roger, how is it going up there, Pete.

S/C Well, I think we found the secret to success is to damp the Gemini rates and the high rotation that we acquired were very stable and as soon as I took out the large dispersions - the whole combination settled down and we are quite stable again. As a matter of fact we are eating.

HOU Roger, we got some information for you for after tether jettison. Are you ready to copy?

S/C Wait one. What kind of information is it?

HOU Roger. We have got a - two types - got one a procedure to execute the minute you jettison the tether. By that we mean send command 401 which is ACS on to the Agena and as soon as possible after that close to a station keeping position in line BEF.

S/C Okay, that was our plan, Al. We were going to wait until we got into the day side to

S/C pick the Agena up on the horizon. At the same time we were going to ACS on forward until we get the slack off the tether, pull the bar stop the rate.

HOU Roger. We also have another procedure to checkout radar prior to and during Agena SEP. Are you ready to copy? It is about 5 or 6 steps.

S/C Hold just one.

HOU Roger.

S/C Okay, we are ready to copy.

HOU Roger, 1 is, after you complete the platform alignment, put your computer in NAV, turn on the radar and the transponder. Next perform the rerendezvous posigrade SEP burn on schedule.

S/C You are breaking up. Could you start at the beginning again?

HOU Roger. Step 1, after you complete the platform alignment, put your computer to NAV, and turn on the radar and transponder. Did you copy that much?

S/C Yes.

HOU Okay, step 2, perform rerendezvous posigrade SEP burn on schedule.

S/C Roger.

HOU When you are over Hawaii, they will ask you to send spiral select, which is command 270. Then they want you to boresight on the Agena for 2 minutes and send acq lights off, which is command 250 and on which is 251. Did you copy that part?

S/C Roger.

HOU Roger. When that is complete go to the platform mode. When you are over the CSQ they will ask you to send dipole select, which is command 260. Then they want you to boresight on the Agena for one minute and send acq light off and on again.

S/C Roger.

HOU This completes the procedure and you can continue then normal flight plan.

S/C Roger.

HOU Gemini 11, Houston.

S/C Go Houston.

HOU Roger, about a minute from LOS. We have been discussing your procedures for separating from the Agena. And we would like to suggest that you not get too much slack in the tether prior to the time you blow the bar. Over.

S/C My plan is to go 401 just as soon as we have

S/C the least little bit of slack and I am going to jettison at the same time.

HOU Roger, we concur.

S/C Okay. A very fine streak of lightening. Al, on this separation burn, what thrusters did you want to use on this?

HOU Say again, 11.

S/C Which thrusters on the separation burn?

HOU Roger. You will BEF and you will be using your forward firing thrusters.

S/C Roger. BEF forward firing. Thank you.

HOU 11, Houston. I guess you will be doing that in components.

This is Gemini Control 52 hours 29 minutes into the flight. Gemini 11 out of range of Tananarive now. The next station to acquire will be the Coastal Sentry tracking ship. Acquisition there at 52 hours 43 minutes 29 seconds. This is Gemini Control.

END OF TAPE

This is Gemini Control, 52 hours, 43 minutes. We're standing by. The CSQ should acquire Gemini 11 any moment.

CSQ Houston Flight, CSQ Cap Com.

HOU Go ahead.

CSQ Okay, we have TM on both vehicles. Both vehicles are go.

HOU Roger.

CSQ 11, CSQ Cap Com.

S/C Roger, CSQ. Gemini 11 standing by.

CSQ Roger, we have nothing for you. We'll be standing by.

S/C Roger.

S/C CSQ, 11.

CSQ Go 11.

S/C Roger. We've been kicking this station keeping around and the way this thing looks now we both have the decided impression that the non-spun-up station keeping would probably work also if you keep it in electronic. Now we just got past the point of no return there when we couldn't get the tether off that handle and we got a little wrapped around the axel there but I kind of been thinking that that also would work if you give it enough time and you set it up before you release the two vehicles.

CSQ Oh, roger. Copy.

CSQ Did you copy, Flight?

HOU We copy.

CSQ 11, we have about a minute to LOS. Standing by.

S/C Roger. We're just coming out into the sunlight and we're getting ready to stop the station keeping.

CSQ Oh, roger. Copy.

Gemini Control at 52 hours, 52 minutes. Gemini 11 out of range now at the CSQ. We'll come up on Hawaii 53 hours, one minute, 58 seconds. The jettisoning of the tether scheduled between the CSQ and Hawaii. Command Pilot Pete Conrad reporting over the CSQ that he believes that the non-spun-up station keeping will work too if given enough time. Agena Systems has calculated the revolution rate since the crew added that one foot per second to the spin. Now calculates the rate at 55 degrees per minute; the initial rate was 40 degrees per minute. This is Gemini Control at 52 hours, 53 minutes.

END OF TAPE

Gemini Control at 53 hours 1 minute and Hawaii is acquiring Gemini 11. We'll standby through this pass.

HAW Intermittent TM at Hawaii

HAW Gemini 11 Hawaii

S/C This is 11 go ahead.

HAW There I got both of you. I have an update to your prephasing maneuver.

S/C Okay go ahead

HAW Okay. GETB 53:24:56, delta V 8.8, core 25 00 05 1, core 26 90 07 1, core 27 zip, thrusters forward, maneuver is posigrade up.

S/C This is Gemini 11. Copy 53:24:56, delta V 8.8, core 25 00 05 1, 26-90 07 1, 27-zip, forward thrusters, posigrade and up. Over.

HAW That is affirmative.

S/C Roger.

S/C We've got loose of this Agena. It's got a hundred foot tether flying all over the place and we're aligning the platforms, station keeping. We left it with the engine forward and upside down. We'll square it away for you while we're sitting here aligning the platform.

HAW Okay.

HOU Hawaii from Flight.

S/C Don't want you to have to work to hard down there, understand.

HOU Hawaii from Flight

HAW Go ahead Flight

HOU Ask them to leave it alone. We would like to- we kind of wanted it in that position to start with to do this radar test. Leave it alone.

HAW Okay.

Eleven, Hawaii

S/C Go

HAW You've been requested to leave the Agena alone.

S/C Oh, don't think I can handle it huh.

HAW We really think you can handle it all right, it's just that we want to kind of try it out with this radar test we are about to perform.

S/C Roger.

HAW I have one more little update for you.

S/C Go ahead.

HAW Okay, at 53:11:00, C adapter to continuous.

S/C Roger

HOU Hawaii from Flight.

HAW Go ahead

HOU Ask him if he could describe the separation.

HAW Okay

HOU As it occurred.

HAW How about giving us a little run down on that separation, or that jettison of the tether.

S/C Roger. What we did is get it on the horizon, we went ACS on, rate command fired up and forward to stop the translation and I hit the jettison switch and nothing happened. I hit it again and it blew. All switches were set, I don't know why it didn't fire the first time. Everything is stopped real good, the Agena control system stopped it right away and we got squared away without using to much fuel. We are station keeping BEF platform aligning right now.

HAW Okay we copy that.

S/C The tether is just slowly sailing around all the way out to 100 feet one way and then all the way back 100 feet the other way.

HOU Hawaii from Flight.

HAW Go ahead

HOU Did you remind him about this test that the RKV will pick up .....

HAW Roger.

HAW Eleven this is Hawaii. That update that they gave you over Tananarive in regard to this test, they implied that Hawaii was going to tell you to send spiral select, it will be RKV instead.

S/C Roger.

HOU Hawaii from Flight

HAW Go ahead

HOU Would you ask him to put the Agena in SC-1?

HAW Roger.

HOU And verify it.

HAW SC-1

HOU When you verify it.

HAW Say again.

HOU And you verify it on the ground please.

HAW Roger.

HAW Eleven Hawaii

S/C Go

HAW Roger. Do us a favor and put the Agena in SC-1.

S/C Roger.

S/C Your word is my Agena command.

HAW Can't do without you Dick.

S/C How about checking it for me because I didn't get a map on anything. See if that stuff is in it.

HAW Roger. Everything is okay, thank you much.

S/C Okay.

S/C The tether is slowly wrapping itself around it like a Christmas present.

HAW You make it sound so dramatic Pete.

S/C Wait until you see the movies. I think I am just about out of film though. It wrapped itself around one end then it wrapped itself around the other end and then slowly wrapping itself around the big engine there.

HAW Let's hope it doesn't go around the horizon sensor.

S/C No it's clear. They are both clear.

HOU Hawaii from Flight

HAW Go ahead

HOU LOS main on Gemini

HAW Roger. It's on the way.

HAW Hawaii has had LOS all parameters. All systems go at LOS.

Gemini Control at 53 hours 11 minutes. Hawaii has had loss of signal. Gemini 11 now begins a long sweep down over the Pacific towards South America. Will not be in contact with the tracking station until the Rose Knot over on the east coast of South America. Acquisition time there 53 hours 35 minutes

22 seconds. This prephasing maneuver in which the Gemini will separate from the proximity of the Agena is scheduled at 53 hours 24 minutes 56 seconds. That will occur before acquisition at the RKV, an 8.8 foot per second burn. This is Gemini Control, 53 hours 11 minutes into the flight of Gemini 11.

END OF TAPE

This is Gemini Control 53 hours 35 minutes into the flight. Gemini 11 is coming up on the Rose Knot tracking ship now. We will listen through this pass.

S/C Hello, RKV, Gemini 11.

RKV 11, RKV.

S/C Roger. We have your Agena in sight. It is below us a couple of miles. I don't need any range or range rate information at this time. I am standing by to ... with you. (Garbled) diapole, acq lights on and off. Whenever you are ready.

RKV All right, your TM is a little bit shaky yet. Stand by please just about a minute or so.

S/C Okay.

RKV Okay, it is looking real good here on the ground. We are ready for command 270.

S/C Roger, sending 270 mark.

RKV We saw a MAP here on the ground and we also have the event confirmed.

S/C Roger, no MAP light in the spacecraft. Sending 250 and 251 after 2 minutes. Sure are looking pretty moving along that South American

S/C ground.

RKV Be advised we are on schedule for a fuel cell purge during this time, section 2 and then section 1.

S/C Roger. (Garbled)

RKV Okay.

S/C How long do you want me to ...

RKV Oh, I think they want about 2 minutes long, something like this.

S/C Okay, we are go and we are tracking.

RKV You have 1 minutes to ...., 1 to 2 minutes.

S/C Okay, what do you show now for the acq lights, on or off?

RKV We show the acq light is on at the present time.

S/C Okay, sending off mark.

RKV We confirm the acq light did come off.

S/C Roger, sending 251 mark.

RKV And the acq light did come back on.

S/C Okay, we are getting through to it I guess. We have no radar lights and I am not receiving any MAP lights. I have no radar range or range rate. No az or elevation either.

S/C ..watch that elevation and watch that - 1 1/2 degrees pitch in and 1 1/2 degrees yaw

S/C right.

RKV Roger.

S/C My residual readout in address 36, 35 are the same as they were Monday when everything quit.

RKV Okay.

HOU RKV, Houston Flight.

S/C ...- test here. Next we will go over CSQ and start the fuel cell purge, cross ...

HOU RKV, Houston Flight.

RKV Go ahead Flight.

HOU He has stand-off maneuver update?

RKV That is affirm. I will give it to him when he starts the burn.

HOU Roger. Also remind him not to open the D-15 door until after this burn.

(Garbled.- Simultaneously with HOU)

HOU That is affirm. We would like to start..

S/C Right. Hydrogen mark.

RKV Okay, and then I have updates for you. One of them is a stand-off maneuver update when you are ready to copy.

S/C Stand by until I get through with this purge.

HOU I heard you. Delta P on section 2 at point eight.

S/C Section 1. Hydrogen mark

HOU Roger.

Delta P light at the end of the purge at approximately 485.

Roger....

Oxygen on section 2 mark.

Are you ready to copy ... onboard tapes?

RKV That is affirmative.

S/C Go ahead.

RKV Okay, maneuver purpose is stand-off maneuver ATB 54 37 27 Delta V 8.9 burn time 0 plus 11, yaw 18 degrees, pitch 56 up. Address 25 90050, 26 90074, 27 all zeroes. Thrusters aft maneuver posigrade up. And this is a maneuver for the D-3 mode A burn.

S/C Roger, understand. Give me address 26 again please?

RKV Roger, 26 is 90074.

HOU That is retrograde up.

RKV Your stand-off burn 5437278.9 0 plus 11 18 degrees yaw, 56 pitch up 25 90050, 26 90074, zips for 27 aft posigrade up. Sorry about that yaw is 180 and maneuver retrograde up.

S/C Roger. ... 0 and retrograde up.

RKV Roger. And I have a couple of items for flight

RKV plan update here too.

S/C Stand by. I am just about through with oxygen.

RKV Okay.

S/C What do we put yaw in for?

HOU RKV, Flight.

RKV Go Flight.

HOU Tell him we are using this with the aft thrusters. We want him to use this maneuver for the D-3 Mode A calibration burn.

RKV Yes, okay. Using the aft thrusters for the D-3 mode A calibration burn.

HOU RKV, Houston Flight.
Does he understand that? Yaw 180. This is the D-3 mode A calibration burn plus the stand-off maneuver.

RKV 11, RKV, we are going to have LOS soon, I would like to get the rest of this information to you.

S/C Go ahead.

RKV Roger, did you understand that this was a D-3 mode A calibration burn in addition to the stand-off?
11, do you copy?

S/C Roger, copy.

RKV Roger, did you understand that the .. maneuver is also a D-3 mode A.

S/C That is affirmative. That is affirmative.

RKV Okay, update for D-15 start time 54 32 12 leave door closed until immediately after stand-off maneuver. Power down computer after maneuver. The second item is delete the power down at 54 05 00. And move it to 57 30 00. Do you copy?

RKV Flight, we have had LOS. I am sure he got most of that update.

HOU Roger.

END OF TAPE

Gemini Control at 53 hours 56 minutes. Gemini 11 is coming up on Tananarive now. Let's listen.

HOU Gemini 11 Houston.

S/C Go Houston.

HOU Roger. Could you send command 50 which is C and S band beacon off to the Agena? Then command 10 for beacons on.

S/C Send command 050?

HOU That is affirm. 050 and 010.

S/C Okay now we're pointing at SEF.

TAN Houston they've been sent. Are they in?

HOU Roger, we can't tell. You are presently yaw 180 is that correct.

S/C Negative. We're 000 right now.

HOU Roger but on the standoff maneuver yaw would be 180 is that correct.

S/C That is affirmative. We're BEF with aft flying thrusters.

HOU Roger

S/C I thought you said yaw 1.8, that had me buffaloed.

HOU Roger. Were you able to copy the D-15 update?

S/C No would you give it to us please.

HOU Roger. Start time 54:32:12, leave the door closed until immediately after the standoff maneuver. Power down computer after standoff maneuver. Another note, delete the power down at 54:05:00 and power down instead at 57:30:00. This will keep you powered up through the D-15.

S/C Roger, understand. D-15 start time, 54:32:12. Leave the door closed until after the standoff maneuver. Delete the power down in the flight plan and power down after D-15.

HOU That is affirmative.

S/C Roger.

HOU Eleven, Houston. About one minute to LOS.

S/C Roger Houston.

This is Gemini Control, 54 hours 5 minutes into the flight. Gemini 11 has just passed out of range of Tananarive. We have a report on the object sighted by Pete Conrad over Tananarive yesterday on the 18th revolution. It has been identified by NORAD as the Proton III satellite. Since Proton III was more than 450 kilometers from Gemini 11, it is unlikely that any photographs would show more than a point of light. Gemini 11 will be acquired by the CSQ at 54 hours 19 minutes 35 seconds. This is Gemini Control.

END OF TAPE

Gemini Control at 54 hours, 19 minutes into the flight. Gemini 11 coming up within range of the Coastal Sentry in the western Pacific. Let's listen now.

S/C .....the Agena and we have it right out in front of us.

CSQ Oh, roger, will you send command 260?

S/C Roger, 260 on my mark. Mark.

CSQ Okay, we got the event down here.

S/C That's.....whole map, right?

CSQ Okay, boresight for about one minute, right?

S/C Roger. Then send 250, then 251, am I right?

CSQ That's affirmative.

S/C Now it seems to work every time but you'd sure never know it from over here.

CSQ Oh, roger. Okay, I'd like to have you send command 060, that's the timer reset.

S/C Command 060. Did you get it?

CSQ Oh, roger.

CSQ 11, CSQ.

S/C Go.

CSQ Okay, you can vent your H_2 tank vacuum.

S/C Oh, roger. Let's get rid of these commands for the Agena first, shall we?

CSQ Oh, roger. Standing by for 250.

S/C 250 being sent.

CSQ Roger, we got a map and event.

CSQ Roger. Going to 251.

S/C 251 being sent.

CSQ Got a map and event.

S/C Roger, we'll go to event.

S/C CSQ stand by for H_2 tank to vent.

CSQ Oh, roger.

S/C Roger, we ..... the switch.

CSQ Copy.

S/C Bus arm safe.

HOU CSQ from Flight.

CSQ Come in, Flight.

HOU We'd like for you to ask them if they've had any change in range, az..... (interrupted)

S/C Roger, we're going to jack it up to 670 now.

CSQ Say again, 11.

S/C We're going to jack the hydrogen up to 670.

CSQ No, you can delete that at this time. We'll catch it a little bit later.

S/C Roger.

CSQ Go ahead, Flight. I had missed that last one.

HOU Yeh, ask them if they've had any change in range or range rate, az or el.

CSQ I can't read you at all.

HOU Ask the crew if they've had any change in their range or range rate, az or el. Do they have

any joy on the radar.

CSQ I copy.

CSQ 11, CSQ.

S/C Go ahead.

CSQ Do you have any change on your range, range rate, az or el?

S/C No, that's negative. Let me check one more time. We'd like to power down the radar and turn the .... to zero. No, address 36 still reads 120 feet and 35 reads all nines.

CSQ Roger, copy.

S/C Shall we turn our radar off?

CSQ Stand by.

HOU That's affirmative, CSQ.

CSQ Go ahead.

HOU That's affirmative, CSQ.

CSQ Roger.

CSQ Roger, you can go ahead and power down the radar.

S/C Roger.

S/C This is 11. We're going to yaw 180.

CSQ Oh, roger.

CSQ Flight, CSQ. He's yawing around now and both the vehicles are looking good at this time.

HOU Roger.

CSQ 11, we've got about a minute to LOS.

S/C 11, roger. Thank you very much.

CSQ oh, roger.

CSQ Flight, CSQ. We've had LOS all parameters. Both vehicles are go.

HOU Roger, CSQ.

This is Gemini Control, 54 hours, 28 minutes. Hawaii will acquire Gemini 11 at 54 hours, 37 minutes, 44 seconds. Just a few seconds prior to acquisition at Hawaii, the crew is scheduled to perform the stand off maneuver. That's at 54 hours, 37 minutes, 27 seconds. It will be a maneuver 8.9 feet per second to null the rates between the - the velocity between the Agena and Gemini. It will also serve as a calibration burn on the D-3 Mass Determination Experiment. Also, at 54 hours, 32 minutes, 12 seconds, the crew will activate the D-15 experiment. Turn it on to warm it up. This is the Night Image Intensification Experiment, to investigate the use of a special image-orthicon TV system for observing dimly lighted areas. It'll take a look at rivers, coastlines, islands, things like that. We show now an orbit for the Gemini and the Agena of 164 by 156 nautical miles. 164 by 156. This is Gemini Control at 54 hours, 29 minutes into the flight.

END OF TAPE

Gemini Control at 54 hours 37 minutes. We should be acquiring at Hawaii momentarily. We'll standby there.

HOU Hawaii from Flight.

HAW Go ahead Flight

HOU We'd also like for you to check the beacon configuration on the AGena. Can you confirm that the S is on only.

HAW That is affirmative. The S-band is the only one on.

HOU Roger.

HAW Gemini 11 Hawaii.

S/C Wait one.

HAW Roger.

S/C Go ahead Hawaii

HAW Roger. Just letting you know we're standing by.

S/C Roger. We just finished firing the burn and I'm going to activate the door on the TV chute.

HAW Okay.

HAW Gemini 11 Hawaii. We're going to send two commands to the Agena, horizon sensors on and G08 on.

S/C Roger. It's all yours. Do you want me to turn the encoder off.

HAW It looks like its off from the ground.

S/C Rog the radar is off.

HAW Roger.

HOU Hawaii from Flight. Send us a OBC please.

HAW Roger.

HAW Both commands sent and verified.

HOU Roger.

HOU Hawaii from Flight. Send us a Gemini main ASAP.

HAW Roger.

HOU Hawaii from Flight

HAW Go ahead

HOU Ask him to check stack 2 Charlie.

HAW Roger.

Eleven, Hawaii

S/C Go ahead

HAW Roger. Give us a reading on stack 2 Charlie please.

S/C Roger. 2 Charlie is down on the bottom.

Roger. It's 0 F, 0 volts.

HAW Roger. Do you want to turn off that stack: Flight?

S/C (garbled) up

HAW Say again.

Eleven, Hawaii. Might as well turn it off.

S/C Roger going off.

HOU Hawaii from Flight.

HAW Go ahead.

HOU Was the switch on or off?

HAW It was on, he just turned it off.

HOU Roger.

S/C Hawaii, 11.

HAW Go ahead

S/C We planned to stay in horoscan mode until we do D-15.

HAW Okay. Roger. Scan mode.

HOU Can he do it with .....

HAW Say again.

What was that Flight?

HOU That was a wrong loop transmission.

HAW Okay.

HOU Hawaii from Flight.

HAW Go ahead

HOU Would you send us an Agena main.

HAW Roger.

S/C Hawaii, 11

HAW Go ahead.

S/C They must have shorted out because we never saw it go.

HAW Okay.

S/C We're going to go ahead and power down the computer.

HAW Okay.

We confirm that you are powered down.

S/C Wait one. I'm going to prelaunch here.

HAW Flight, Hawaii

HOU Go ahead Hawaii

HAW Roger, it doesn't look like these sections are sharing the load too good.

HOU Roger.

HAW We show main cryo number one is sturdy, number two is 17.

S/C Hello Hawaii. How does the D-15 equipment look?

HAW It looks okay, here. We show your recorder monitor is operating normally.

S/C Say again.

HAW We show recorder monitor operating normally.

S/C Roger.

HOU Hawaii from Flight

HAW Go ahead

HOU LOS main, Gemini.

HAW Roger.

HAW We've had LOS both vehicles.

HOU Roger.

HOU Hawaii from Flight

HAW Go ahead

HOU How about playing back your dump tape. See if you see anything on it.....

END OF TAPE

This is Gemini Control, 54 hours 55 minutes into the flight. We apparently have lost one stack of the fuel cell. Fuel cell consists of six such stacks so this is one sixth of the electrical generating capacity. However, the other five stacks are sharing the load quite successfully and the Flight Director, Clifford Charlesworth says he is not concerned about being able to complete this mission. This is Gemini Control at 54 hours 55 minutes.

END OF TAPE

This is Gemini Control 55 hours 11 minutes into the flight. And the Rose Knot tracking ship is on the verge of acquiring Gemini 11. Let's stand by for this pass.

RKV Gemini 11, RKV.

S/C Go ahead RKV.

RKV All right, we would like to ... spacecraft. We would like to have the number 1 suit fan on and would also like the secondary loop with the A-pump off, D-pump on.

S/C Okay, we have it on number 1 suit only.

RKV Okay, ... B-pump.

S/C B-pump ... computer...

RKV Roger.

S/C We don't need our heater on because...

RKV All right.

S/C (Garbled)

RKV Flight, were you able to copy?

HOU Negative.

RKV Okay, they did have number 1 on all way. We have switched to secondary B on.

HOU RKV, Flight.

RKV Flight RKV.

HOU Send us another Gemini main.

RKV Gemini main. Roger.

Gemini Control Houston. We are continuing to monitor the pass

over the Rose Knot. There is no conversation. Very little conversation understandable.

...approximately 10 seconds and then back off.

RKV Flight, can you read me?

HOU Occasionally. Go ahead.

RKV Roger. Twice so far during this pass we have noted operation, the framing camera XH04.

HOU RKV, Flight.

RKV Go Flight.

HOU Have you confirmed what ACME control mode he is using?

RKV Pulse.

HOU Copy.

RKV 11, RKV. We will LOS in about 30 seconds.

S/C Roger. We are programming the D-15.

RKV Roger. We have noticed operation of the ...

HOU RKV, Flight, Agena main.

RKV Agena main, roger.

Flight, RKV. LOS both vehicles.

HOU Roger.

Gemini Control. We have just had LOS over Rose Knot Victor. Next station to acquire will be Pretoria at 55:28. However, there will be no conversation over this station. This is Gemini Control.

END OF TAPE

Gemini Control Houston at 56 hours 52 minutes into the flight of Gemini 11. The Gemini 11 spacecraft now some 15 miles away from the Agena target vehicle, has just passed beyond South America and is under acquisition by RKV. At this time we will play playback tapes from the Coastal Sentry pass and Hawaii and then pick up the Rose Knot pass. We will play those tapes for you now.

CSQ — AFD, CSQ Cap Com.

HOU — Would you get the crew to tell you what they threw away after the standup EVA today so we can update our weight?

CSQ — Roger. AFD, CSQ.

HOU — Go ahead, CSQ.

CSQ — Okay, there is nodal update you do not want passed until next rev. Is that correct?

HOU — That is correct. You will probably have your hands full getting that block update up.

CSQ — Roger. Got TM solid both vehicles.

HOU — Roger. If you have sufficient time, you can give him the nodal update. Don't worry about it.

CSQ — Roger. Gemini 11, CSQ.

S/C — All right CSQ, 11 here.

CSQ Roger. We would like to get a listing from you as to what you threw away after the standup EVA today.

S/C Roger, we didn't throw anything away except food garbage.

CSQ Roger, copy.

S/C We didn't have enough time to get the rack out of the left-hand footwell. It is still in here.

CSQ Okay, I have got a PLA update for you when you are ready to copy.

S/C Wait one.

CSQ Send Agena load get a compare, send SPC enable.

S/C Roger, copy.

CSQ Roger. Area 38 Delta 59 43 28, 20 plus 32, 25 plus 31, area 39-2 61 20 02, 20 plus 10, 25 plus 38, area 40-2 62 52 55, 20 plus 05, 25 plus 32, area 41-2 64 28 41, 20 plus 01, 25 plus 91, area 42-1 65 56 16, 19 plus 44 25 plus 29, area 43-1 67 31 16, 20 plus 08 25 plus 54, area 44-1 69 06 39, 20 plus 15 26 plus 09, bank angle for all areas is roll left 85, roll right 95, weather in all areas is good and no SEP maneuver. Over.

S/C Roger.

CSQ And I have a nodal update for you.

S/C Ready to copy.

CSQ Roger, node at 57 07 51 rev 36 20.1 degrees east. 0 hours 44 minutes right Ascension. Over.

S/C Copied that.

CSQ That is about all I have for you this pass.

S/C Okay. We have a question for you.

CSQ Go ahead.

S/C With that two Charley shut down, on the next fuel cell purge do we purge in the normal manner?

HOU That is affirmative CSQ.

CSQ That is affirmative 11.

S/C Okay. CSQ -

CSQ Go ahead 11.

S/C We would like to get some idea of what you think is our total propellant aboard right now. In pounds.

CSQ Stand by. Did you copy Houston?

HOU Roger. Stand by one. CSQ, it looks like we have about 70 pounds of fuel and about 115 pounds of oxidizer.

CSQ Three zero pounds of fuel?

HOU Seven zero.

CSQ And ox?

HOU One one five.

CSQ Roger, copy.

11, CSQ.

S/C Go ahead.

CSQ Okay, it looks like you have got about 70 pounds of fuel and 115 pounds of oxidizer.

S/C Thank you.

CSQ About a minute until LOS, 11.

S/C Roger.

Tell them that the...

CSQ Roger, copy.

AFD, CSQ.

HOU Go ahead, CSQ.

CSQ Okay, we have had LOS on all primers, both vehicles are go and that last transmission was the D-15 was progressing normally.

HOU Roger.

HAW Hawaii has TM contact.

HOU Roger, Hawaii.

HAW Seeing S-band track, Hawaii.

HOU Roger Hawaii.

HAW Gemini 11, Hawaii standing by.

S/C Roger, Hawaii.

HAW Flight, Hawaii.

HOU Go ahead Hawaii.

HAW Roger, minus 58 degrees.

HOU Minus 58.

HAW All systems are looking okay on both vehicles.

HOU Roger, Hawaii.

HAW One minute until LOS, standing by.

S/C Roger, we had to complete the other half of D-15.

HAW Okay. See you tomorrow.

S/C Roger roger.

HAW Flight, Hawaii.

HOU Go ahead, Hawaii.

HAW No change on that temperature.

HOU Okay.

HAW LOS on both vehicles. All systems were go at LOS.

HOU Roger, Hawaii.

RKV Gemini 11, RKV, we have nothing for you at this time, we are standing by.

S/C How are you RKV? Can you ask Houston how far behind the Agena we are. We were watching it in the daytime out there and we were curious as to how far away were seeing it.

RKV Stand by on that. I will get you a number. Okay, they will have that information on that subject.

S/C Thank you.

RKV Our acq message is still about 3 seconds difference....

Our acq message is about 3 seconds difference.

HOU RKV Cap Com. They are about 16.6 miles behind him right now.

RKV 16.6 miles.

HOU 16.6.

RKV Roger, thank you. 11, RKV. They say you are about 16.6 miles behind.

S/C Roger. Do you know whether we are opening or closing yet?

RKV Does it appear that they are opening or closing?

HOU Stand by one. They are gradually closing, RKV and they should be about 13.9 miles when they wake up in the morning.

RKV Okay, they advise that you are gradually closing and that when you wake up tomorrow morning, you will be about 13.9 miles behind.

S/C Roger. Doing it.

HOU Gemini 11, Houston. We are standing by.

Gemini 11, Houston. Standing by.

S/C ..Houston we are progressing with the last half of the D-15.

HOU Roger.

S/C ... 100 percent today.

HOU Gemini 11, Houston. Could you give us a PQI readout?

S/C Roger. I am showing about 11, if I squench down there and look at it. If I look at it straight down on parallax, it is showing about 10.

HOU Roger. How is your number 8 thruster been performing.

S/C Exceptionally.

END OF TAPE

Gemini Control Houston, we're joining the Ascension pass now.

Gemini Control Houston, we've just had LOS over Ascension. We're standing by now for our pass over Kano. This is Gemini Control Houston.

We're still standing by for our pass over Kano. This is Gemini Control.

HOU Kano go remote.

KNO Kano's remote and we have contact.

HOU 11, Houston.

S/C Go ahead.

HOU How's your number 8 thruster been performing?

S/C Still off.

HOU Roger.

S/C It's still putting out something but we still have a little roll with it but it's alright. It's not bothering us.

HOU Roger.

S/C We have to wrap up the D-15 at the end of this night pass and I'd say I'd give it a 100 percent for today.

HOU Roger. It looks that way from down here. How's the D-15 been going?

S/C It's performing very, very well.

HOU Good.

S/C How's our fuel remaining look to you?

HOU It hasn't changed since the last report we gave you which was 70 pounds of fuel and a 115 pounds of oxidizer.

S/C Does that look all right? Have we got enough?

HOU Yes, right now you do.

HOU 11, Houston.

S/C Go ahead.

HOU Right now we show you about 16 miles behind the Agena and we expect tomorrow morning when you wake up you'll decrease this distance to something around 14 miles.

S/C Okay. We fouled up in this last daylight pass. We could look at him and we were just getting the sextant on him when we had to go back to D-15.

HOU Roger.

S/C Could you tell me which way it's oriented? Is it perpendicular to the orbital .....

KNO Kano has LOS.

Gemini Control Houston. Kano just had loss of signal. Our next station will be Coastal Sentry at 57 hours, 31 minutes into the flight. However, it is doubtful at this time we'll have conversation with the crew since they will enter their sleep period at that time. This is Gemini Control.

END OF TAPE

Gemini Control Houston, we're standing by now for our pass over the Coastal Sentry. We will receive a crew status report over the Coastal Sentry. 57 hours 31 minutes and we're standing by.

CSQ TM solid mode both vehicles and both vehicles are go.

HOU Roger CSQ.

CSQ Go ahead.

CSQ Gemini 11, CSQ Cap Com.

S/C CSQ 11, go.

CSQ Roger. Have you completed your purge yet?

S/C That is affirmative. Just finished it, bumping up the hydrogen pressure to 670.

CSQ Roger. Would you move your TM switch to the command position please?

S/C CSQ, 11. You are cutting out, say again.

CSQ Would you move your TM switch to the command position?

S/C TM is in command.

CSQ Okay, I am going to send you a TX.

S/C Roger.

CSQ Okay I'm ready for your crew status report.

S/C Roger. The command pilot had Day 4, Meal B, the pilot had Day 4, Meal.....solids were left in both those meals. The pilot had Day 3, Meal A and shared some of that with the

command pilot. The pilot ate most of the solids in the command pilots meals. The watergun .....reads 1427.

CSQ Roger. You cut out there right after 4B, could you repeat after that please?

S/C Roger. Did you say the command pilot ate Day 4, Meal B.

CSQ That is affirmative.

S/C Roger then the pilot ate Day 4 Meal B also. Also Day 3 Meal A and the command pilot shared part of that meal. The pilot also ate the solid foods in the command pilots meal.

CSQ Roger. Copy all of that. Would like to get a radiation reading from you?

S/C (garbled) we've got that stowed in the bottom, at the completion of the high orbit today it read 11.

The highest RADS per hour was 3/10th's during that particular portion.

CSQ Roger understand.

I want to advise you that the Agena is in the orbital plane and with the TDA aft.

S/C Roger, thank you. We've seen it.

HOU CSQ,AFD would you give us a Gemini main.

CSQ Gemini main, roger coming up.

HOU Wait a minute, have you sent one already.

CSQ That's affirmative

HOU Don't send one.

CSQ Do not send one.

HOU Right. We haven't got it yet, let's wait and see if we get the main that you sent.

CSQ AFD, CSQ.

HOU I say don't send one if you have already sent one. We'll wait and see if we get the first one you sent first.

CSQ Roger.

AFD, CSQ

HOU Go ahead.

CSQ Would you believe the GET clock is in sync?

HOU Yes we'd believe it. We sent a reset to it.

CSQ Roger. It reset and it's in sync with GMT.

HOU Very good.

That ought to make things a little easier for the Agena people on their loads.

CSQ That is affirmative.

We can't see much increase in that H_2 tank pressure.

HOU What is it sitting at now?

CSQ On the meter it's 240.

HOU Okay.

CSQ And at 12:18 reading 242.

HOU 242. Would you give us another Gemini main?

CSQ Roger. Coming at you.

S/C CSQ, 11.

CSQ Go ahead 11.

S/C Roger. Will you check with the Flight Surgeon, the command pilot desires one more fox trot before retrofire.

CSQ Roger, standby.

Houston, copy.

HOU No I didn't copy, say again.

CSQ He wants to take another fox trot.

HOU Roger standby.

Surgeon says that is okay.

CSQ Now that was before retrofire.

HOU Standby.

CSQ Surgeon says that is okay.

S/C Thank you, thank you.

The pilot thanks you and the command pilot thanks you.

HOU CSQ, is he going to take that now are prior to retrofire?

CSQ 11, CSQ. You are not going to take that now are you.

S/C Negative.

HOU We copied.

HOU CSQ, does he have 2B pumps on. That is what we want.

CSQ Negative. He's got A and the primary loop. I'll have him turn the B on.

HOU Roger.

CSQ Eleven, CSQ.

S/C Go ahead.

CSQ Okay, do you want to turn your B pump on and .....

S/C Roger. That's on. We're just in the process of powering down now and shifting stowage.

CSQ Roger. We have about a minute to LOS here. This will be our last pass seeing you awake. We'll see you back in Houston.

S/C Yes. Give me a chance - could you find out what time you are going to wake us in the morning. If we don't see you then, thank you very very much. We really enjoyed it.

CSQ Roger.
Houston have you got any idea what time you are going to wake them up in the morning?

HOU Standby one.
About 64:40 CSQ.

CSQ Gemini 11, CSQ.
They say about 64:40.

S/C Roger. See you then.

CSQ Roger, see you back in Houston.

HOU That will be at about Antigua.

CSQ We've had LOS.

Gemini Control Houston, we've just had loss of signal with the Coastal Sentry. Gemini 11 crew advises that they will entering their rest period shortly and we expect no more conversation with the crew this evening. Most of the conversation was with Pilot Dick Gordon. At 57 hours 40 minutes this is Gemini Control.

END OF TAPE

Gemini Control Houston at 58 hours, 7 minutes, 37 seconds into the flight of Gemini 11. The Gemini 11 spacecraft is now on its 36th revolution. It's making its southerly pass over the Pacific. It's out of the range of Canton now and headed toward the Rose Knot Victor off the east coast of South America. Since the crew is sleeping there will be no attempt on the part of Rose Knot to contact the crew;since the crew's entered their rest period, we should say. The spacecraft apogee and perigee profile is presently clocking 164.3 nautical by 154 nautical. Based on preliminary data with no re-rendezvous and you should be advised that no decision has been made at the present time as to whether or not we will re-rendezvous yet. Our retro sequence appears this way for present. This is with no re-rendezvous. Ground elapsed time to time of retro is 70 hours, 41 minutes, 41 seconds; plus time to 400 K is plus 20 minutes, 19 seconds; plus time to begin blackout, 22 minutes, 46 seconds; plus time to end the blackout, 28 minutes; plus time to drogue deploy, 29 minutes, 44 seconds; plus time to main chute deploy, 31 minutes, 18 seconds; plus time to splash in 45-1, 35 minutes, 18 seconds; predicted landing location would be 24 degrees north, - 24 degrees, 16 minutes north - and 70 degrees west. That would be latitude and longitude, in that order. Since the crew is - has now entered their rest period, we'll backtrack for a moment. The mauve shift reported aboard two hours ago.

And earlier this evening, the mauve shift had a touch of red, white and blue in it. At that time Mr. Chris Kraft, John Hodge, and Gene Kranz were all assembled in the Control Center. In the absence of a Flight Director, John Hodge did go around the room with the Flight Controllers for the evaluation of the status of the mission. All systems did look green. E Com advised that the remaining five stacks, these would be the five stacks in the fuel cells, have picked up the load after stack 2C went out earlier in the mission. During the course of the evening we will go through further evaluation as to re-rendezvous prospects for in the morning. At 58 hours, 11 minutes, 15 seconds, this is Gemini Control.

END OF TAPE

Gemini Control - Houston at 59 hours, 7 minutes, 38 seconds into the mission. The Gemini 11 spacecraft is now passing over Coastal Sentry. We will have no contact with the crew on this pass since their rest period is now underway. We've had no indication at the present time that the crew is sleeping yet. There's no doubt, however, that they're relaxing with the bulk of the Gemini 11 mission behind them. Weather advises that favorable weather conditions are expected in the Western Atlantic for the prime landing area for Gemini 11. That would be 45-1. Weather indicates that skies will be partly cloudy. Visibility 10 miles with widely scattered showers in vicinity near daybreak. Winds will be southeast at the magnitude of 10 to 15 knots, and sea state two to four feet. Temperature in the area should range about 82°. Concerning weather which the spacecraft might be flying over -- we have in the Western Pacific two tropical storms. These are Flossie and Grace, and one typhoon. This is Elsie. Typhoon Elsie is located in the South China Sea, south of Hong Kong. Earlier today, Gemini 11 passed over tropical storms Helga and Franchesca in the Eastern North Pacific Ocean. Elsewhere beneath the track of Gemini 11, they have flown over and will continue to fly over a variety of weather systems ranging from extensive cloud areas,over some equatorial ocean area and over Central Africa to nearly clear skies over Northern and

Southern Africa, Arabia and much of Australia. We're standing by now in Mission Control Center still awaiting word on any revisions that might occur to the Flight Plan with regard to a rerendezvous with the Agena Target Vehicle. At 59 hours, 10 minutes, this is Gemini Control.

END OF TAPE

Gemini Control - Houston at 60 hours, 7 minutes into the mission. The Gemini 11 spacecraft has just begun its 38th revolution a short while ago. It's now over the Ascension station or under acquisition by Ascension, who is monitoring the systems aboard the spacecraft. We in contacting the Flight Surgeon, it is still considered that the Gemini 11 crew is in a relaxing mode rather than a sleeping mode at this time. Pulse reading on Command Pilot Pete Conrad is 60 beats per minute. For Dick Gordon, pilot, pulse rate is 69. Respiration rate for Conrad reads 12, and for Gordon 18. A short while ago we had contact with the prime recovery vessel, the USS Guam, in the Atlantic; and because of the hour of the evening, most personnel aboard the Guam, like Gemini 11, have powered down for the night. They report, however, that they are on station and ready for tomorrow's splash. In the Mission Control Center, the time to retro clock continues its downward count. We now read 10 hours, 33 minutes, 11 seconds; and in the Mission Operations Control Room, quiet planning continues as we look forward to the morning's activities here. At 60 hours, 9 minutes into the mission of Gemini 11, this is Gemini Control.

END OF TAPE

Gemini Control - Houston at 61 hours, 7 minutes into the mission. Gemini 11 is now in its 38th revolution. It's making a southerly sweep over the Pacific far to the south of both Canton and Hawaii tracking stations. Next acquisition will be at 61 hours, 45 minutes or some 37 minutes from now; and this will be over Canary. There will be no contact with the crew, of course, as they are still in their rest period and will be for some four hours. The preliminary indications -- preliminary readings tell us that the command pilot, Pete Conrad, is probably now sleeping, with Pilot Dick Gordon nearing a sleep state. We are -- in Mission Control, we're still standing by regarding any decision concerning maneuvering the Gemini toward its Agena Target Vehicle. This maneuver, by the way, if it occurs, would be more aptly described as an Agena fly-by than an attempt to rendezvous. At 61 hours, 9 minutes into the flight of Gemini 11, this is Gemini Control

END OF TAPE

Gemini Control - Houston at 62 hours, 7 minutes into the flight. The Gemini spacecraft is now coming up over India. It's clocking in as apogee and perigee at 164.2 nautical by 154.2 nautical. Gemini 11 will make a long loop around before it's next acquired by a tracking station. Next acquisition will be over Antigua. And this is slightly more than one hour from this time. Acquisition will be at 63 hours, 9 minutes and 32 seconds. We have a firm indication now that both crew members -- both Pete Conrad and Dick Gordon -- are sleeping. And at 62 hours, 8 minutes into the flight of Gemini 11, this is Gemini Control.

END OF TAPE

This is Gemini Control - Houston, 63 hours, 07 minutes into the flight. The crew is asleep. They have been asleep for the past two and a half hours. The sleep period began at an elapsed time of 57 hours, 30 minutes. The surgeon has advised that he doesn't think sleep -- deep sleep really set in until about 60 hours, 40 minutes. The crew will be awakened at -- in about two hours. So they will only have had about four hours sleep for the night. The surgeon says they've had about slightly more than four pounds of water apiece in the past 24 hours, and all in all he's completely satisfied with their physical condition. Earlier in the evening, Pete Conrad checked in to advise that he was taking another fox trot pill or a low motal pill. This is a pill to prevent defecation. The fly by -- the much discussed fly by maneuver is planned after the crew wakes up -- approximately one hour after they wake up. In addition, we will carry out an S-30 experiment using the low-light level TV system onboard -- a system involved for -- installed to carry out the D-15 low light level experiment that -- experiment involving the searching out -- the looking at objects on the water and on land to see how quickly the crew or the system can adapt to a dark condition. As was reported earlier, I believe, stack two Charlie in the fuel cell system is out. It's been out now for several hours. Rapid degradation was noted on the system, and the suspicion is

that the membrane ruptured or something of that order which brought about quick deterioration. In any case, stack two Charlie is out. The other stacks are working very nicely and sharing the load. We've also fairly well pinned down our radar troubles to the Agena transponder. All parties here tentatively agree that the transponder on the radar -- the Agena radar system is inoperative. That's not the radar itself. It's simply the transponder that reflects the signal back to the spacecraft. At 63 hours, 10 minutes into the flight, that's our status.

END OF TAPE

Gemini Control, Houston, 64 hours 7 minutes into the flight. The Gemini is over Australia. It appeared that one of the crewmen, I think Dick Gordon woke up about midway through this pass. However, we are maintaining radio silence, we didn't get a call from them. The plan is to wake them up about 30 minutes from now over the Antigua area. This is Gemini Control, Houston.

END OF TAPE

This is Gemini Control Houston 64 hours 52 minutes into the flight. About ten minutes ago as Gemini 11 came up on the Grand Turk Station, the crew put in the first call to us rather than Houston calling them as has been the practice. Sounding very chipper this morning. A good deal of discussion about this fly-by manuever as it is being called, that will take place a little later in this revolution. They have also been updated on their various experiments, cutoff fuel cutoff points and the like. We have the tape conversation ready and we'll play it for you now.

S/C Hello Houston, Gemini 11 over.

HOU Roger, this is Houston. Good morning.

S/C Morning. You have permission to power up now.

HOU Roger, you're cleared to power up and align the platform.

S/C We said you could power up.

HOU Oh, okay thank you. Hey, I have a whole lot of stuff for you to copy this morning. But before I get in to it, want to make clear that the primary purpose of this intercept manuever that you going to be receiving is to evaluate the ground vectoring capability. Over.

S/C Thank you, Roger.

HOU And also we want you to do S-30 during this night pass prior to the intercept manuever. Over.

HOU	Gemini 11 Houston. Over.
S/C	Go ahead
	LOS Antigua
HOU	Roger. Are you ready to copy. Over.
S/C	Go ahead John.
HOU	Roger. The first thing is the power up and align the platform. Want you to use the computor only for the intercept intiation manuever. That's at 6440.
S/C	It's at 6444 now.
HOU	That's at 65 hours over the Canaries.Over.
S/C	Okay.
HOU	And the fuel cell purge is at the Canaries at 65 hours. Over.
S/C	Roger John, we've already done that.
HOU	Roger. Fine. At 6516 activate the D-15 equipment for S-30. That's sequence 01. over.
S/C	Roger. 6515 sequence 01 on the D15 activated.
HOU	Roger. The S-30 is from 654633 that's sunrise to 662305 sequences 02 through 10. Delete sequence 08. Over.
S/C	Roger. Delete 08. Copy rest.
HOU	Roger, your intercept initiationmanuever will be given to you over the Canaries. And also the time to start your vent timer and eight day clock for a spacecraft TPI time, will be given to you over there.

S/C Okay.

HOU There is a procedure that you can use to get your what would be your fourth mid-course correction with your radar not operating. You can take the GT 10 M=4 back-up charts for radar failure. You enter the backup charts with your vent time

END OF TAPE

HOU You enter the backup charts with your vent time that you started your clock at TPI, and you can calculate your up-down corrections. The Delta V of the fourth mid-course, correction when it's calculated and divided by three will target you to hit. Over.

S/C Roger, John. Was that for the passive rendezvous or the co-eliptic one?

HOU That's with an Omega T of 130 degrees scale down. over.

S/C Okay, Roger, I understand

HOU For your retrofire platform alignment, your propellant cutoff is 2.5 per cent. over.

S/C Roger. 2.5 per cent

HOU Have you got your radar on now, over.

S/C Negative

HOU Roger, if you turn it on and check it, the target is about 22 or 23 miles from you, over.

S/C We have it visually

HOU Roger. And over Carnarvon, we'd like to get an elevation and time to target just before sunset there, so that we can see how nominal you intercept maneuver burn was. Over.

S/C Roger

HOU You'll also be given an S-4 an activation time over Carnarvon.

S/C Roger

HOU Gemini 11, Houston. over.

S/C Go ahead

HOU Roger, we're going to call this an Agena fly-by. over.

S/C Alright

HOU Roger. You have the OAMS propellant cutoff for it. over.

S/C Roger. 2.5

HOU Thats affirmed

HOU Gemini 11, Houston. We have a nodel update for you. over.

S/C Roger, go.

HOU 64 38 42 rev 40, 95.3 degrees west, 0 hours 35 minutes right acension. over.

S/C Roger, copy

HOU Gemini 11, Houston. Do you have any questions about this intercept method? over.

S/C I'm not sure that I understand your vent time, but you will give us a time to start our vent time. Is that correct?

HOU That's affirmative. It will be just exactly - it's a scale down 130 degree tranfer and so if you start your vent timer and enter it with a nominal time, you will do your backup

mid-course calculations occur at the nominal times. over.

S/C Okay, Delta V at transfer is what, nominally zero?

HOU Nominally zero. Yes sir. You understand you'll be right in the middle of S-30 while TPI is going on. over.

S/C That's okay.

HOU You have to understand that the important thing is to get S-30 done and the only mid-course you'll have a chance for, is when you break out into the sunshine there toward the end. It'll be the fourth mid-course of the backup solution. over.

S/C Roger, I understand. The fourth mid-course..

HOU You guys do good work.

S/C Thank you

GTI LOS, Turk

HOU Gemini 11 Houston, over.

S/C Go ahead, Turk

HOU Roger, when you turn your L-band on, could you turn the encoder on, too. over.

S/C Roger

END OF TAPE

HOU Could you turn the encoder on too?

S/C Roger.

Copy, affirm. The encoder is on.

HOU Roger.

Gemini 11, Houston. Turn the encoder off, please.

S/C Roger. The encoder is off.

HOU Encoder back on, 11.

S/C Say again.

HOU Encoder on, Over.

S/C The encoder on.

HOU We are at 30 seconds to LOS at Antigua.

S/C Roger, say is the burn copy with the aft firing thrusters or what?

HOU We got it the forward firing thrusters, that okay?

S/C I guess so.

ANT LOS Antigua.

Gemini Control, Houston here, 65 hours 1 minute into the flight. While that tape was playing, the Canary station has acquired. Here is how that conversation is going.

CYI We have already completed S-30.

HOU Affirmative, and we updated the S-30 from here.

CYI Okay, do you want me to pass them this MI on bringing the main battery on No. 3 up?

HOU Yes.

CYI Okay.

HOU And that's the MI - the conditions for bringing it on.

CYI Do you want me to get Cryo readings at this time?

HOU Okay, let's see if we can fit it in, Canary.

CYI Okay.

HOU At the first part of your pass, we will try to get you this update.

Standby to copy it, I am going to read it to you.

CYI I have the Intercept Maneuver.

HOU Okay that's the first one. We are going to give you another one.

CYI Okay.

HOU Don't read them that one, we won't use that one unless we run out of Com. time here.

CYI We won't use this one that I have.

HOU No, we are going to send you a new one.

CYI Okay.

HOU And have somebody standing by to copy is out there. When I get it, I will read it to you.

CYI We have TM solid on Gemini and Agena.

HOU Roger.

CYI We have C- and S-band track.

HOU Roger.

HOU Canary from Flight, put somebody on to copy this message.

CYI They are on, Flight.

HOU Ready to copy?

CYI Roger.

HOU Purpose the intercept maneuver, GETB 65 + 27 + 21; Burn time 00 + 23, 25 - 900:87, 26 - 00:121 ...

CYI Gemini 11, Canary.

S/C Go ahead, Canary.

HOU I say again on Address 26 - 00:121, Thruster forward, spacecraft TPI - I don't have yet coming to you. Midcourse correction delta V divide by 3. Use M=4 onboard chart.

CYI Could you do this again.

HOU Roger.

What do you want?

CYI Okay, bring on your main battery No. 3....

HOU Say again...

CYI Main Bus volt are less than 22.5.

CYI Okay, start with GETB again, please.

HOU With what.

CYI With GETB.

HOU GETB 65 + 27 + 21.....

END OF TAPE

HOU (cont'd)	TB 65 plus 27 plus 21, Burn time 00 plus 23. address 25 90087 address 26 00121 Thrusters forward spacecraft TPI time
CYI	Say again
HOU	Spacecraft TPI time, 66 plus 06 plus 49 mid-course correction divide by 3, Okay?
CYI	Okay, you want me to read it back.
HOU	Go ahead, say it back to me.
CYI	Say again.
HOU	Why don't you go ahead and read it to the crew and we'll monitor it.
CYI	Roger (clicked) 425 9008 spacecraft TPI at 66 06 49 mid-course correction is divide by 3.
S/C	Roger.
CYI	Okay, do you want to.... (interrupted)
S/C	Okay, now we'll start our vent timers at 66 06 49 counting up at zero.
CYI	That's 66 06 4 niner.
S/C	Roger. That's when we start our vent timer counting up.
CYI	That's right.
HOU	Canary from flight.
CYI	Go ahead flight.
HOU	What GETB did you read them?
CYI	65 27 21
HOU	Roger

CYI And I gave them the burn time as 0023. I don't think you were copying, I punched you off Goddard here.

HOU I'm with you now.

CYI Did you want to give them this Omega T flight?

HOU Say again

CYI Did you want to give them this Omega T? 130 degrees.

HOU No, that was just a note, I think he knows that.

CYI Okay. I think we got it all. We got his cryo reading. TS is in.

HOU Okay.

CYI Okay, 11, this is Canary, you can turn your cryo switch off.

S/C Roger. Off.

CYI Canary to flight.

HOU Go ahead flight

CYI LIke to ask him if he has any questions.

HOU Okay. 11 Canary Do you have any questions on the manuevers.

S/C Negative. Could you give us the time of the next sunset?

CYI Stand by one.

S/C Stand by.

HOU Next sunset is at 65 plus 46 plus 33. Sunrise will be 66 plus 23 plus 05.

CYI	Okay 11, Canary's here.
HOU	Go ahead.
CYI	Okay, your next sunset is at 65 46 33 sunrise 66 23 05. Do you copy?
HOU	Roger.
HOU	Flight plans flight
CYI	Canaries 11
HOU	Go ahead 11
CYI	Roger. Now on the nominal range rate at the fourth correction do you want us to divide that by 3 too? Besides our answer?
HOU	Make it...
CYI	I'm just trying to see what we're going to be closing them at.
HOU	Negative, Canary. Just tell them this, just go into the charts with the nominal numbers as they would be.....

END OF TAPE

HOU Canary, tell them this. Just go into the charts with the nominal numbers as they would be for a regular rendezvous and then just divide the answer by three. Divide the Delta V answer by three.

CYI 11, just go into your charts with the nominal and divide your answer by three.

S/C Roger, I understand that, but what I want to know is, if I'm really under nominal , will my closing rate be one-third of what it is on these charts?

CYI Standby one

HOU Standby, I don't think we know the answer to that. Canaries, we don't know the answer to that

CYI Okay, I'll tell him that.

CYI 11, this is Canary. We don't know for sure the answer on that one.

S/C It should be close to one-third of what it would be nominally on the regular one.

HOU Right. A Gemini LOS main, please, Canary.

CYI LOS at Gemini. We have Agena TM LOS, S-band LOS.

HOU Kano go remote

KNO Kano is remote and we have crew stat.

HOU Gemini 11 Houston at Kano, over.

S/C Okay, Houston

HOU You understand, you don't divide the angle by three, it's just the Delta V that you calculate, over.

S/C What I was kinda interested in John, is if we were completely nominal. What would our closing rate be there?

HOU Rog. I think it would be pretty close to being ... of a normal one divided by three.

S/C Okay, In other words, it's nothing that we can't hack at the window without a radar, I don't want to run into them.

HOU No, that would be pretty slow, like 15 fps or so.

S/C Okay.

HOU At initiation, Gemini 11, you're going to be almost 25 miles behind. 24.9. over.

S/C Okay, I thought we were going to close during the night. What happened?

HOU Haven't determined that yet. over.

S/C Say again?

HOU Roger, we don't know the reason for that. over.

S/C Okay, How about the outer plane. Were we exactly in plane with them?

HOU 1 or 2 feet per second, Pete. It's in the

nodes.

S/C Okay, thank you. John, I'll tell you the reason for being behind, we're probably in a higher orbit than he is. How's that for barnyard.

HOU That's possible alright. Not very so, you're almost level with it.

S/C We saw him this morning. If you guys will send a tanker up, we'll stay up a longer.

HOU Roger, the tank is at Guam. It's on the water. over.

S/C Sorry about that.

CRO Carnarvon from flight.

KNO Kano has LOS

HOU Flight, Carnarvon

END OF TAPE

This is Gemini Control, Houston, 65 hours 22 minutes into the flight. Five minutes from now, the crew will perform the retrograde burn which will start them into the Fly-by Maneuver, as it's being called. They trail the Agena by 24 to 25 miles according to our best and most recent tracking data. The maneuver will require the forward firing thrusters, they are running small end forward. They will fire those forward firing thrusters for 23 seconds. This will carry them on a line-of-flight, which 180 degrees away, should put them 4 miles - 4 nautical miles below the path of the Agena. At that point then, a 130 degrees away from that point which will be the TPI if this was a standard rendezvous. It's not a standard rendezvous in that no additional maneuvering will be done. Only this first burn will be performed, it will have the effect of speeding them up, carrying them inside the path of the Agena, and from the point of Initiation 292 degrees totally, almost 3 - more than three-fourths the way around the world. 75 minutes after the Initial burn, they should pull up within a very few feet of the Agena. They should also have the target in sight during much of this time as they move around, particurly on the night-sides. The burn is to start at 65:27:21, it will be 3 or 4 minutes before Carnarvon acquires on this pass. During the closing period, during the ensuing 75 minutes, the crew will go ahead with that S-30 experiment using their low-light level T.V system onboard to look at the Geggenschein or the luminescent clouds that form on the side

opposite the sun. They seem to follow the sun, whatever the position of the sun, you find the luminescent particles clouds, whatever on the side directly - the side of the earth directly opposite the sun. We have had no contact with the crew since they left the Kano area, we expect none until - for another 6 to 7 minutes until they check in at Carnarvon. This is Gemini Control, Houston.

END OF TAPE

This is Gemini Control, Houston, 65 hours 37 minutes into the flight. Gemini is over Australia. The burn came off as planned on time and it was almost precisely as planned. I think it was off one-tenth of a foot in one of the computer addresses. Conrad said he was observing the Agena at an elevation angle of about 3 degrees above them which would compare very favorably to the plan. In the course of the pass, it became necessary to bring on one of the main batteries. With so much equipment up and running in the spacecraft, it was found that addition power was needed. This had been anticipated about an hour ago by our E Com here, Rod Lowe, and the suggestion was sent out to Carnarvon, Bill Garvin there, suggested to the crew that they bring up one of the main batteries and that immediately solved their power difficulty. They were running a little short. Here is the tape conversation from Carnarvon.

CRO Telemetry solid on Gemini.

TX has been transmitted.

Gemini is GO.

HOU Roger.

CRO Main Bus Volt is at 23.

HOU 23.

CRO Rog.

Gemini 11, Carnarvon.

S/C Go ahead, Carnarvon. This is 11 here.

CRO Roger, at 65 + 38, I will give you a mark to turn the S-4 temp switch off.

S/C Say again.

CRO I said at 65 + 38, I will give you a mark to turn the S-4 temp switch off.

S/C Roger.

CRO How did the burn go?

S/C Just fine. We lapsed at one-tenth and 82, and 88 and 1 were zero.

CRO Roger.

HOU Can't beat that.

S/C We started to drop down on them right away, I could see that. He is about 3 degrees pitched up from us right now.

CRO Roger.

HOU That's about right.

CRO Roger, elevation angle from the spacecraft to Agena at the next sunrise will be 59 degrees.

S/C It's pitch will be 59 degrees is that correct?

CRO Roger.

S/C Thank you.

HOU Dick has a problem with sync on the D-15 have him bring up main battery No. 3.

CRO Roger.

S/C Yes, it might be true, Bill.

CRO Rog.

S/C No. 3 is coming on.

CRO Roger.

S/C That did it. Cleared it up right away.

CRO Roger.

S/C Yes, we need the computer on too for S-30.

CRO Roger.

S/C We'll run this way.

HOU Great.

CRO Standby for backup at 24.

S/C Carnarvon, 11.

CRO Go ahead.

S/C How is the Agena oriented now?

HOU TDA north, lights on.

CRO -90.

S/C Roger, -90.

CRO Computer mark at 65 + 38.

S/C Roger.

CRO Mark.

S/C S-4 is off.

CRO Roger.

S/C Carnarvon, 11. Would you ask them what they want us to do about this OAMS Reserve tank here, just wait till our OAMS Reserve starts to be needed.

CRO Okay.

Did you copy, Flight?

HOU Carnarvon, we indicate fuel short if anything.

Okay.

CRO I don't copy you.

HOU And he will probably not get to the AUX tanks.

CRO Say again.

HOU He is fuel critical and he will probably not get to the auxiliary tank.

CRO Okay.

11, Carnarvon.

S/C Go ahead.

CRO Okay, you are fuel critical, you probably will not get to the reserve tank.

S/C I am with you.

CRO And we are one minute to LOS.

S/C Roger, see you next round.

CRO Roger.

Carnarvon has LOS.

HOU Roger, Carnarvon.

END OF TAPE

This if Gemini Control Houston 66 hours 22 minutes into the mission. Texas acquired (bet you'll be able to see them okay) about 5 minutes ago. And apparently the crew reports the S-30 was completed on the night side and they are also elated, as people are here on the ground, the progress of this fly-by manuever. The manuever is of prime interest to the Flight Dynamics Branch which has handled all the computation. And it is turning out to be one of the more interesting aspects of this very interesting mission. In his report "Pete" Conrad again notes that the greasiness on his window. He says it's so bad he's having difficulty seeing through his reticle because there is a smudge of grease right in the path of the reticle. Here's the Gemini 11 report on the pass which is still in progress , the spacecraft now off the east coast of Florida.

	Texas go remote
	Texas remote
HOU	Gemini 11, Houston in Texas. Over.
S/C	Hello Houston, Gemini 11 here.
HOU	Roger, we show you at sunset you should have a..at sunrise, you should have a pitch angle of about 60 degrees, over.
S/C	Roger, we still see 'em every once in a while everythin is going real good, we're just finishing up S-30.
HOU	Roger.
S/C	We show about 9 per cent PQI.
HOU	Roger.

HOU The Woomer tracking data if you haven't done anything indicates that you be out in front of him in....just where you want to be. over.

S/C Roger.

HOU We're going to get some tracking over the states and try to give you an estimate as to what your fourth mid-course should be, what we think it should be, over.

S/C Okay. And if you've got one for us, you want want us to burn yours?

HOU If you get one it'll be in the ball park I'm sure.

S/C Okay.

HOU As soon as you finish S-30 you can turn that main battery off. Over.

S/C Yeah, we just turned it off powered the TV down.

HOU Roger. Is your H_2 in the auto position? Over. H_2 heater?

S/C Negative, it's been off.

HOU Roger. Could you go to auto, please. 11, this is Houston, say again, could you select auto on your H_2 heater over?

S/C Yes, we did. Roger.

HOU Roger. Gemini 11, Houston, have you made any corrections yet? Over.

S/C Negative.

HOU Roger.

S/C No corrections. How's it look?

HOU Looks good right now.

S/C I have a problem here John that I ...my window is so greasy that I can't see him through the reticle. So I have to use the reticle with my left eye and track him with my right eye.

HOU Roger.

S/C Grease spot's right in front of reticle.

HOU Bet you'll be able to see him alright at sunrise. Grease or no grease.

S/C Okay.

HOU He's at 55.2 degrees.
Roger.

S/C correction.5.8

S/C He's coming out of the sunlight right now.

HOU Houston 11

HOU Go,over.

S/C Hey John, all I'll be able to get is enough down direction for this thing.

HOU Roger, we'll try to calculate your fore aft down here, over.

S/C Okay.
Houston 11, how do you hear VOX.

HOU Read you loud and clear.
Okay, see if we could use it a little bit.

T minutes

T minutes, he's GET

Can't go over the 64.3 degrees.

HOU Roger.

S/C Boy is he bright.

END OF TAPE

HOU Gemini 11 Houston, over

S/C Go ahead, John

HOU Roger, we show a 6 forward, 2.4 right and nothing up-down, over.

S/C Understand, 6 forward, 2.4 right and zero up- and down. Is that correct?

HOU Roger. And that time of application is 66 30 36, over. I say again, 66 hours + 30 + 36

S/C Roger. 66 30 36

GTI LOS Turk

HOU I think so too. You better look at it out there.

ANT LOS Antigua

END OF TAPE

This is Gemini Control Houston, 66 hours 37 minutes into the flight. We are over Canaries and while the crew hasn't told us what their range is, they are apparently quite close. This fly-by maneuver appears to have worked out extremely well. The crew did 16 fps forward burn a mid-course somewhere over the Atlantic, a corrective maneuver and apparently are coming out right - quite close to the vehicle. Dick Gordon has remarked three or four times about the position in which they found the tether He described it as straight up, apparently fully extended and he indicates that the tether has independently gone on to prove out the gravity gradiant. Here is the tape conversation as it ensues over the Canary Islands.

CYI Both vehicles are go

S/C In a straight up over top of it. Gravity....
We'll have to double back on it.

CYI Okay. 6 percent

CYI Gemini 11, Canary

S/C hello Canary, 11 here

CYI Okay, we show both vehicles as go. We're standing by.

HOU Canary, has he maneuvered?

CYI We have intermittent TM at this time.

HOU Ask him if he made a mid-course.

CYI 11, Canaries. Have you made your mid-course?

S/C That's affirm

S/C That's affirmative and we've had zero up and down for correction and we added 6 feet forward.

HOU Roger.

S/C Close enought to see that the tether has stopped moving and is standing straight up like it is in the gravity gradiant.

CYI Rog. And look at him in that kind of lighting Put your eye out. Do you copy flight?

HOU Affirmative. Send us some OBC's so we can read that elevation angle.

CYI Roger.

S/C Keep the shape of the thing.. Oh, these sextants

HOU Over. That's tremendous you guys, that's a wonderful fly-by.

CYI Flight, do you want us to get a crew status report?

S/C Say again

CYI Do you want us to get a crew status report?

S/C No. No. That tether is straight up and down.

CYI Roger. We copy all of that, 11.

S/c 42, 42 degrees. 3,000 feet. It was 3,000 feet when I told you....

CYI Canaries from flight

S/C Go ahead, flight

CYI Why don't you turn the Agena recorder on and we'll dump it later.

S/C Have them turn it on?

END OF TAPE

HOU And we will dump it later.

CYI Have them turn it on?

HOU No, you turn it on.

CYI Okay, mark 2,000 feet.

11, Canary. 11, Canaries.

S/C Go ahead.

CYI Could you turn your encoder off so we can turn your Agena recorder on for you?

Okay, you can turn your encoder back on.

11, Canaries.

S/C Roger, we want.....

CYI Who is doing all that braking?

Okay, he's got his encoder back on.

HOU Roger. Send us a couple of Mains so we can look at the fuel.

CYI On the Gemini?

HOU Yes.

CYI On their way. Mark 1,000 feet, you did it in 55 seconds. So that's 50 feet a second.

That's the best I can give you. That's all I can give you now.

S/C Canaries.

CYI Go ahead 11, this is Canaries.

S/C Are you reading all that?

CYI Well, your intermittent on your VOX.

S/C I said we're here, we're home free and we're just sliding in there very pushy now.

CYI Go, Flight.

CYI Canaries here, Go.

HOU Okay, Canaries. Standby I want to read the crew.

CYI Go ahead your reporting at 5 percent remaining.

HOU Wonderful.

CYI "They are home free", he says.

HOU Wonderful.

CYI Everybody at Houston is real happy with that 11.

HOU Tell them we thought that was beautiful.

S/C You aren't any happier than I am or Dick.

HOU Beautiful.

S/C Why don't you keep repeating "beautiful."

HOU Five percent on the gage didn't he, Canaries?

CYI Say again, Flight.

HOU PQI, five percent left?

CYI That's right, he said he had five percent remaining.

11, your just about to our LOS and the reading is looking real good and we copy your PQI at five percent remaining.

S/C We're still braking a little bit but we're here about 50 feet out.

CYI Roger, understand, about 50 feet out.

HOU Tell him we think that was a great fly-by.

CYI Houston would like to let you know that we think that was a great fly-by.

HOU Gemini 11, Houston.

CYI We have LOS all parameters.

Kano go remote.

KAN Kano is remote and we have....

S/C We are station keeping, what do you want us to do with the gas that we have got left.

HOU Want to do another one?

S/C What, with 3 percent.

HOU Gemini 11, Houston, over.

S/C Go ahead.

HOU We are going to give you a mark to activate the blood package at 66:43.

S/C Okay.

HOU And then all you have to do is a 3 foot per second retrograde burn anytime before Carnarvon which we're showing as coming up at 67:10 about..

S/C Okay.

HOU Or go C-reentry continuous and C- adapter command.

S/C 66:43:00, John?

HOU Affirmative. 25 seconds.

5, 4, 3, 2, 1 mark - 66:43.

S/C Houston, 11.

HOU This is Houston, Go.

S/C The only thing we haven't found is the docking bar.

HOU That's great. Can you go C-reentry to continuous and C-adapter to command. Over.

S/C Roger.

HOU Roger and we will require a crew status report anytime after you eat today, over.

S/C Roger, Houston.

HOU Gemini 11, Houston, over.

S/C Go ahead.

HOU Roger, we've got a request here to repeat any part of the sequences of S-30 performed on the previous night at your discretion.

END OF TAPE

HOU The sequences of S-30, performed on the previous night, at your discretion to determine the effect, if any, of the close proximaty thruster burns on optical surface of the S-15 equipment.

S/C Okay, we'll look at it when we go into the dark side, here.

HOU Roger, and then record the sequences performed And the time for that, would be sequence 01 at 66 55, and then the rest of it at 67 hours and 25 minutes, which is about sunset. Gemini 11 Houston, 30 seconds til LOS

S/C Roger, do you want us to perform the three foot retrograde any time before Canarvon, Is that right?

HOU Right, which is about 67 hours and 10 minutes. That was great Pete.

S/C Say again.

HOU That was tremendous

S/C Thank you. You should have worked with Richard.

HOU Roger. He's a good man to have.

KNO Kano has LOS

This is Gemini Control Houston, 66 hours 48 minutes into the flight. I'm not sure that the elation, which exists in this control center is apparent on the tapes. It needs to be underscored. The rendezvous was - well it was called a fly-by

It was certainly a rendezvous, an M=1 type rendezvous. It was carried off with apparently a fuel propellant useage of about 45 pound, which would be certainly a record. Furthermore, it was done with only one single corrective maneuver and some small amount of breaking to maintain a station keeping position of about 40 feet away from the Agena. The - probably the happiest people, of course, were the flight dynamic section, which set up the planning on it, also Glenn Lenney, himself, a former flight dynamic officer, who is the flight director now on this shift and Cliff Charlesworth, also the prime flight director on this mission, were present here along with Cris Kraft and it provoked one of the happier moments in the entire mission. The success of fly-by was remarked on several times by John Young, congratulations being passed along from Canaries and Kano. This is Gemini Control Houston

END OF TAPE

Gemini Control - Houston, 67 hours, 07 minutes into the flight. Canarvon has acquired, and Bill Garvin is putting in his first call to them. On this pass -- upcoming pass across the States, the spacecraft should be visible from Houston between roughly the hours of 4:30 AM and 4:40 AM Central Standard Time. If Houstonians look to the southern sky at precisely 4:36 AM, the spacecraft range from downtown Houston will be 445 nautical miles. It'll be 17 degrees above the southern horizon -- 17 degrees. It also will make a pass across this area at 6:08 -- at 6:08, beginning about 6:08 Central Standard Time. The elevation at that point would be 15 degrees again in the southern sky. It'll rise to 31 degrees elevation at 6:10. At 6:11, it should be 53 degrees, but the sunlight may bar the viewing. Probably the best viewing will be at 4:36. Pete Conrad has advised he has completed his separation burn from the Agena -- three foot per second retrograde burn to put him a reasonable distance away from the Agena, setting up for retrofire. Retrofire to occur 3 hours and 32 minutes from now. Here is the conversation from Canarvon as it's progressing.

S/C Go ahead, Canarvon.

CRO Roger. How'd your sep burn go?

S/C Just fine.

CRO What time did you burn?

S/C Sorry about that. I didn't write that data. Did you want that?

CRO That's alright.

S/C Be advised that we've programmed module four and verified it.

CRO Okay.

S/C Canarvon. We are currently restowing aligning FTS band. We'll take a last look at the D-15 and then go BEF for final alignment.

CRO Roger. Copy. Flight, Canarvon.

HOU FLT Go ahead.

CRO Did you copy about that time of the burn?

HOU FLT Affirmative. Canarvon, Flight.

CRO Go ahead.

HOU FLT Would you get an estimate from the crew what time they put battery three back on.

CRO Okay. 11, Canarvon.

S/C Go ahead.

CRO What period did you bring back up battery three?

S/C We brought the batteries back up when they asked us to look at it. We were station keeping on the Agena.

CRO Okay. copy

S/C Carnarvon, 11

CRO Go ahead

S/C The best I can determine, we're stirred in the configuration as publised for reentry.

CRO Roger, copy

HOU Carnarvon can we have another look at Gemini main?

CRO Roger.

END OF TAPE

S/C Bill we have two more passes with you , don't we?

CRO That's affirm. 43 and 44 and then the long ride.

S/C Okay. Trying to figure out what we're hurrying for, thought we were on our next to last pass. Module 4 is loaded and verified and (garbled) prelaunch.

CRO Copy.

HOU Carnarvon could you ask them if they have turned on their D15 equipment to warm it up yet?

CRO Say again.

HOU Could you ask them if they have turned on their D15 equipment to warm it up?

CRO Have you turned D15 on yet to warm it up?

S/C That's negative, but we can though. We're getting a night horizon out here shortly.

CRO Roger

HOU Copy

CRO AFD Carnarvon

HOU Go ahead

CRO Our computor has folded.

HOU Roger

CRO Have you got enough summarage?

HOU Stand by.

We'd like another main at LOS

CRO It will have to be a manual.

HOU Roger.

CRO Why don't you let us go ahead and reload it and then we'll play the tape back and cut you one. We're reloading right now.

HOU Roger.

We're one minute to LOS, 11

S/C Roger. We'll see you next pass.

Roger.

S/C Flight Carnarvon

CRO Roger

S/C We completed the Agena tape dump 5 minutes.

CRO Roger.

Gemini, is the tape recorder off?

S/C That's affirmative.

CRO Thank you.

Carnarvon has LOS on Gemini

HOU Roger

LOS on Agena

CRO We'll get those summaries to you just as soon as we can.

HOU Roger.

Houston here. 67 hours 18 minutes into the flight. We have lost signal from Carnarvon. The weather in the recovery zone this morning is predicted as partly cloudy skies, widely scattered showers. Winds are forecast to be southeasterly 10 to fifteen knots, 2 to 4 foot seas. Referring to our earlier advisary on the sighting from Houston at 4:36, the range again at 4:36 a.m.

will be 445 nautical miles. The azimuth will be 147 degrees , that is if you look true south, the spacecraft would be in the southeastern skies just a little perhaps 30 degrees off true south. The elevation 17 degrees above the horizon. This is Gemini control Houston.

END OF TAPE

GEMINI 11 MISSION COMMENTARY 9/15/66 4:20 AM TAPE 238 PAGE 1

This is Gemini Control, 67 hours 37 minutes into the flight. Gemini 11 just passed out of range of the Canton Island station. We will play the tape of that pass for you now.

HOU Gemini 11, Houston at Canton, Over.

S/C Hello, Houston. Gemini 11 standing by.

HOU Roger. A target of opportunity for S-30 is the Agena, over.

S/C Say again.

HOU Roger, for S-30, recommended target of opportunity is the Agena, over.

S/C Roger. Where is he?

Hello Houston, Gemini 11.

HOU He should be about 4 miles ahead of you there Pete.

S/C Roger. We don't have enough gas to do a ..... but we can do it fuster.

HOU Roger, say again your last, over.

S/C Roger, I say again we have enough fuel to do it fuster but not ....

HOU Roger.

Gemini 11, Houston. The spacecraft is 4 miles ahead of and below the Agena, over.

S/C Roger. We're aligning BEF, do you have the ACQ lights on.

HOU Roger, the ACQ lights are on, over.

Gemini 11, Houston. Over.

S/C Go ahead

HOU Could you put your antenna Select to REENTRY.

Over.

S/C Say again, John.

HOU Your antenna Select to REENTRY now, over.

S/C Roger, antenna Select REENTRY.

It has been.

HOU Roger.

CTN Canton has LOS.

END OF TAPE

This is Gemini Control, 67 hours 45 minutes into the flight. Guaymas about to acquire Gemini 11. We'll stand by live on this Stateside pass.

HOU Gemini 11 Houston at Guaymas, over.

GYM Go ahead.

HOU Roger. We're going to activate the - or de-activate the neurospora and blood package at 67 hours and 53 minutes. over.

GYM Roger. We'll be standing by for your call.

HOU Roger. That's S-4 mode C

GYM Roger.

S/C Houston, 11

HOU Go ahead. over. This is Houston, go ahead.

S/C You want us to de-activate both packages. Is that correct?

HOU Roger. Both packages

S/C Okay, we'll stand by for your call.

HOU Gemini 11 Houston, over

S/C Go ahead

HOU Roger, request a water gun count for a weight computations, over.

S/C Roger, coming up. 15 67

HOU Roger.

S/C Houston, 11

HOU Go ahead, over

S/C We've completed a flight plan, we're all done.

We're ready to come home one rev early.

HOU That's no fair.

S/C Hey, John, change that water gun count. We've been drinking. 15 74

HOU Roger.

S/C Looks fine.

HOU Have you had a chance to eat yet? over.

S/C Say again.

HOU Did you get a chance to eat yet? over.

S/C No, just that this morning. I don't think we will.

HOU Roger.

Texas go remote. Guaymas local

TEX Texas remote

GYM Guaymas local

END OF TAPE

HOU Gemini 11 Houston. Have you got a sleep report for us, over.

S/C We passed that out to Carnarvon but we'll tell you, we slept about 4 hours last night very well.

HOU Roger.
Twenty seconds to de-activation.

S/C Roger
4 3 2 1 de-activate

S/C Roger, both of them are done.
Houston, 11

HOU Go ahead over.

S/C Tally HO on Agena he's about 12 o'clock up 30 degrees. Say, I'd like to pass one other thing to you. I had a decided an impression on the rendezvous that I wasn't getting all the thrust I should get out of my down firing thruster.

HOU Roger, #16 over.

S/C Yeah, down firing thruster.

HOU Roger. Was it just like it was in the first rendezvous? Over.

S/C Was that the one I complained about before?

HOU Believe so.

S/C Say again.

HOU That's affirmative.

S/C Yeah, I couldn't remember whether it was a lateral one that I complained about before or a down firing GET. I just don't think I was getting all out of it that I should have been getting.

HOU Roger.

S/C I guess it will show up on the records, though Huh?

HOU Roger. It was the down firing one before. Over.

S/C Yeah, well the same problem this time.

HOU Gemini 11 Houston, your cabin pressure is down to about 495 below the regulation pressure we've been seeing on it. Over.

S/C Okay, you say it's point 495?

HOU four point nine five

S/C nine five....I can't tell any difference on our gauge but we'll watch it.

HOU Roger.

END OF TAPE

HOU Gemini 11, Houston. What was your position relative to the target when you started braking. Over.

S/C You mean on the ball.

HOU Affirmative.

S/C Just slightly out in front of him about 95, 100, 105, 110 degrees.

HOU That's about perfect, isn't it?

S/C Yes, it's worked out just like we tried it a couple of times.

HOU That's outstanding.

S/C (voice breaks)..coming up about the same place.

HOU Can't beat that.

S/C After the last correction, really he was inertial almost all the way in. I had to change the needles once because Dick dumped the computer on me but otherwise, I wouldn't have had to do that.

HOU Roger.

S/C I didn't want him to have too much help.

HOU Roger. How does that Navy man handle that sextant?

S/C Well, like a dream, John.

HOU Roger. I heard that R-dot.

S/C What did you think about it?

HOU 55 feet a second?

ATI AOS Turk.

HOU Bermuda, go remote.

BDA Bermuda remote.

END OF TAPE

HOU Gemini 11, Houston. One minutes and 30 seconds at Bermuda.

Conrad Roger, Houston. We'll see you next pass.

This is Gemini Control at 68 hours, 4 minutes. Gemini 11 out over the middle of the Atlantic, out of range of Bermuda now. Canary Islands will acquire in about two minutes, we'll come back then.

END OF TAPE

This is Gemini Control, 68 hours 6 minutes into the flight. We'll stand by now while Gemini 11 passes through the Canary Islands, then Kano, Nigeria ranges.

CYI TM solid Gemini, TM solid Agena.

HOU Roger, Canary

CYI Both vehicles go.

HOU Rog.

CYI S-band track Agena. We have C-band track Gemini.

HOU Roger.

CYI Gemini 11, Canaries

S/C Go Canaries, 11 here.

CYI Okay, we show you go here on the ground. We'll have Agena AFD when you're ready to copy.

S/C Roger

CYI Okay, area 45-1, 70 41 38, 20+10, 26+36, area 46-4, 73 33 03, 20+09, 26+02. area 47-4, 75 08 27, 20+05, 26+11. area 48-4, 76 44 08, 20+22 26+29, Bank angles, all areas , roll left 85, roll right 95, weather good in all areas. No set maneuver required. Did you copy?

S/C Roger, copied everything but the 45-1.

CYI 45-1 , 70 41 38, 20+10, 26+36. Did you copy?

S/C That's affirmed, Canaries. Thank you

CYI Okay, that's all we have for you this time, we'll see you next time around.

END OF TAPE

HOU Canaries from Flight.

CYI Flight, Canaries.

HOU LOS alpha Gemini.

CYI Roger.

Gemini TM seems to be braking up pretty bad.

We have TM LOS Gemini.

We have LOS at Canaries.

HOU Roger.

Kano go remote.

KNO Kano is remote.

We have contact.

HOU Gemini 11, Houston at Kano. Standing by.

END OF TAPE

....trol 68 hours 43 minutes into the flight. There was no conversation during the Tananarive pass this last time. Gemini 11 is coming up from Carnarvon. We'll stand by there.

S/C Okay, we're standing by to copy.

CRO Your pitch gimble at 400 K will be 92 The horizon at retro will be dark and light at 400 K. Begin black out 22 plus 40. End black out at 27 plus 56. REP of drogue 29 plus 41; REP of main 31 plus 15. Your retro pitch angle is minus 20 degrees.

S/C Copy.

CRO And we don't have anything else for you, if you need anything give me a shout.

S/C Roger. Do you know what we..what time you'll be giving me over Carnarvon for my vent timer countdown?

CRO We'll update you over the states on that.

S/C Thank you.

CRO Flight Carnarvon

HOU Go ahead Carnarvon

CRO Have you got a time that'll we'll set up the vent timer next time around.

HOU Stand by

One minute to LOS

S/C Roger, see you next trip.

CRO Roger.

END OF TAPE

Gemini Control, 69 hours 3 minutes. Gemini 11 is over Canton. The Cap Com, John Young, just queried - you can hear, they are talking now.

HOU Roger.

Gemini Control at 69 hours and 4 minutes. At the start of this Canton pass, John Young ask the crew if they had noticed any degrading of thruster no. 6, that's a pitch up thruster. The ground here suspects that it might be a little bit soft but the answer from the Gemini 11 crew was that they had not noticed anything. We will continue to stand by during this Canton pass.

HOU Gemini 11, Houston, 1 minute and 30 seconds to LOS at Canton.

S/C Gemini 11, Say again.

HOU Say again, 11. Over.

Houston, this is 11 - 11, Houston, say again, over. Gemini 11, Houston. Say again, over.

S/C Gemini 11, say again.

HOU That's what I thought you said.

S/C We can't read you, John. Say again.

HOU Roger, we'll get you over the States. Over.

HAW Hawaii has Agena contact.

HOU Roger, Hawaii.

HAW Hawaii standing by.

S/C Roger, Hawaii. We're in the process of checking our RCS.

HAW Roger.

END OF TAPE

This is Gemini Control at 69 hours 19 minutes. California about to acquire Gemini 11. We'll listen live to this stateside pass.

CAL California, over.

HOU Gemini 11 Houston at California, over. Gemini 11 Houston at California, over. Gemini 11 Houston, over. Gemini 11 Houston.

S/C Houston, 11

HOU Roger, we have some information for your TR-115 pre-retro check list, over.

S/C Roger, go ahead.

HOU Roger, GETRC 70+41+36, RET 400K 20+12, RETRB 26+39, bank left 50, bank right 60. Your begin blackout in blackout drogue and main times did not change from Carnarvon. Nominal IVI's 225 aft, 115 down. Say again, 305 aft, over.

S/C Roger

HOU 115 down. The initial deflection bank angle at zero 225 up. At 55 degrees, 72 up, at 90 degrees, 70 down. Your 400K pitch angle did not change and your pitch angle at retrofire minus 20 degrees.

S/C Roger, I have all that, John.

HOU Roger, you'll have a dark retrofire at retro-

fire Nunki and Sagittarius, will be 20 degrees above the retrofire point. Above the horizon, over.

S/C Roger.

HOU Right on the bore side.

S/C Roger.

Guaymas go remote, California local

GYM Guaymas remote

CAL California local

HOU You're MDIU quantities are as follows, address 03 65 951, that was address 03, over.

S/C Roger, 03

HOU 04, 30 327; 05, 05 792; 66 340 99, 07 66 238, 08 40 331, 09 15 548, 10 024 16, 11 290 00,

S/C Gemini 11, Roger. copy

HOU The weather in the area 45-1 is 2,000 scattered and 10 miles, wind is 140 at 15 knots, wave heighth 2 to 4 feet, the altimeter setting 30 00, the recovery call signs, the ship is a Guam and there are two aircrafts in the area, Air-boss, callside Air-boss, over.

S/C Copy

Texas go remote, Guaymas local

TEX Texas remote

GYM Guaymas is local

HOU This is Gemini 11 Houston. If you get a chance can you turn your main batteries on and check them and give us a voltage readout, over.

S/C Do you want to bring them on the line?

HOU That's affirmative, over.

S/C Roger, they all check out at about 22 volts.

HOU Roger.

S/C Say, I got another friend down here besides the Agena flying to my left, and apparently closer.

HOU Houston, Roger. Gemini 11 Houston. We will send you that load now so you can check your MDIU quantities and then the TR will come up to you.

S/C Roger. ECS system

HOU Gemini 11, Houston. The set-up time on your vent time right at Carnarvon, is 18 minutes, over.

S/C Roger 18 minutes

S/C Houston, 11. MDIU quantities all check out.

HOU Houston, Roger. Load's confirmed from down here, too.

S/C Roger, Pre-retro check has just been completed.

HOU Roger.

S/C We rang out the RCS and all thruster, both rings,

look good.

HOU Roger. You're TR is coming up now.

S/C Roger, we got it.

END OF TAPE

HOU Gemini 11 Houston, what's the position of other friend you've got up there?

S/C I'm afraid that I had a particle flying wing on me there but it was much bigger than the rest of them.

HOU Roger.

S/C He was just looking for something else to rendezvous on.

HOU Tell him to try the Guam.

S/C Okay. Have you got a Charlie time and a Fox Carpet (?)

HOU Roger. Can you change your quantity switch to O_2 please sir?

S/C Roger. Gemini 11 has gone quantity O_2.

HOU Gemini 11 Houston Over.

S/C Go ahead

HOU That /wrap time is 35 minutes and 15 seconds after retro. Over.

S/C Roger. 35 15.

END OF TAPE

HOU Gemini 11, Houston. Do you still have your Mains on? Over.

S/C Negative, we turned them off.

HOU Could you turn them back on, please sir?

S/C Okay, do you want us to leave them on?

HOU That's affirmative.

S/C Okay.

This is Gemini Control, 69 hours 40 minutes. Gemini 11 passed Bermuda now. We'll pick it up again at the Canary Islands at 69 hours 43 minutes 37 seconds.

END OF TAPE

HOU Roger, Canary.

CYI We have C- and S-band track.

HOU Roger.

Gemini Control at 69 hours 43 minutes and the Canaries about to pick Gemini 11 up. We will follow through the Canaries and down through Kano.

CYI Gemini is GO.

HOU Roger.

CYI Gemini 11, Canary Cap Com.

S/C Go ahead, Canaries. 11 here.

CYI Okay, 11. I guess this is our last pass until the next mission. We show you GO on the ground and wish you luck.

S/C Thank you, and thanks for all your help and say "Hi" to everybody.

CYI Sure will.

Flight, Canaries.

HOU Go ahead.

CYI Okay, the T_r is somewhere between 0 and 125 milliseconds and lagging, it jumps back and forth.

HOU Very good.

Canaries from Flight.

CYI Flight, Canaries. Go.

HOU OBC, Gemini.

CYI Roger.

CYI Canaries has LOS Gemini.

Canary has LOS all parameters.

HOU Roger, Canaries.

See you back home, Buck.

CYI Roger.

HOU Good show.

Kano go remote.

KNO Kano is remote and we have acquisition.

HOU Gemini 11 at Kano. Standing by.

S/C Roger. 11. Roger Houston, 11.

END OF TAPE

HOU Gemini 11, Houston. 1 minute 30 seconds to LOS at Kano.

S/C Roger, Houston.

Gemini Control, 69 hours 56 minutes. We're out of range of Kano now. Tananarive will acquire Gemini 11 at 70 hours 1 minute 55 seconds.

END OF TAPE

This Gemini Control 70 hours 1 minute into the mission. Gemini 11 is now being acquired by Tananarive.

TAN Gemini 11 Houston at Tananarive. Standing by. Gemini 11 Houston at Tananarive. Standing by.

S/C Roger Houston

HOU Gemini 11 Houston, We'd like to know how you liked your peanut cubes, over.

S/C We ate a couple. We thought they were pretty good.

HOU Roger.

S/C You're coming through Tananarive today like you were right next door.

TAN It's been a real good communication site this time hasn't it?

S/C Sure has. Right now it is the best.

Gemini Control at 70 hours 11 minutes. Gemini 11 passed Tananarive range now. We are 30 minutes 10 seconds away from retrofire. Retrofire due to occur just passed the International Dateline, northeast of the Gilbert Islands. Gemini 11 should be at an altitude of 153 nautical miles at retrofire time. That time is 70 hours 41 minutes 36 seconds elapsed time. Carnarvon will acquire the spacecraft at 70 hours 18 minutes 15 seconds. This is Gemini Control.

END OF TAPE

CRO Okay, I will give you a hack then.

S/C Be advised the computer is in receive.

CRO Stand by for a hack. 3 - 2 - 1 - mark.

S/C Roger, we got it. Yes, this is good. Okay. Sure appreciate the help from everybody down there and that shore sure looks big from 750 miles.

CRO Roger, Pete. The M & O's want to pass along their congratulations. And they want to know when you are coming back.

S/C Whenever they will let me.

CRO Have a good trip home.

S/C Thank you. Thanks to everybody down there.

CRO One minute until LOS.

S/C Roger, thank you.

CRO Carnarvon has LOS on Gemini.

This is Gemini Control 70 hours 27 minutes into the mission. We are 13 minutes 53 seconds away from retrofire. Gemini 11 out of range of Carnarvon now. Canton will acquire at 70 hours 39 minutes and it is 70 hours 41 minutes 36 seconds we will have retrofire. We will come back prior to Canton acquisition. This is Gemini Control.

END OF TAPE

This is Gemini Control, 70 hours, 38 minutes into the flight. We're about to acquire at Canton. We're two minutes, 35 seconds away from retrofire. Two minutes and 14 seconds away from retrofire. Weather in recovery area is good. This splash point is 610 nautical miles down range from the Cape. Coordinance, 24 degrees, 18 minutes north; 70 degrees, west.

Gemini Control, 58 minutes to retrofire - 58 seconds!

Gemini Control. The Gemini 11 crew has separated the equipment adapter. 30 seconds from retrofire. 20 seconds. 10, 9, 8, 7, 6, 5, 4, 3, 2, 1 - Retrofire! The crew reports a good retrofire. Let's listen to this conversation now.

S/C Address 81 reads 91, 82 reads 918.3.

HOU Houston, roger.

S/C Houston, retro jet.

HOU Roger, retro jet.

S/C Address 80 after retro jet, 303.1.

HOU Houston, roger.

S/C Attitude..., automatic retrofire.

HOU Roger.

HOU Give you a time hack in three minutes.

S/C Roger.

HOU 10 seconds, 4, 3, 2, 1 - Mark. Three minutes after retrofire.

HAW Hawaii has telemetry contact.

HOU Roger.

HAW Gemini 11, Hawaii standing by.

S/C Roger, Hawaii. We're just going through the post-retro checklist.

HAW Roger.

HOU Hawaii from Flight.

HAW Go ahead, Flight.

HOU How about OBC's?

HAW Roger.

S/C Hello, Houston, Gemini 11. Post-retro checklist complete.

HAW Oh, roger. Okay, everything looks good here on the ground, 11. Your cabin pressure's good, voltage is good, secondary fuel holding and rate pressures and source pressures are real good. We'll see you back home.

S/C Roger. Thank you much.

Gemini Control, six minutes, 38 seconds since retrofire. The retrofire officer and the Flight Director quite pleased with this retrofire.

END OF TAPE

HAW One minute to LOS.

S/C Roger. Thank you much, for all your help.

HAW Your welcome. It was a pleasure.

S/C No I believe it was all ours really

GORDON And I agree.

Gemini Control at 8 minutes 39 seconds since retrofire. This will be the first closed loop or so called automatic reentry for a Gemini spacecraft. The crew sets up this retrofire and then when the bank angles are established they monitor the needles. The computer is hooked directly to the thrusters via electronics and drives the thrusters themselves. The crew will closely monitor this and can override the automatic system at any time they deem it advisable. We're at nine minutes 24 seconds now since retrofire. We have a short tape of the retrofire sequence. We will play that for you now.

HOU Gemini 11 this is Houston at Canton. Over

FD Canton go remote.

CTN Canton remote.

HOU Gemini 11 Houston at Canton. Over.

S/C Gemini 11,(garbled)

HOU Roger and we're at 2:23 now.

S/C Roger

HOU Two minutes

HOU Gemini 11 Houston, one minute

S/C 11, Roger.

HOU Thirty seconds

HOU 10, 9, 8, 7, 6, 5, 4, 3, 2, 1, RETROFIRE

S/C Retrofire at 3:03 a.m., one right,118 down

HOU Roger

S/C That dosimeter reads 02.8

Gemini Control, we're 23 minutes 45 seconds away from landing. It has been 11 minutes 14 seconds since retrofire. Gemini 11 now down below the 120 nautical mark. Velocity is about 23 000 feet per second.

Gemini Control. This reentry ground track will come across Baja, California down across the northern part of Mexico, into Texas just south of Del Rio, will cross the Texas coast into the gulf just south of Victoria and will pass over the west coast of Florida right above Fort Meyers and leave Florida again just above Fort Lauderdale. We'll standby now for conversation as we come into California acquisition.

HOU Gemini 11 Houston at California. Over

HOU Gemini 11 Houston, over.

S/C Go ahead Houston

HOU Roger. The initial downrange needle deflection is 63 nautical miles up. Over

S/C Roger. Roger John we are standing by for the rest of our retro update.

HOU Roger.

FD Guaymas remote, California local.

GYM Guaymas.....

Gemini Control, recovery reports 12 aircraft airborne now in recovery area. Gemini 11 down to the 80 nautical mile mark.

Houston here, Gemini 11 should be out over the Gulf of California now at 17 minutes 20 seconds since retrofire. 17 minutes 33 - 30 seconds until landing.

END OF TAPE

HOU Gemini 11, Houston. Based on White Sands' track and you are over there now.

S/C Roger.

HOU Roger. Your begin blackout and end blackout times are good. Your RET to go is 29 plus 31 RET to main is 30 plus 55.

S/C Roger 29 plus 31 and 30 plus 55.

HOU That is affirmative.

Gemini Control 15 minutes 41 seconds away from landing. And Gemini 11 crossing the northern part of Mexico, just about to cross over the Rio Grande River. Gemini Control 14 minutes 53 seconds until landing. Gemini 11 has passed the 400 000 foot mark. Occurred just before - right at the Rio Grande River. Should cross the right south of the Victoria, Texas at 14 minutes from landing, about a half a minute from now. Heart rates during this retrofire 94 for Pete Conrad, 78 for Dick Gordon.

S/C ...54... time was 0 plus 14.

HOU 200K is - 400K is 20 plus 06. Over.

S/C Roger. We have ... up 0 plus 14.

HOU 20 plus 06 is 400K time.

S/C Roger, John.

Gemini Control. Gemini 11 now in the blackout period. This blackout period began 22 minutes 40 seconds from retrofire,

due to end 27 minutes 56 seconds. Gemini Control tracking shows that as of now we are very close to hitting the aiming point, this footprint. Gemini Control the aiming point is in the center of a footprint 200 miles long and 40 miles wide. We are now 25 minutes 14 seconds from retrofire. Still have slightly over 2 minutes left in this blackout period. Gemini Control velocity dropping off quite rapidly now as Gemini 11 digs down into the atmosphere down below 18 000 feet per second now. Seven minutes 49 seconds away from landing. Still in the blackout period.

END OF TAPE

Gemini 11 Houston.

HOU How's it going?

HOU Gemini 11 Houston, over.

HOU Gemini 11 Houston, over.

S/C I'm sorry Houston. We're right on the money, with an auto.

HOU Roger

What altitude are you at now? over.

S/C We show about or 3 G's

HOU Roger

S/C Should be asking for a roll now..

Yeah, we read you, let's us get the chute out, we still have our rudders down.

HOU Roger.

S/C Tell us when, we read you loud and clear.

Stand by.

Gemini Control , Guidance Control Officer, reports that about half of ring A of the re-entry system has been used at this time.

S/C This 86 reads 2418.

HOU Roger.

S/C and the 87 reads 29002

HOU Roger.

S/C We're to keep our light on the money with the altimeter.

HOU Roger

S/C Roger 1 2 3 4 5 5 4 3 2 1 on the air. Over.

HOU Reading you loud and clear. That was a good count there.

three zero zero through

....horizon

GUAM Got a hack on GT 11, we've got a 070 for a main. We have R 1 correct by EVS bearing to 0 8 0 magnetic. over.

S/C Okay flight, GT 11 1 2 3 4 5 5 4 3 2 1 over.

Gemini Control and the Guam, the recovery ship, Guam has electronic contact with the spacecraft on the main chute.

Guam Gemini 11 this is Guam control.

The Guam reports visual sighting on the spacecraft on the parachute.

HOU Gemini 11 this is Houston. You're on TV now.

S/C Stand by there flight, we have a contrail dead ahead and bearing approximately 100.

Guam Roger, understand..dead ahead 100 from you..out.

Gemini Control that little parachute was bringing down the R R can. That little chute you saw on the TV screen there. The rendezvous and radar section of the spacecraft.

Gemini Control. The helicopter with the swim team is on the way to the splash point.

Gemini Control. The carrier Guam reports the spacecraft $\frac{1}{2}$ mile from the ship.

Gemini Control. Three swimmers are in the water.

END OF TAPE

Gemini Control. A report from the carrier that the astronauts are in good shape. Both crewmen in good shape.

GUAM ...in the water. At the present time the flotation collar is being placed around the spacecraft and we see the frogmen dive underneath the Gemini 11 spacecraft to attach a ..... to hold the spacecraft.....

Gemini Control. The flotation collar is on the spacecraft. Recovery now reports the Guam 3,000 yards from the Gemini 11.

GUAM I see now that two additional swimmers dropped by Swim 2 have inflated their liferafts and they've retrieved the R & R section, as the three swimmers from 3D21 continue to move around the Gemini 11 making sure that the spacecraft flotation collar is on properly. The approach ship, the U. S. S. Guam is approximately one mile from the Gemini 11. The Gemini 11 spacecraft is ..... approximately one mile from the approach ship, the U. S. S. Guam. The two Swim aircraft, the helo aircraft....from anti-submarine squadron 3 are hovering at 40 feet around the Gemini 11, to lend any assistance to the .... swimmers.

SWIM 1 This is Swim 1 broadcasting on ... I see the astronauts moving around in the spacecraft.

We can see them very dimly through the ice splashed windows.....The three swimmers are still around the Gemini 11.....with winds of approximately 10 knots. The U. S. S. Guam is making an orbit around Gemini 11.
The swimmers are - demolition team 21 - have - are swimming over to the raft now.....
Swim 2 continues to make its circular ring
.....

Gemini Control. We have a report that the swim team leader is recommending that pick up by helicopter - that Pete Conrad and Dick Gordon be picked up by helicopter and brought aboard the Guam.

SWIM 1 Roger, this is Swim 1,.....

SWIM 2 Swim 2, again. We're picking up the swim crew to complete this Gemini 11 splashdown and recovery by the approach ship, the U. S. S. Guam, and a detachment of eight helicopters from Helicopter Anti-submarine squadron 3. The three swimmers that are in the water are on the Gemini 11 ... raft at this time and they have the flotation collar fully inflated around the Gemini 11. At this time the Command Pilot and the Pilot are still aboard, but we have received the signal from the ...21 that the astronauts are all

okay.

S/C Do you think it's okay to open the hatch?

SWIM 2 Gemini 11, this is Swim 2. Is everything....
... We now see that one of the swimmers is going aboard the additional raft.
Gemini 11, Swim 2. Recommend you keep your engines forward for three or four more minutes, over.

S/C Roger.

SWIM 2 Swim 1 is now approaching Gemini 11 to drop an additional raft to the swimmers. The green dye continues to dissipate into the water....
Swim 1 is now hovering beside the spacecraft at approximately two feet and has dropped the raft into the water. One of the frogmen has the raft and is pulling it over to the spacecraft at this time. The frogman now has the raft approximately 10 feet from Gemini 11.

This is Gemini Control. We have some approximate mileage figures here from the carrier. They estimate Gemini 11 was approximately five miles away when they got it on the chute, two and a half to three miles away at splash, and the splash was approximately seven miles from the aim point.

SWIM 2 The flotation collar is on the side of Gemini 11. We have one frogman on the flotation collar

riding with the spacecraft. And we have two additional frogmen in the water keeping tabs on the ..... recovery section. Swim 1 is now coming back ..... Gemini 11. The swimmers are still on the flotation collar of Gemini 11. At the present time the spacecraft is floating nominally on that flotation collar. One raft depleted beside the spacecraft.

END OF TAPE

GUAM .....an additional heat plane has went into the water and it was the final heater plane that ran attached to the R and R section of the Gemini 11 spacecraft. Right now the two swimmers on top of the flotation collar and they signal that everything is okay. Everything is A-OK. Now the Gemini 11 command pilot hatch is opening and we have one astronaut - apparently is standing in the spacecraft at the present time. He has his space helmet off and is standing. Now he is looking into the spacecraft and he is preparing now to climb out of Gemini 11 and proceed into the attached raft. He is now in the raft beside the Gemini 11 spacecraft. We now have the pilot. Astronaut Gordon is climbing out of the same hatch. We have one hatch only open and he is preparing to climb into the raft.

Gemini Control Houston, the Mission Control Center here estimates the landing was 1-1/2 to 2 miles from the aimed point.

GUAM .....and he is attempting to aid his copilot. Now we have both astronauts in the raft. The Gemini 11 door is opened at this time.

As they are leaving, Conrad will know everything is okay. At the present time we have the Gemini 11 spacecraft. We have one hatch opened, the flotation collar attached and two happy astronauts sitting in the raft accompanied by two navy frogmen. At the present time the astronauts have inflated their specially designed Mae West that they carry with them. They have both of these orange waterway type affairs deflated at this time. The raft attached to the space however, is floating easily and there is a slight sea base. They have the swim one and photo aircraft over/nearby in preparation for a pickup. We have had no indication as yet of the third frogman that comes up for us through the spacecraft/flotation collar and closes the command pilot hatch. Now both of the hatches are closed. The astronauts continue to float easily in a four man raft attached to the flotation collar. NASA hasn't indicated as yet whether astronauts Conrad and Gordon desired to picked up , though all indications point to a pickup by swim one.

? ....the QU1821 team signals that they want to

have the rescue plane of swim one lowered to the astronauts and have them hoisted aboard. Sea rescue plane of station three, swim one aircraft is now in the water and he is moveing in toward the Gemini 11 and the astronauts. The rescue plane is now approximately 15 feet from the astronauts as Lieut. Doege in swim one easily flies his helicopter for the pickup. Swim one is now directly over the spacecraft and the rescue plane is approximately five feet from the Astronauts, Conrad and Gordon. From this point I cannot tell which astronaut will be hoisted aboard first but they are at the present time attaching the left (garbled) around one of the astronauts and the navy frogman has signaled to raise the hoist. As one of the astronauts is lifted up by the helicopter, clear of the spacecraft and the raft, and is rising slowly and steadily up to swim one. The astronaut now is approximately half way up -----is now off to the side of the aircraft. The other crewmen of swim one have the astronaut, fore and aft, in the aircraft at this time. He is

in the aircraft at this time. The rescue sling of swim one is now being relowered down to the Gemini 11 spacecraft to pick up the remaining astronaut, deposit him in swim one and return him to the ship Guam. Both of the hatches of the Gemini 11 spacecraft are closed at the present time. The flotation collar is fully inflated and adds to the spacecraft to ride easily. The rescue plane is now in the water approximately two feet from the second astronaut to be picked up. .....Lieut. Doege and navy copilot Lieut. Rotsch should maneuver the helicopter over the spacecraft. ..... only approximately 3/4 of a mile from this Gemini 11 spacecraft in preparation to receive the astronauts onboard the flight deck, then to move in to pick up the spacecraft itself. We now see the second astronaut is in the rescue sling and up he goes into swim one. He is now approximately half way up floating easily, slowly and steadily to the aircraft. The astronaut is now approximately 5 feet below the aircraft as the hoist comes up steadily. The two air crewmen, Petty Officer Scarborough and Barugh have the

astronaut in the helicopter at this time. Both of the astronauts are in the swim one helicopter, getting prepared to depart of the area for the USS Guam, arriving onboard in approximately five minutes.

GUAM Reporting at the Gemini 11 splashdown as the Astronauts Conrad and Gordon board the HF3 swim one, to return to the USS Guam accompanied by the photo aircraft which will also land aboard.

END OF TAPE

END OF GEMINI 11 MISSION COMMENTARY.