1
00:00:00,140 --> 00:00:07,140
…okay, entry conditions which is, would
primarily be for corridor control, controlling

2
00:00:08,540 --> 00:00:15,540
the flight path angle at entry. And the current
predicted splash time in the Pacific is 195

3
00:00:20,240 --> 00:00:27,240
hours 17 minutes 25 seconds. At the present
time Apollo 11 is 172,654 nautical miles from

4
00:00:32,390 --> 00:00:39,390
the Earth, traveling at a speed of 4017 feet
per second. We estimate that the spacecraft

5
00:00:45,789 --> 00:00:52,789
will be half way home at a ground elapse time
of 159 hours 53 minutes 43 seconds. At that

6
00:00:56,550 --> 00:01:03,550
point
the spacecraft will 145,583 nautical miles
from the Earth's surface, and we will have

7
00:01:17,549 --> 00:01:24,549
completed half of the return trip measured
from lunar orbit insertion to splashdown.

8
00:01:27,020 --> 00:01:34,020
Now we also have another figure that would
be for the time of which the spacecraft velocity

9
00:01:45,490 --> 00:01:52,490
is equal with respect to both the Earth and
the moon. At that point the velocity will

10
00:01:52,659 --> 00:01:59,659
be 4300 feet per second with respect to both
bodies and we would define this as the equal

11
00:02:02,680 --> 00:02:09,680
potential point and that will occur at 155
hours 30 minutes and at that time the spacecraft

12
00:02:13,569 --> 00:02:20,569
will 156,874 nautical miles from the Earth,
52 543 nautical miles from the moon. We're

13
00:02:28,040 --> 00:02:35,040
now 1 hour 28 minutes 26 seconds from ignition
for the midcourse correction 5 maneuver.

14
00:02:49,530 --> 00:02:56,530
Apollo 11, this is Houston. Over.

15
00:03:34,950 --> 00:03:41,950
Roger, go ahead Houston.

16
00:04:05,230 --> 00:04:12,230
CAPCOM Roger, if Neil has a free minute, we've
got a question or two regarding the C02 partial

17
00:04:25,350 --> 00:04:31,650
pressure and water in the suit loop discrepancy
noted yesterday. Over.

18
00:04:31,650 --> 00:04:34,480
Go ahead.

19
00:04:34,480 --> 00:04:41,480
Roger, 11. Was water noted in both suits or
only in yours, Neil?

20
00:04:42,720 --> 00:04:46,720
SC I think only in my suit.

21
00:04:46,720 --> 00:04:53,720
CAPCOM Okay, can you locate that occurrence

for us in time when you first noticed water

22
00:04:53,820 --> 00:05:00,820
in the suit either by mission time or relation
to any particular event?

23
00:05:01,640 --> 00:05:08,640
SC I think it was after insertion sometime,
Bruce. I don't remember exactly when. It was

24
00:05:23,830 --> 00:05:29,990
when we were in orbit and had our, after we
took our helmets off.

25
00:05:29,990 --> 00:05:34,050
CAPCOM Roger, did you call it co us when you
first noticed it, or was it sometime after

26
00:05:34,050 --> 00:05:34,570
when you called us?

27
00:05:34,570 --> 00:05:41,570
SC It just might have been probably 20 minutes
after I noticed it that I mentioned it to

28
00:05:42,030 --> 00:05:42,700
you.

29
00:05:42,700 --> 00:05:48,530
CAPCOM Roger. Was this noticing the water
accompanied by your erratic C02 partial pressure

30
00:05:48,530 --> 00:05:52,790
readings or was that a separate problem? Over.

31
00:05:52,790 --> 00:05:59,790
SC Well, the water problem evidenced itself
before we noted any erratic motion the PCO2

32

00:06:04,850 --> 00:06:05,520
gauge.

33
00:06:05,520 --> 00:06:12,520
CAPCOM Roger. What was the relative sequence
on selecting water separator number 2 and

34
00:06:12,590 --> 00:06:17,720
the secondary CO2 canister - that is, did
you go to the secondary water separator first

35
00:06:17,720 --> 00:06:21,930
and then the secondary CO2? Over.

36
00:06:21,930 --> 00:06:28,930
SC I believe we went to secondary C02 first.

37
00:06:30,900 --> 00:06:37,900
CAPCOM Roger, we copy. Was there any change
in your suit loop count?.

38
00:06:39,870 --> 00:06:41,550
SC Now…

39
00:06:41,550 --> 00:06:44,070
CAPCOM Go ahead.

40
00:06:44,070 --> 00:06:51,070
SC I should mention, Bruce, that when I went
to water secondary, water separator to secondary

41
00:06:51,630 --> 00:06:56,560
that. I didn't notice any change, but about
after 15 minutes or 20

42
00:06:56,560 --> 00:07:00,900
minutes the water stopped coming out. So,
maybe that was just water that was already

43

00:07:00,900 --> 00:07:07,040
in the loop that was still blowing out, but
the secondary water separator was operating

44
00:07:07,040 --> 00:07:08,440
properly.

45
00:07:08,440 --> 00:07:15,440
CAPCOM. Roger, did you make any changes in
the suit tube configuration after you went

46
00:07:16,400 --> 00:07:21,440
from the egress mode to the cabin mode after
insertion - that is, in particular, they're

47
00:07:21,440 --> 00:07:26,810
interested in knowing if you recall changing
the diverter valve position to egress any

48
00:07:26,810 --> 00:07:29,620
time while you were on the secondary canister?
Over.

49
00:07:29,620 --> 00:07:36,620
SC No, I don't believe we did that at all,
Bruce.

50
00:07:38,080 --> 00:07:44,630
CAPCOM Okay, 11. Thank you. That sums up our
questions for now and we'll crank these back

51
00:07:44,630 --> 00:07:50,090
into the engineering pipeline and see what
we can come up with.

52
00:07:50,090 --> 00:07:57,090
SC Okay. Are you satisfied that the CO2 circuit
breaker was in (garbled)? Over.

53
00:08:02,910 --> 00:08:07,910

CAPCOM Say again, please.

54
00:08:07,910 --> 00:08:14,910
SC Roger. In LM jettison, are you satisfied
that the C02 circuit breaker was in? Over.

55
00:08:19,650 --> 00:08:20,890
CAPCOM Yes, it was in.

56
00:08:20,890 --> 00:08:27,890
SC Roger, could you confirm that? I thought
there was some question after we got into

57
00:08:29,120 --> 00:08:33,590
the command module as to whether that had
been left in or not. Over.

58
00:08:33,590 --> 00:08:38,450
CAPCOM Roger, 11. It was in and confirmed
in, and the readings after jettison say about

59
00:08:38,450 --> 00:08:41,409
.I to .2.

60
00:08:41,409 --> 00:08:48,409
PAO This is Apollo Control at 149 hours, 41
minutes. We're now about 49 minutes away from

61
00:08:51,550 --> 00:08:57,870
the first midcourse correction of this transearth
leg of the Apollo 11

62
00:08:57,870 --> 00:09:04,870
flight. That maneuver will be a 4.8 foot per
second burn of the spacecraft reaction control

63
00:09:07,390 --> 00:09:14,390
system thrusters and is scheduled to occur
at a ground elapsed time of 150 hours, 29

64
00:09:15,720 --> 00:09:22,720
minutes 54 seconds. At this time Apollo 11
is 171,017 nautical miles from the earth and

65
00:09:24,680 --> 00:09:30,430
the spacecraft velocity is 4043 feet per second.

66
00:09:30,430 --> 00:09:37,430
Houston, Apollo 11. Over.

67
00:09:40,480 --> 00:09:47,480
11, this is Houston. Over.

68
00:09:53,040 --> 00:10:00,040
SC Roger. I wonder if you have noticed any
change in the biomed returns sign you're getting?

69
00:10:14,270 --> 00:10:14,880
Over.

70
00:10:14,880 --> 00:10:20,820
CAPCOM Negative, Buzz. Still looks kind of
bad. Apparently when you move around, it's

71
00:10:20,820 --> 00:10:26,000
cutting in and out. Have you checked the little
electrical connector where it goes into the

72
00:10:26,000 --> 00:10:27,890
signal conditioner? Over.

73
00:10:27,890 --> 00:10:34,610
SC I did. They're all about as tight as can
be. I tell you what I'll, I'll take them out

74
00:10:34,610 --> 00:10:40,680
and put them back on again to see if that
makes any difference.

75
00:10:40,680 --> 00:10:47,680
CAPCOM Okay, if you would at your convenience.
We'll be watching it down here.

76
00:10:56,810 --> 00:11:03,810
PAO This is Apollo Control at 150 hours 4
minutes. Telemetry data at this time shows

77
00:11:06,500 --> 00:11:13,500
the spacecraft in the proper attitude for
the upcoming midcourse correction maneuver.

78
00:11:14,490 --> 00:11:21,490
The crew will soon be verifying their attitude
by taking a sighting on a star through the

79
00:11:24,060 --> 00:11:31,060
sextant and then be running some tests on
the guidance and control system and the reaction

80
00:11:34,030 --> 00:11:41,030
control system before the maneuver takes place.
That burn now scheduled to come a little over

81
00:11:42,610 --> 00:11:49,610
25 minutes. Apollo 11 is now 170 102 nautical
miles from the Earth and the spacecraft velocity

82
00:11:53,580 --> 00:11:57,060
is 4058 feet per second.

83
00:11:57,060 --> 00:12:04,060
Apollo 11, this is Houston. We'd like you
to try acquisition on the high gain antenna

84
00:12:09,600 --> 00:12:16,600
for us at PITCH minus 90, YAW 270. Over.

85
00:12:16,970 --> 00:12:23,970

SC Roger. Got us some work.

86
00:12:24,090 --> 00:12:27,650
CAPCOM Roger, out.

87
00:12:27,650 --> 00:12:34,650
CAPCOM 11, this is Houston. We're showing
about 6.8 percent on waste water on our telemetry

88
00:12:39,000 --> 00:12:42,420
now. Over.

89
00:12:42,420 --> 00:12:49,420
SC Okay, we've got about 9 up here. Over.
CAPCOM Roger, out.

90
00:13:02,890 --> 00:13:09,890
CAPCOM 11, Houston. We're standing by for
your burn. Everything's looking good from

91
00:13:14,760 --> 00:13:15,540
down here.

92
00:13:15,540 --> 00:13:22,540
SC Thank you Bruce. You've got about a minute
and 20 seconds.

93
00:13:28,040 --> 00:13:35,040
CAPCOM Roger, we concur.

94
00:13:36,120 --> 00:13:43,120
PAO One minute until midcourse correction
number 5. It will be a 10.9 second burn of

95
00:13:45,070 --> 00:13:51,670
the spacecraft reaction control system thrusters
giving a change of velocity retrograde of

96
00:13:51,670 --> 00:13:58,670

4.8 feet per second. The primary purpose of
this maneuver will be to control the spacecraft

97
00:14:02,790 --> 00:14:09,790
flight path angle at entry interphase. We're
now less that 30 seconds from the initiation

98
00:14:14,130 --> 00:14:21,130
of the burn.

99
00:14:23,880 --> 00:14:30,880
PAO They should be burning at this time.

100
00:14:49,440 --> 00:14:56,440
PAO And we show the burn off.

101
00:15:03,320 --> 00:15:10,320
SC Houston, do you copy our residuals?

102
00:15:48,750 --> 00:15:55,750
CAPCOM Roger, we've got your residual fuel
count reading for us.

103
00:16:17,410 --> 00:16:24,410
SC DELTA VC is plus .2.

104
00:16:27,230 --> 00:16:33,779
CAPCOM Roger. Plus .2.

105
00:16:33,779 --> 00:16:40,779
SC It was actually plus 100.2. Okay?

106
00:16:45,240 --> 00:16:48,510
CAPCOM Okay.

107
00:16:48,510 --> 00:16:55,510
PAO That midcourse correction was performed
at a distance of about 169,000 nautical miles

108
00:16:57,529 --> 00:17:04,529
from the Earth at a spacecraft velocity of
4075.6 feet per second.

109
00:17:17,170 --> 00:17:24,170
PAO This is Apollo Control at 150 hours 35
minutes. Our telemetry data here on the ground

110
00:17:38,260 --> 00:17:45,260
shows that a midcourse correction maneuver,
just about nominal, burn duration 10.5 seconds.

111
00:17:50,400 --> 00:17:56,059
Prior to the maneuver, we were predicting
a splashdown time of 195 hours 17 minutes

112
00:17:56,059 --> 00:18:02,370
25 seconds. And we expect there will be some
modification to that after we've had a chance

113
00:18:02,370 --> 00:18:09,370
to do some tracking following this midcourse
correction maneuver. Apollo 11 is now 168,843

114
00:18:15,150 --> 00:18:20,160
nautical miles from the earth traveling at
a speed of 4078 feet per second and we're

115
00:18:20,160 --> 00:18:25,580
continuing to see a very slow buildup in the
velocity.

116
00:18:25,580 --> 00:18:32,580
SC Houston, Apollo 11.

117
00:18:35,550 --> 00:18:42,550
CAPCOM Go ahead, 11.

118
00:18:45,520 --> 00:18:52,520

SC Roger. We're in FTC attitude and would
you please give us a call when our thruster

119
00:18:56,860 --> 00:19:01,140
activity has subsided sufficiently?

120
00:19:01,140 --> 00:19:08,140
CAPCOM Roger, stand by.

121
00:19:12,140 --> 00:19:19,140
CAPCOM Apollo 11, this is Houston. We're going
to hand over from Madrid to Goldstone at 151

122
00:19:31,990 --> 00:19:38,260
hours even. If you should lose lock on the
high gain at this time, you may require at

123
00:19:38,260 --> 00:19:45,260
PITCH minus 45 yaw 270. Break. We're still
watching your rates. Over.

124
00:19:52,660 --> 00:19:59,660
SC Okay. Thank you.

125
00:20:43,179 --> 00:20:15,480
CAPCOM Apollo 11, this is Houston, over.

126
00:21:03,870 --> 00:21:10,870
SC Go ahead, Houston.

127
00:21:19,690 --> 00:21:26,690
CAPCOM 11, we're still seeing rates on your
spacecraft above those we would like for and

128
00:21:33,490 --> 00:21:38,210
the continuation of the PTC mode which we
are still monitoring it and we'll advise you

129
00:21:38,210 --> 00:21:45,210

when it has settled down, over.

130
00:21:51,720 --> 00:21:57,059
SC Okay.

131
00:21:57,059 --> 00:22:04,059
PAO This is Apollo Control at 151 hours 11 minutes. The crew is presently setting up

132
00:22:07,230 --> 00:22:14,230
the spacecraft for passive thermal control. Once it stabilizes out it will begin a slow

133
00:22:15,500 --> 00:22:22,500
roll rate of three revolutions per hour to maintain temperature control. At the present

134
00:22:23,460 --> 00:22:30,460
time Apollo 11 is 167,448 nautical miles from the Earth and the velocity is 4101 feet per

135
00:22:32,440 --> 00:22:34,110
second.

136
00:22:34,110 --> 00:22:41,110
CAPCOM Apollo 11, this is Houston. You are Go for the set up on PTC, over.

137
00:22:57,110 --> 00:23:00,770
SC Thank you.

138
00:23:00,770 --> 00:23:06,870
SC Houston, Apollo 11, over.

139
00:23:06,870 --> 00:23:11,750
CAPCOM Go ahead 11.

140
00:23:11,750 --> 00:23:18,750
SC It didn't like it that time. When I got

down to the entry 27303 enter, it took off

141
00:23:21,340 --> 00:23:28,340
in roll at a high rate in excess of one degree
per second. Over. That stopped it now and

142
00:23:28,920 --> 00:23:32,990
we are going to have to go back and do it
over again. I'd like to try find out the

143
00:23:32,990 --> 00:23:35,360
reason it did that.

144
00:23:35,360 --> 00:23:39,710
CAPCOM Roger. You might as well start setting
up for it and we will be working the problem

145
00:23:39,710 --> 00:23:40,360
here.

146
00:23:40,360 --> 00:23:47,360
SC Okay. You do have us on high bit rate here
now?

147
00:23:48,200 --> 00:23:50,160
CAPCOM That's affirmative.

148
00:23:50,160 --> 00:23:57,160
SC Okay, good. I'll maneuver back to PTC Ignition
Attitude while you guys look at the data and

149
00:24:09,179 --> 00:24:16,179
see what you think.

150
00:24:31,630 --> 00:24:31,770
CAPCOM Roger.

151
00:24:31,770 --> 00:24:38,770
SC Houston, Apollo 11. I think the reason

is in having 1620 on the DSKY during the subsequent

152
00:24:40,380 --> 00:24:47,380
entry or at least that’s one possibility.

153
00:24:52,000 --> 00:24:59,000
CAPCOM Roger. We’ll check it out.

154
00:25:03,340 --> 00:25:10,340
CAPCOM Apollo 11, this is Houston. While you're
waiting for the CSM to settle down and for

155
00:25:15,330 --> 00:25:22,330
us to look at the tapes on your latest maneuver,
would you feel like answering some more questions

156
00:25:27,450 --> 00:25:31,660
with relation to the lunar surface? Over.

157
00:25:31,660 --> 00:25:33,160
SO Go ahead.

158
00:25:33,160 --> 00:25:35,169
SC Go ahead, Bruce.

159
00:25:35,169 --> 00:25:41,370
CAPCOM Roger. For 64,000 dollars we're still
trying to work out the location of your landing

160
00:25:41,370 --> 00:25:48,370
site, Tranquility Base. We think it is located
on LAM2 Chart at Julia .5 and 7.8. Do you

161
00:25:54,770 --> 00:26:00,440
still have those charts onboard? Over.

162
00:26:00,440 --> 00:26:06,110
SC Stand by one. They're packed.

163
00:26:06,110 --> 00:26:13,110
CAPCOM Roger. You may not have to unpack it.
The position which I Just gave you is slightly

164
00:26:15,710 --> 00:26:22,710
west of Wess Crater. I guess it's about two
tenths of a kilometer west of it and

165
00:26:25,960 --> 00:26:31,950
we were wondering if Neil or Buzz had observed
any additional landmarks during descent lunar

166
00:26:31,950 --> 00:26:38,950
state or ascent which would confirm or disprove
this. One thing we're wondering about is that

167
00:26:40,049 --> 00:26:43,169
if you were at this position, you would have
seen the

168
00:26:43,169 --> 00:26:50,169
Cat's Paw, during the ascent just up to the
north of your track. Over.

169
00:26:52,340 --> 00:26:59,340
SC We were looking for the Cat's Paw too,
thinking we were probably downrange beyond

170
00:26:59,450 --> 00:27:06,450
the Big Z. But I think that it's likely that
that might have been Wess Crater that we went

171
00:27:06,669 --> 00:27:13,299
across in landing, but, stand by.

172
00:27:13,299 --> 00:27:20,299
SC We're hoping, Bruce, that our 16 millimeter
film was working at that point in descent

173

00:27:24,270 --> 00:27:29,500
and we'll be able to confirm our touchdown
position. We thought that during

174
00:27:29,500 --> 00:27:36,500
ascent we might be able to pick up some recognizable
objects close to the landing site, and we

175
00:27:37,669 --> 00:27:42,440
did see a number of small craters and crater
rows and things like that, which we may be

176
00:27:42,440 --> 00:27:49,440
able to pick out after the fact, but we haven't
been able to yet.

177
00:27:51,110 --> 00:27:57,970
CAPCOM Roger. And the next question from our
panel is for Buzz. We recall that he reported

178
00:27:57,970 --> 00:28:04,230
seeing a laser upon AOS of the Earth the first
time after, the first rev after ascent, and

179
00:28:04,230 --> 00:28:10,350
we're wondering what color the beam was and
if he could determine at the approximate location

180
00:28:10,350 --> 00:28:14,429
with respect to the Earth. Over.

181
00:28:14,429 --> 00:28:21,429
SC It was mostly white, perhaps a tinge of
yellowish color to it, and it seemed to be,

182
00:28:31,610 --> 00:28:38,610
as I recall it, the terminator of the Earth
was toward the horizon and seemed to be about

183
00:28:41,390 --> 00:28:48,390

a quarter to a third of the way down from
down toward the terminator of the Earth from

184
00:28:53,539 --> 00:29:00,539
the opposite horizon. That's a third to a
quarter of the Earth's radii. Over.

185
00:29:01,559 --> 00:29:08,559
CAPCOM Roger, and that puts it in the light
side? Over.

186
00:29:08,580 --> 00:29:15,580
SC Roger. Yes, it was in the light side. The
Earth was about 2/3 lit, Earth, with the terminator

187
00:29:20,270 --> 00:29:27,270
down toward the horizon. And now, coming from
the opposite LM of the Earth, the sunlight

188
00:29:31,650 --> 00:29:38,650
LM, coming down about one quarter to one third
of a radius in from the LM. Generally, ESSENTIALLY

189
00:29:39,070 --> 00:29:45,400
located with respect to a line drawn perpendicular
to the terminator that goes through the center.

190
00:29:45,400 --> 00:29:46,200
Over.

191
00:29:46,200 --> 00:29:50,210
CAPCOM Roger, Buzz; we copy.

192
00:29:50,210 --> 00:29:57,210
SC And I got pictures of that. I'm sure that
will show up.

193
00:29:58,950 --> 00:30:04,650
SC And I saw, I saw that too. It was a very
bright spot of light and I confirm Buzz's

194
00:30:04,650 --> 00:30:06,539
observation of its position.

195
00:30:06,539 --> 00:30:13,539
CAPCOM Okay, 11, very good. Now with respect
to the documented sample container on television

196
00:30:16,730 --> 00:30:23,730
it appeared to us as though the samples for
that container were in fact being, given,

197
00:30:24,440 --> 00:30:31,360
being selected in accordance with some thought
or consideration being given to the rocks

198
00:30:31,360 --> 00:30:38,360
themselves, and we were wondering if you could
give any further details from memory about

199
00:30:38,539 --> 00:30:45,200
any of these samples and the context of the
material or the surface from which they were

200
00:30:45,200 --> 00:30:48,280
taken. Over.

201
00:30:48,280 --> 00:30:55,280
SC Yes, you remember I initially started on
the side of the LM that the TV camera was

202
00:30:57,990 --> 00:31:04,990
on and I took a number of samples of rocks
off the surface and several that

203
00:31:05,799 --> 00:31:12,799
were just subsurface and about 20, 15 to 20
feet north of the LM. And then I recalled

204

00:31:19,190 --> 00:31:25,559
that that area had been probably swept pretty
well by the exhaust of the descent engine,

205
00:31:25,559 --> 00:31:32,070
so I crossed over to the southern side of
the LM and took a number of samples from the

206
00:31:32,070 --> 00:31:39,070
area around the elongate double crater that
we commented on and several beyond that and

207
00:31:39,530 --> 00:31:46,530
tried to take as many different types, of
rock types as I could see by eye as I could

208
00:31:47,320 --> 00:31:54,080
in the short time we had available. There
were a number of other samples that I had

209
00:31:54,080 --> 00:32:00,679
seen earlier in our stroll around the LM that
I had hoped to get back and pick up and put

210
00:32:00,679 --> 00:32:06,610
in the documented sample, but I didn't get
those and I'll be able to comment in detail

211
00:32:06,610 --> 00:32:09,400
when we get in the debriefing session.

212
00:32:09,400 --> 00:32:16,400
CAPCOM Roger. Did you observe any small craters
with conspicuously blocking rims? Over.

213
00:32:18,010 --> 00:32:25,010
SC Well, aside from the great big one that
we went over, I guess there were none in our

214
00:32:31,780 --> 00:32:38,780

area. I took a stroll back, after putting
up the PSEP and all. Buzz was starting to

215
00:32:42,340 --> 00:32:49,340
unpack the documented samples, took a stroll
back to a crater behind us that was maybe

216
00:32:50,049 --> 00:32:56,470
seventy or eighty feet in diameter and fifteen
or twenty feet deep and took some pictures

217
00:32:56,470 --> 00:33:03,470
of it. It had rocks in the bottom of pretty
good size, considerably bigger than any that

218
00:33:04,679 --> 00:33:11,620
were out on the surface but there was no,
we apparently at fifteen feet or so had not

219
00:33:11,620 --> 00:33:18,039
got below the regalus. We were essentially
showing no bedrock, at least in the walls

220
00:33:18,039 --> 00:33:20,940
of the crater at that depth. Over.

221
00:33:20,940 --> 00:33:27,940
CAPCOM Roger. We copy. Okay, thank you, Neil.
That about wraps up the questions we have

222
00:33:46,740 --> 00:33:47,190
on hand for now.

223
00:33:47,190 --> 00:33:47,210
SC Okay.

224
00:33:47,210 --> 00:33:54,210
SC My compliments to the chef. The food's
outstanding. This cream of chicken soup, I

225
00:34:46,999 --> 00:34:49,129
give at least 3 spoons.

226
00:34:49,129 --> 00:34:56,129
CAPCOM Okay. Cream of chicken, 3 spoons.

227
00:34:57,049 --> 00:35:04,049
CAPCOM Apollo 11, this is Houston. Over.

228
00:35:05,880 --> 00:35:09,670
SC Go ahead.

229
00:35:09,670 --> 00:35:16,670
CAPCOM 11. We e concur that having VERB 16
NOUN 20 up on the DSKY may well have had some

230
00:35:17,969 --> 00:35:24,930
effect, on your PTC initiation. It looks like
this would give, let the computer work with

231
00:35:24,930 --> 00:35:31,930
the knowledge of the axle, PDU angles. What
we'd like you to do is do a CDU 0 which is

232
00:35:33,469 --> 00:35:40,469
VERB 4 O NOUN 20 ENTER and then start the
PTC procedure again at step 2 with loading

233
00:35:41,989 --> 00:35:48,989
VERB 6922 desired attitude in the AUTO maneuver
and all that. OVER.

234
00:35:49,349 --> 00:35:53,569
SC Okay. The only I don’t understand about
that is why it took off at the rate it did.

235
00:35:53,569 --> 00:35:56,400
What rate should it had taken off at under
that theory?

236
00:35:56,400 --> 00:36:01,779
CAPCOM Stand by a minute, Mike.

237
00:36:01,779 --> 00:36:08,779
CAPCOM 11, CMB, this is Houston. Over.

238
00:36:12,799 --> 00:36:19,099
SC Go ahead, Houston.

239
00:36:19,099 --> 00:36:26,099
CAPCOM Mike, over here on page 9-7 of your
checklist where we're setting up PTC, there's

240
00:36:31,069 --> 00:36:38,069
been a note penciled in after wait 20 minutes
for rate to damp. Do not monitor a VERB 16

241
00:36:40,210 --> 00:36:47,210
NOUN 20. It turns out that the significance
of that is that if you are monitoring 16 NOUN

242
00:36:47,680 --> 00:36:54,680
20 then when you get down here in step 7,
the second time you do a VERB 24 you've got

243
00:36:55,269 --> 00:37:02,269
to reload the NOUN 01 to make it VERB 24 and
NOUN O1 ENTER before you load the three registers.

244
00:37:02,599 --> 00:37:03,249
Over.

245
00:37:03,249 --> 00:37:10,249
SC Roger that. I was just questioning the
rate at which the maneuver would begin if

246
00:37:12,660 --> 00:37:13,579
that were not done.

247
00:37:13,579 --> 00:37:17,289
CAPCOM Roger. We're still working on computing
the rates for you.

248
00:37:17,289 --> 00:37:24,289
PAO This is Apollo Control at 152 hours 9
minutes. At this time, the crew is getting

249
00:37:25,960 --> 00:37:32,960
the spacecraft set up to reinitiate the passive
thermal control. Apollo 11 currently 165,143

250
00:37:36,960 --> 00:37:43,960
nautical miles from the earth and traveling
at a speed of 4,142 feet per second. The flight

251
00:37:47,029 --> 00:37:52,239
plan has relatively few activities scheduled
for now through

252
00:37:52,239 --> 00:37:59,239
the beginning of the crew sleep period tonight.
We do have a television transmission scheduled.

253
00:38:05,319 --> 00:38:12,319
I believe, the time on that is a little after
8:00 P.M. Central Daylight Time.

254
00:38:17,759 --> 00:38:24,759
And we show the sleep period to begin at about
160 hours Ground Elapsed Time or a little

255
00:38:27,539 --> 00:38:34,539
less than 8 hours from now. We'll continue
to stand by for any conversation with

256
00:38:37,940 --> 00:38:44,940
the crew. It has been relatively quiet for
a good part of today. We'll stand by for a

257
00:38:49,009 --> 00:38:54,200
call from the CAPCOM or from the spacecraft
down to the ground.

258
00:38:54,200 --> 00:39:01,200
CAPCOM Apollo 11, Apollo 11, this is Houston
broadcasting in the blind. If you read us

259
00:39:03,569 --> 00:39:10,569
attempt to acquire on OMNI antennas, attempt
to acquire on OMNI antennas, if you read.

260
00:39:10,999 --> 00:39:15,039
This is Houston, out.

261
00:39:15,039 --> 00:39:22,039
CAPCOM Apollo 11, Apollo 11, this is Houston
broadcasting in the blind, do you read? Our

262
00:39:28,670 --> 00:39:35,670
contact position on an OMNI antenna, our contact
position using an OMNI antenna. Over.

263
00:39:36,569 --> 00:39:43,569
CAPCOM Apollo 11, Apollo 11, this is Houston
broadcasting in the blind. If you read attempt

264
00:39:50,390 --> 00:39:57,390
to contact using an OMNI antenna. This is
Houston. Out.

265
00:40:06,269 --> 00:40:13,269
PAO This is Apollo Control at 152 hours 29
minutes. In the process of reestablishing

266
00:40:14,009 --> 00:40:21,009
the passive thermal control with the spacecraft
in a slow rotation, we have apparently lost

267
00:40:21,920 --> 00:40:28,920
high gain lock on and we expect that the crew
will reacquire lock with the antenna once

268
00:40:30,609 --> 00:40:37,609
the passive thermal control is reestablished.
At the present time Apollo 11 is 164 thousand

269
00:40:38,989 --> 00:40:45,619
320 nautical miles from the earth and the
velocity is up now to 4 thousand 156 feet

270
00:40:45,619 --> 00:40:52,359
per second. We'll continue to stand by here
for reacquisition of the spacecraft, for reestablishment

271
00:40:52,359 --> 00:40:54,999
of high gain lock on.

272
00:40:54,999 --> 00:41:01,999
CAPCOM Apollo 11, Apollo 11, this is Houston
broadcasting in the blind. If you read us

273
00:41:06,039 --> 00:41:13,039
attempt to acquire on OMNI antennas, attempt
to acquire on OMNI antennas, if you read.

274
00:41:19,589 --> 00:41:23,539
This is Houston, out.

275
00:41:23,539 --> 00:41:26,499
SC Hey, Goldstone

276
00:41:26,499 --> 00:41:33,499
CAPCOM Apollo 11, this is Houston. How do
you read, over?

277
00:41:37,359 --> 00:41:42,289
SC Loud and clear, Bruce.

278
00:41:42,289 --> 00:41:45,739
CAPCOM Roger, what antenna are you using?

279
00:41:45,739 --> 00:41:51,309
SC Houston, Apollo 11 has gone into high gain.
How do you read, over?

280
00:41:51,309 --> 00:41:54,859
CAPCOM Well, you are loud and clear on the
high gain.

281
00:41:54,859 --> 00:41:56,959
SC So what's new?

282
00:41:56,959 --> 00:42:01,999
CAPCOM Oh, we were wondering what was new
with you up there?

283
00:42:01,999 --> 00:42:08,999
SC Oh, very quiet. We're just sitting here
letting the thruster firing damp down when

284
00:42:09,719 --> 00:42:15,380
they, Houston, let us know and we will start
this PTC.

285
00:42:15,380 --> 00:42:16,410
CAPCOM Roger.

286
00:42:16,410 --> 00:42:22,150
SC Nice to sit here and watch the Earth getting
larger and larger and the Moon smaller and

287
00:42:22,150 --> 00:42:22,329
smaller.

288
00:42:22,329 --> 00:42:26,569
CAPCOM Roger. We'll give you a call when your

rates have damped down sufficiently and we

289
00:42:26,569 --> 00:42:32,849
are unable at the present time to predict
what rate you should have seen at your last

290
00:42:32,849 --> 00:42:37,229
attempt in initiate PTC. We saw about 2 1/2
degrees per second, over.

291
00:42:37,229 --> 00:42:40,079
SC Yah, I believe that.

292
00:42:40,079 --> 00:42:47,079
SC Buzz thinks we should have a PTC program
built in the computer. He could very well

293
00:43:03,829 --> 00:43:07,959
be right.

294
00:43:07,959 --> 00:43:14,959
PAO This is Apollo Control at 153 hours, 7
minutes. At the present time, we are changing

295
00:43:17,390 --> 00:43:24,390
shifts here in Mission Control. Flight Director
Gene Kranz will be coming on to relieve Flight

296
00:43:30,420 --> 00:43:36,039
Director Clifford Charlesworth. The Capsule
Communicator on this shift will be astronaut

297
00:43:36,039 --> 00:43:43,039
Charlie Duke. There will be a change of shift
briefing in the news center, in the building

298
00:43:45,049 --> 00:43:52,049
1 auditorium in about 10 minutes. At the present
time, Apollo 11 is traveling at a speed of

299
00:43:56,579 --> 00:44:03,579
4,185 feet per second. The spacecraft is about
162,700 nautical miles from the earth. During

300
00:44:09,519 --> 00:44:15,549
the change of shift briefing, we will take
the circuit down, record any conversation

301
00:44:15,549 --> 00:44:21,900
that develops with the spacecraft and play
it back following the change of shift briefing.

302
00:44:21,900 --> 00:44:27,569
At 153 hours, 9 minutes this is Apollo Control,
Houston.

303
00:44:27,569 --> 00:44:34,569
PAO This is Apollo Control. 153 hours 49 minutes
Ground Elasped Time. Apollo 11, homeward bound,

304
00:44:37,759 --> 00:44:44,759
is now 161,015 nautical miles out from Earth.
Velocity now 4216 feet per second. Some 3

305
00:44:49,789 --> 00:44:56,789
1/2 minutes of recorded air to ground transmissions
have accumulated during the recent Change

306
00:44:58,089 --> 00:45:05,089
of Shift Press Conference here in Apollo News
Center. Let's play that tape back now.

307
00:45:05,489 --> 00:45:10,079
SC Houston, Apollo 11.

308
00:45:10,079 --> 00:45:14,660
CAPCOM Go ahead, 11.

309
00:45:14,660 --> 00:45:21,660

SC Rog. I was just checking the radios and how is the thruster activity coming?

310
00:45:23,039 --> 00:45:27,209
CAPCOM 11, Houston. The radios are still in good shape and we are still waiting for your

311
00:45:27,209 --> 00:45:30,519
rates to decay. We got .03 degrees per second in pitch now.

312
00:45:30,519 --> 00:45:37,519
SC Okay. We're in no rush. This is a very pleasant attitude as a matter of fact, the

313
00:45:45,489 --> 00:45:50,430
sun is down in the LEB so it is not shining through the windows and heating the place

314
00:45:50,430 --> 00:45:57,430
up. We've got the Earth steady out window 1. We have the moon steadily out window 3

315
00:45:58,059 --> 00:46:05,059
and of course be are locked up on the high gain, so as long as the thermal people are

316
00:46:28,359 --> 00:46:28,410
happy, we are happy.

317
00:46:28,410 --> 00:46:28,450
CAPCOM Roger, we copy.

318
00:46:28,450 --> 00:46:29,690
CAPCOM Apollo 11, this is Houston, over.

319
00:46:29,690 --> 00:46:31,619
SC Go ahead, Houston.

320

00:46:31,619 --> 00:46:37,539
CAPCOM Okay, 11. We are about ready to start PTC. I'd like to give you some high gain

321
00:46:37,539 --> 00:46:43,380
antenna angles though. We would like to operate in the react mode and if you plan on spinning

322
00:46:43,380 --> 00:46:45,009
up in the positive or negative direction, over?

323
00:46:45,009 --> 00:46:46,789
SC We can do it either way. I had planned the positive.

324
00:46:46,789 --> 00:46:53,789
CAPCOM Okay, for positive the high gain antenna setting should be pitch plus 30, yaw 270,

325
00:46:58,539 --> 00:47:01,229
and in react, over.

326
00:47:01,229 --> 00:47:07,950
SC Understand. React pitch plus 30, yaw 270. Thank you.

327
00:47:07,950 --> 00:47:14,950
CAPCOM Roger, and if you would when you are making your DSKT entries to set up for PTC,

328
00:47:15,180 --> 00:47:22,180
go a little slower and we will try to follow each entry from down here. Over.

329
00:47:24,579 --> 00:47:29,779
SC Roger that.

330
00:47:29,779 --> 00:47:36,779
SC Houston, 11. PTC established.

331
00:47:38,459 --> 00:47:43,660
CAPCOM Roger, 11.

332
00:47:43,660 --> 00:47:50,660
CAPCOM 11, Houston. We observed that PTC is fairly well established here and we'll keep

333
00:47:55,789 --> 00:48:00,440
you posted on how it's going and your friendly white team commentator is taking over now.

334
00:48:00,440 --> 00:48:01,519
CAPCOM That was the green team.

335
00:48:01,519 --> 00:48:06,869
SC Correction, all your green team – correction green team. Excuse me.

336
00:48:06,869 --> 00:48:08,329
CAPCOM Roger, out.

337
00:48:08,329 --> 00:48:15,329
SC How could I forget! I used to be a green one.

338
00:48:18,880 --> 00:48:25,880
CAPCOM Hello Apollo 11, Houston. Your white team is now on. We're standing by for an exciting

339
00:48:28,839 --> 00:48:35,839
evening of TV and a pre-sleep report, over.

340
00:48:45,349 --> 00:48:52,349
CAPCOM Apollo 11, Houston. Are you sure you don't have anybody else in there with you?

341
00:49:28,569 --> 00:49:35,569
SC Houston, Apollo 11. Say again, please.

342
00:49:41,469 --> 00:49:48,469
CAPCOM We had some strange noises coming down
on the downlink and it sounded like you had

343
00:50:00,719 --> 00:50:02,229
some friends up there.

344
00:50:02,229 --> 00:50:09,229
SC Where, where do the white team go during
their off hours anyway?

345
00:50:23,479 --> 00:50:30,479
CAPCOM Say again.

346
00:50:30,890 --> 00:50:37,890
PAO This is Apollo Control. Still no explanation,
the weird noises emanating from Apollo 11,

347
00:50:41,979 --> 00:50:48,099
if indeed it is from Apollo 11. And it's reported
from network that it's being received on the

348
00:50:48,099 --> 00:50:55,099
downlink at two different stations in the
Manned Space Flight Network. Perhaps it will

349
00:50:56,039 --> 00:51:03,039
all shake out later in the mission as to what
these strange noises are. We'll come back

350
00:51:03,599 --> 00:51:10,599
up again as conversation is resumed with Apollo
11 now 160,410 nautical miles out from Earth

351
00:51:14,289 --> 00:51:21,289
traveling at 4228 feet per second. At 154
hours, 5 minutes ground elapsed time this

352

00:51:22,339 --> 00:51:26,400
is Apollo Control.

353
00:51:26,400 --> 00:51:33,400
PAO This is Apollo Control 154 hours, 53 minutes
ground elapsed time. 40 hours, 9 minutes to

354
00:51:39,209 --> 00:51:46,209
entry. Apollo 11 homeward bound 158,378 nautical
miles out from Earth. Velocity now 4267 feet

355
00:51:56,719 --> 00:52:03,719
per second. We have some 3 minutes of tape
accumulated over the past half hour of minor

356
00:52:08,289 --> 00:52:14,249
conversations with the crew of Apollo 1t.
We'll roll these tapes now.

357
00:52:14,249 --> 00:52:17,650
CAPCOM Apollo 11, Houston. Over.

358
00:52:17,650 --> 00:52:19,009
SC Roger.

359
00:52:19,009 --> 00:52:26,009
CAPCOM Roger. Would you, we've lost comm with
you for about the last ten minutes. Would

360
00:52:26,089 --> 00:52:28,259
you verify that the S-band track switch is
in REACQ? Over.

361
00:52:28,259 --> 00:52:35,259
SC Negative. It's not. The last time we broke
lock, we went to AUTO and I left it there.

362
00:52:35,999 --> 00:52:36,430
Sorry.

363
00:52:36,430 --> 00:52:43,039
CAPCOM Roger. We'd like you to put it in REACQ
then monitor in about two minutes we'll be

364
00:52:43,039 --> 00:52:46,119
coming up on the high gain, would you monitor
the REACQ if it doesn't take, acquire manually?

365
00:52:46,119 --> 00:52:46,170
Over.

366
00:52:46,170 --> 00:52:47,940
SC Okay. Say again the angles you'd like?

367
00:52:47,940 --> 00:52:51,400
CAPCOM We'll try to switch it ourselves. Stand
by on the angles.

368
00:52:51,400 --> 00:52:53,699
CAPCOM Buzz, it's Pitch plus 30 yaw 270. Over.

369
00:52:53,699 --> 00:52:55,739
SC Roger, I've got them, Capcom. Thank you.

370
00:52:55,739 --> 00:52:59,049
CAPCOM Hello Apollo I1, Houston. Would you
please terminate battery charge now? Over.

371
00:52:59,049 --> 00:53:00,329
SC Roger. Terminating battery chargers.

372
00:53:00,329 --> 00:53:00,829
CAPCOM Roger.

373
00:53:00,829 --> 00:53:04,880
CAPCOM Hello Apollo i1, Houston. Any special
attitude you'd like us to look at for the

374

00:53:04,880 --> 00:53:08,239
TV? Over.

375
00:53:08,239 --> 00:53:15,239
SC I don't guess we have a requirement to
(garbled).

376
00:53:20,739 --> 00:53:27,739
CAPCOM Roger. We have an attitude that we
can get the Earth out of a window or the moon.

377
00:53:54,479 --> 00:53:59,009
We're trying to look at, find that we can
get both if that's what you'd like. Over.

378
00:53:59,009 --> 00:54:03,069
SC A 50 degree roll attitude would probably
give us that, Joe.

379
00:54:03,069 --> 00:54:03,489
CAPCOM Roger.

380
00:54:03,489 --> 00:54:10,489
SC That's a good one because it puts the earth
out window 1 and the moon out window 3 and

381
00:54:12,079 --> 00:54:19,079
puts the sun down the LEB so the lighting
in here remains rather constant.

382
00:54:30,769 --> 00:54:37,769
CAPCOM Rog. Well, we'll just stop on the 50
roll then and we'll give you the word when

383
00:54:42,329 --> 00:54:46,920
to do that. Over.

384
00:54:46,920 --> 00:54:49,209
SC Okay.

385
00:54:49,209 --> 00:54:56,209
PAO This is Apollo Control. That completes
the accumulation of air to ground communications

386
00:54:56,390 --> 00:55:03,390
by means of tape recordings on the last half
hour or so. It's quiet right now. No conversation

387
00:55:06,869 --> 00:55:13,869
going on between Spacecraft Communicator Charlie
Duke and the crew of Apollo 11. And at 154

388
00:55:14,779 --> 00:55:21,779
hours 57 minutes ground elapsed time this
is Apollo Control.

389
00:55:26,469 --> 00:55:33,469
PAO This is Apollo Control, 155 hours, 27
minutes ground elapsed time. Coming up now

390
00:55:42,309 --> 00:55:49,309
about 3 minutes away from tonight's television
pass. It'll be through the 85-foot antenna

391
00:55:51,859 --> 00:55:58,859
at the Goldstone tracking station. The 210
foot dish out there is tied up tracking one

392
00:56:01,509 --> 00:56:08,509
of the Mars fly-by missions. We have some
20 seconds of tape accumulated. We'll play

393
00:56:10,180 --> 00:56:13,009
that back and rejoin the conversation line.

394
00:56:13,009 --> 00:56:19,989
CAPCOM Apollo 11, Houston. We'll have high
gain coverage about 155:30. At that time,

395

00:56:19,989 --> 00:56:26,989
you can turn on the TV if you desire and continue
your roll around until you get

396
00:56:30,890 --> 00:56:34,589
50 degrees roll. Over.

397
00:56:34,589 --> 00:56:41,589
CAPCOM Apollo 11, Houston. We were going to
give you the all-star game tonight, but it

398
00:56:45,609 --> 00:56:52,609
was rained out. Over.

399
00:56:52,749 --> 00:56:59,749
SC Sorry to hear that.

400
00:57:01,680 --> 00:57:08,680
CAPCOM 11, Houston. We're on the high gain.
You can warm up the SM if you like. Over.

401
00:57:23,209 --> 00:57:30,209
PAO This is Apollo Control still standing
by for the incoming television signal from

402
00:57:31,019 --> 00:57:38,019
Columbia. Still nothing but the color bar
test pattern as of now. Continuing

403
00:57:42,009 --> 00:57:48,439
to stand by on air to ground and television
links.

404
00:57:48,439 --> 00:57:55,439
CAPCOM Apollo 11, Houston. We see you coming
up on 50 roll. How does that attitude look?

405
00:57:56,459 --> 00:57:56,880
Over.

406
00:57:56,880 --> 00:58:03,880
CAPCOM Apollo 11, Houston. We're ready for
the TV. We're all configured. At your convenience.

407
00:58:05,209 --> 00:58:05,979
Over.

408
00:58:05,979 --> 00:58:12,979
PAO This is Apollo Control. While we're waiting
for the television pictures to come in, we

409
00:58:15,239 --> 00:58:21,989
have in the control room here a vase full
of long-stemmed red roses, the card saying,

410
00:58:21,989 --> 00:58:28,989
"To one and all concerned. Job superbly done.
From a moonstruck Canadian." Continuing to

411
00:58:32,749 --> 00:58:39,609
stand by as we wait for the pictures to come
from Columbia. Here they come.

412
00:58:39,609 --> 00:58:43,289
SC Houston, Apollo 11. Over.

413
00:58:43,289 --> 00:58:46,219
CAPCOM Roger. Go ahead, 11. Over.

414
00:58:46,219 --> 00:58:49,910
SC Are you picking up our TV signal?

415
00:58:49,910 --> 00:58:55,829
CAPCOM That's affirmative. We have it up on
the eidophor now. The focus is a little bit

416
00:58:55,829 --> 00:59:00,809
out. We see the Earth in the center of the
screen, still have a little white dot in

417
00:59:00,809 --> 00:59:07,019
the bottom of the camera apparently, and see some land masses in the center. At least,

418
00:59:07,019 --> 00:59:09,239
I guess that's what it is. It's very hazy at this time on our eidophor. Over.

419
00:59:09,239 --> 00:59:10,479
SC Let me change, believe that's where we just came from.

420
00:59:10,479 --> 00:59:17,479
CAPCOM It is, huh? Well, I'm really looking at the bad, at a bad screen here. Stand by

421
00:59:24,749 --> 00:59:28,219
one. Hey, you're right.

422
00:59:28,219 --> 00:59:33,430
SC It's not bad enough (garbled).

423
00:59:33,430 --> 00:59:35,170
CAPCOM What?

424
00:59:35,170 --> 00:59:42,170
SC I said it's not bad enough about finding the right landing spot. We weren’t looking

425
00:59:45,039 --> 00:59:50,769
at the right planet.

426
00:59:50,769 --> 00:59:52,959
CAPCOM I'll never live that one down.

427
00:59:52,959 --> 00:59:59,959
SC We're making it get smaller and smaller here to make sure that it really is the one

428
01:00:05,439 --> 01:00:06,069
leaving.

429
01:00:06,069 --> 01:00:09,229
CAPCOM That's enough, you guys.

430
01:00:09,229 --> 01:00:16,229
CAPCOM Eleven, that was a good picture there.

431
01:00:24,670 --> 01:00:27,630
SC Okay, that's enough of the moon.

432
01:00:27,630 --> 01:00:34,630
SC Okay, that's enough of the moon, Charlie.
We're getting set up for some inside pictures.

433
01:00:38,999 --> 01:00:43,849
CAPCOM Right.

434
01:00:43,849 --> 01:00:50,849
SC We've know there’s a lot of scientists
from a number of countries standing by to

435
01:01:01,130 --> 01:01:06,009
see the lunar samples and we thought you'd
be interested in seeing that they really are

436
01:01:06,009 --> 01:01:13,009
here. These two boxes are the sample return
containers. They're vacuum packed containers

437
01:01:19,239 --> 01:01:25,069
that were closed in a vacuum on the lunar
surface, sealed and then brought inside the

438
01:01:25,069 --> 01:01:32,069
LM and then put inside these fiberglass bags,
zippered and resealed around the outside,

439
01:01:35,039 --> 01:01:42,039
and placed in these receptacles in the side
of the command module. These are the two boxes

440
01:01:45,489 --> 01:01:52,489
and as soon as we get onto the ship I'm sure
these boxes will immediately be transferred

441
01:01:54,989 --> 01:02:01,989
and delivery started to the Lunar Receiving
Laboratory. These boxes include the samples

442
01:02:04,660 --> 01:02:11,660
of the various types of rock. The ground mass
is the soil, the sand and silt and the particle

443
01:02:15,499 --> 01:02:22,499
collector for the solar wind experiment and
the core tubes that took depth samples of

444
01:02:23,199 --> 01:02:25,099
the lunar surface.

445
01:02:25,099 --> 01:02:31,609
CAPCOM Roger. Neil, thank you much for that
description. We've got a pretty dark picture

446
01:02:31,609 --> 01:02:36,009
down here could you set your F-stop? We'd
like to have it, see if you can open it up

447
01:02:36,009 --> 01:02:37,400
a little bit, over.

448
01:02:37,400 --> 01:02:41,949
SC Okay, our monitor showed that to be very
bright.

449

01:02:41,949 --> 01:02:48,779
SC We're down between, well, around F4 which
we thought would be plenty right. We'll

450
01:02:48,779 --> 01:02:51,049
lighten it up some more.

451
01:02:51,049 --> 01:02:56,569
CAPCOM Well, we'd appreciate it. It's pretty
dark on all our monitors here.

452
01:02:56,569 --> 01:03:00,160
SC Okay, fine.

453
01:03:00,160 --> 01:03:07,160
CAPCOM That's looking a lot better now, Neil.

454
01:03:12,429 --> 01:03:19,429
CAPCOM There's Buzz.

455
01:03:23,949 --> 01:03:30,949
CAPCOM 11 Houston, we have an excellent picture
now, over.

456
01:03:35,959 --> 01:03:36,119
SC Okay, how do you read me, Charlie?

457
01:03:36,119 --> 01:03:36,239
CAPCOM 5 by now, Buzz, over.

458
01:03:36,239 --> 01:03:43,239
SC Okay. The more mundane affairs, now that
we've touched the moon, I'd like to trace

459
01:03:52,799 --> 01:03:57,969
through a little bit for you the developments
that have taken place in the food department.

460
01:03:57,969 --> 01:04:04,969

I'm sure you've already seen this type of
a drink container. A little later Mike will

461
01:04:07,449 --> 01:04:14,449
show you how the water gun operates with its
new filter to take out the hydrogen. Essentially

462
01:04:16,059 --> 01:04:21,910
this water gun is put in this hand and filled
up this bag with water and the drink then

463
01:04:21,910 --> 01:04:28,910
dissolves in the water and this end of the
out feeding. Likewise we have other foods

464
01:04:32,489 --> 01:04:37,969
that are more solid nature. You can probably
see this shrimp cocktail meal, this afternoon,

465
01:04:37,969 --> 01:04:44,969
while the two of us had salmon salad. Another
early development was the use of bite size

466
01:04:54,079 --> 01:04:54,890
food.

467
01:04:54,890 --> 01:05:01,890
CAPCOM Eleven, Houston, Buzz, you're breaking
up badly, will you check your vox, over.

468
01:05:04,299 --> 01:05:09,640
SC Roger, how am I coming through now, Charlie?

469
01:05:09,640 --> 01:05:16,489
CAPCOM You're very clear when you come through.
It's just that your vox is not keying at every

470
01:05:16,489 --> 01:05:17,729
word, over.

471
01:05:17,729 --> 01:05:24,729
SC Okay. These bite size objects were designed
to remove the problem of having so many crumbs

472
01:05:26,150 --> 01:05:31,049
floating around in the cabin so they designed
a particular size that would be able to go

473
01:05:31,049 --> 01:05:36,890
into the mouth all at once. I think since
all of our experience we've discovered that

474
01:05:36,890 --> 01:05:42,239
we can progress a good bit further than that
back to some of the type meals that we have

475
01:05:42,239 --> 01:05:49,239
on Earth. As a matter of fact on this flight
we've carried along pieces of bread and along

476
01:05:49,759 --> 01:05:56,759
with the bread we have a ham spread and I'll
show you, I hope, how easy it is to spread

477
01:05:58,380 --> 01:06:05,380
some ham, while I'm in zero g. I think we've
discovered

478
01:06:13,660 --> 01:06:20,660
that it is quite easy to…you're all very
familiar with.

479
01:06:50,559 --> 01:06:57,559
CAPCOM Apollo 11, Houston. We notice your
roil rate increasing. Will you please see

480
01:07:08,249 --> 01:07:15,249
if you can bring that down to about 04 so
we'll be losing a high gain shortly? Over,

481
01:07:16,039 --> 01:07:23,039
SC You can also use zero gravity to demonstrate
many things that we've all learned in school.

482
01:07:30,839 --> 01:07:37,259
I'd like to demonstrate briefly how easy it
is to explain the action

483
01:07:37,259 --> 01:07:44,229
of the gyroscope. If I spin this can we know
that according to the equations of motion

484
01:07:44,229 --> 01:07:49,859
that we would expect that it, once this is
given a spin about, and has a spin axis in

485
01:07:49,859 --> 01:07:54,949
this direction, if we give it a particular
torque, and if, I'll do this by pushing my

486
01:07:54,949 --> 01:07:57,729
hand against
it in this fashion once its spinning, by the

487
01:07:57,729 --> 01:08:04,729
equations we can predict, that if I put this
torque on it, it will in fact rotate this

488
01:08:04,969 --> 01:08:11,969
direction. Let's see how well this works out.
See if I apply the torque this way, its rotated

489
01:08:21,460 --> 01:08:26,880
this way.

490
01:08:26,880 --> 01:08:33,880
SC Too close, I think?

491
01:08:40,420 --> 01:08:47,420

CAPCOM 11, Houston. It's a pretty good demonstration.

492
01:08:55,530 --> 01:09:02,530
SC Houston this next is a little demonstration
for the kids at home, all kids everywhere

493
01:09:10,210 --> 01:09:16,490
for that matter. I was going to show you how
you drink water out of a spoon but I'm afraid

494
01:09:16,490 --> 01:09:22,450
I fill the spoon too full and if I'm not careful,
I'm going to spill water right over the sides.

495
01:09:22,450 --> 01:09:27,790
Can you, can you see the water slopping around
on the top of the spoon, kids?

496
01:09:27,790 --> 01:09:30,280
CAPCOM That's affirmative, 11.

497
01:09:30,280 --> 01:09:36,020
SC Okay, well as I said, I was going to tell
you but I'm afraid I filled it too far and

498
01:09:36,020 --> 01:09:42,490
its going to spill over the sides. I'll tell
you what. I'll just, I just turn this one

499
01:09:42,490 --> 01:09:47,920
over and give me the water and start all over
again. Okay?

500
01:09:47,920 --> 01:09:49,299
CAPCOM Okay.

501
01:09:49,299 --> 01:09:56,299
SC And you can see, up here we don't know
where over is. One up is as good as another

502
01:10:07,160 --> 01:10:14,160
and that really is water, I tell you.

503
01:10:23,640 --> 01:10:25,460
SC That's really not the way we drink. We
really have a water gun which I'll show you.

504
01:10:25,460 --> 01:10:32,460
Here's the water gun. This cylindrical thing
on the end of it is a filter with several

505
01:10:39,270 --> 01:10:45,520
membranes. One allows water to pass but not
any gas; the other allows gas to pass but

506
01:10:45,520 --> 01:10:52,520
not any water so by routing the gaseous water,
which comes from our tank, through the filter

507
01:10:52,850 --> 01:10:59,020
we're able to drink purified water without
the gas in it, filtered water. And of course

508
01:10:59,020 --> 01:11:06,020
all we do to get it started is just pull the
trigger. It's sort of massy. I haven't been

509
01:11:12,620 --> 01:11:19,620
at this very long. It's the same system that
the Spaniards used to drink at a wine stand

510
01:11:24,980 --> 01:11:28,620
at the bull fights, only I think it'd be more
fun.

511
01:11:28,620 --> 01:11:30,820
SC We'll be seeing you, kids.

512
01:11:30,820 --> 01:11:37,820

CAPCOM Thank you from all us kids in the world here in the MOCR, who can't tell the Earth

513
01:11:39,690 --> 01:11:43,820
from the moon.

514
01:11:43,820 --> 01:11:50,820
SC Roger. Stand by one and we'll get you that (garbled).

515
01:11:51,260 --> 01:11:58,260
CAPCOM Looks like you need a wine skin up there, Mike.

516
01:12:19,920 --> 01:12:26,920
SC That’d be nice.

517
01:12:40,640 --> 01:12:47,640
SC Okay. 11, Houston. You have a picture now, Houston?

518
01:13:14,450 --> 01:13:18,600
CAPCOM That's affirmative. I refuse to bite on this one though. You tell us.

519
01:13:18,600 --> 01:13:25,600
SC Okay. This should be getting larger and if it is the place we're coming up to.

520
01:13:38,220 --> 01:13:43,270
CAPCOM Roger.

521
01:13:43,270 --> 01:13:50,270
SC No matter where you travel, it's always nice to get home.