



1  
00:00:03,169 --> 00:00:10,169  
CAPCOM Apollo 11, this is Houston. Over

2  
00:00:43,620 --> 00:00:50,620  
SC Roger. Go ahead Houston, Apollo 11.

3  
00:01:24,070 --> 00:01:31,070  
CAPCOM 11, this is Houston. You are GO for  
LOI. Over.

4  
00:02:13,110 --> 00:02:18,680  
SC GO for LOI.

5  
00:02:18,680 --> 00:02:25,680  
CAPCOM Apollo 11, this is Houston. All your  
systems are looking good. Going around the

6  
00:02:59,980 --> 00:03:06,980  
corner. We'll see you on the other side.  
Over.

7  
00:03:24,760 --> 00:03:30,260  
SC Roger.

8  
00:03:30,260 --> 00:03:37,260  
SC Everything looks okay up here.

9  
00:03:46,780 --> 00:03:53,780  
CAPCOM Roger, out.

10  
00:03:55,040 --> 00:04:02,040  
PAO And we've had loss of signal as Apollo  
11 goes behind the moon.

11  
00:04:28,500 --> 00:04:29,830  
PAO Madrid, AOS. Madrid AOS.

12  
00:04:29,830 --> 00:04:31,420

SC (Spacecraft signal very weak – inaudible).

13

00:04:31,420 --> 00:04:36,660

CAPCOM Roger, reading you the same now. Could you repeat your burn status report. We copied

14

00:04:36,660 --> 00:04:40,830

the residuals and burn time and that was about it. Send the whole thing again please.

15

00:04:40,830 --> 00:04:47,830

SC It was like, it was like perfect. DELTA T 0, burn time 557, ten values on the angles,

16

00:04:48,420 --> 00:04:55,420

BGX minus .1, BGY minus .1, BGZ plus .1, no trim, minus 6.8 on DELTA VC,

17

00:04:56,110 --> 00:05:03,110

fuel was 38.8, OX 39.0 plus 50 on balance, we ran an increase on the PUGS, NOUN 44, show

18

00:05:09,230 --> 00:05:15,310

us in a 60.9 by 169.9.

19

00:05:15,310 --> 00:05:22,310

CAPCOM Roger. We copy your burn status report.

20

00:05:23,150 --> 00:05:30,150

CAPCOM We're getting a beautiful picture in down here now 11. The color's coming

21

00:05:35,120 --> 00:05:42,120

in quite clearly and we can see the horizon and the outer blankness of space and without

22

00:05:58,260 --> 00:06:05,260

getting into the question of grays and browns it looks, at least on our monitor, sort of

23

00:06:20,340 --> 00:06:20,720

a brownish/gray.

24

00:06:20,720 --> 00:06:27,720

SC (garbled) the way they're describing  
it. It appears to me as though it made a difference

25

00:06:41,060 --> 00:06:47,350

just sitting back in the, in the tunnel and  
gazing at all windows, it makes a difference

26

00:06:47,350 --> 00:06:52,960

which one you're looking out of. For example,  
the camera right now is looking out the Number

27

00:06:52,960 --> 00:06:59,960

5 window and it currently gives a rosier or  
tanner tinge, especially when you look straight

28

00:07:00,430 --> 00:07:06,220

through it and not, not at an angle. Over.

29

00:07:06,220 --> 00:07:07,500

CAPCOM Roger.

30

00:07:07,500 --> 00:07:14,500

Yah, the crater that's in the center of  
the screen now is Webb. We'll be looking

31

00:07:37,980 --> 00:07:44,980

straight down on it at about six minutes before  
power descent. It has a relatively flat bottom

32

00:07:52,670 --> 00:07:59,670

to the crater and you can see maybe two or  
three craters that are in the bottom of it.

33

00:08:02,720 --> 00:08:09,720

On the western wall, the wall that's now

nearest to the camera, near the bottom of

34  
00:08:12,430 --> 00:08:19,430  
the screen, we can see dimples there just  
on the outside. And then coming back towards

35  
00:08:21,560 --> 00:08:28,560  
the bottom of the screen and to the left,  
you can see a series of depressions. It's

36  
00:08:38,959 --> 00:08:45,959  
this type of connective craters that give  
us most interest to, to discover why they're

37  
00:08:48,879 --> 00:08:54,329  
in the particular patterns that they're  
in. I'll zoom the camera in and try to give

38  
00:08:54,329 --> 00:08:57,230  
you a little closer look at this

39  
00:08:57,230 --> 00:09:04,230  
CAPCOM Roger. We're observing the dimpled  
crater now. The central peak that we can see

40  
00:09:10,649 --> 00:09:14,939  
on the orbital photos doesn't seem to stand  
out very well here.

41  
00:09:14,939 --> 00:09:18,699  
SC They're not central peaks. They're  
depressions in the center.

42  
00:09:18,699 --> 00:09:25,699  
SC Eagle, Houston, we look good through the  
210. We're going to shift data select to

43  
00:09:29,420 --> 00:09:36,420  
an 85 foot dish to see what we got and then  
we'll be back to you on the 210 if you'll

44  
00:09:42,680 --> 00:09:49,680  
stand by in a couple of minutes in this mode,  
we'll be back with you. Over.

45  
00:09:55,529 --> 00:09:59,550  
CAPCOM Roger, Eagle. Standing by.

46  
00:09:59,550 --> 00:10:06,550  
PAO This is Apollo Control Houston. 83 hours  
21 minutes

47  
00:10:07,579 --> 00:10:11,600  
EAGLE Roger. Eagle standing by.

48  
00:10:11,600 --> 00:10:18,600  
PAO This is Apollo Control, Houston. 83 hours,  
21 minutes are now in to the flight. Meanwhile,

49  
00:10:28,449 --> 00:10:35,449  
aboard the Eagle, apparently it's Buzz Aldrin  
and Nell Armstrong,

50  
00:10:35,620 --> 00:10:41,660  
although Buzz is doing most of the comm check  
at this time.

51  
00:10:41,660 --> 00:10:45,560  
CAPCOM Eagle, Houston. How do you read? Over.

52  
00:10:45,560 --> 00:10:51,529  
EAGLE Houston, Eagle. Read you loud and clear.  
Over.

53  
00:10:51,529 --> 00:10:58,529  
CAPCOM Roger. We're reading you 5 by. We've  
got the voice good through the 85, the telemetry

54  
00:11:01,699 --> 00:11:08,699

is in and out through the 85. Stand by, we'll  
be

55

00:11:22,779 --> 00:11:27,350  
back with you through the 210. Over.

56

00:11:27,350 --> 00:11:34,350  
CAPCOM Eagle, Houston. You can go step 5 now.  
We'd like low bit rate. Over.

57

00:11:37,600 --> 00:11:42,379  
EAGLE Houston, Eagle. Yes, low bit rate.

58

00:11:42,379 --> 00:11:45,110  
CAPCOM Roger copy, Eagle.

59

00:11:45,110 --> 00:11:52,110  
CAPCOM Eagle, Houston. Could you give me a  
short count - this mode. Over.

60

00:11:53,120 --> 00:12:00,120  
EAGLE Houston, this is Eagle with a short  
count. 1 2 3 4 5. 5 4 3 2 1. Eagle over.

61

00:12:06,600 --> 00:12:13,600  
CAPCOM Roger, Eagle. You're 5 by. This S-band  
voice is really beautiful. Over.

62

00:12:14,949 --> 00:12:21,139  
CAPCOM And Eagle, Houston. We'll be standing  
by this mode for a minute or so. We'll be

63

00:12:21,139 --> 00:12:24,620  
back with you if you'll just stand by. Over.

64

00:12:24,620 --> 00:12:25,470  
EAGLE Roger.

65

00:12:25,470 --> 00:12:30,769

CAPCOM Eagle, this is Houston coming through 210. How do you read? Over.

66

00:12:30,769 --> 00:12:33,180

EAGLE Roger. You're loud and clear.

67

00:12:33,180 --> 00:12:40,180

CAPCOM Eagle, this is Houston. We're happy with all our data and all modes. You can power

68

00:12:41,860 --> 00:12:47,800

down to comm flow. Over.

69

00:12:47,800 --> 00:12:54,800

EAGLE Roger. I understand. Eagle will power down to comm and we are just approaching 27

70

00:13:14,040 --> 00:13:21,040

volts now. It looks like we won't have to bother with the high

71

00:13:39,860 --> 00:13:40,209

dap.

72

00:13:40,209 --> 00:13:41,240

CAP COM Rog.

73

00:13:41,240 --> 00:13:42,959

EAGLE We're powering down. Out.

74

00:13:42,959 --> 00:13:44,339

CAPCOM Roger. Copy. Out.

75

00:13:44,339 --> 00:13:50,189

CAPCOM Houston, we got a TEI 11 pad for you and an update on the water dump. Over.

76

00:13:50,189 --> 00:13:57,189

EAGLE Stand by 1, Houston. Are you through

with the DSKY?

77

00:13:57,209 --> 00:14:04,209

CAPCOM That's affirm. Over.

78

00:14:06,689 --> 00:14:11,430

EAGLE Okay.

79

00:14:11,430 --> 00:14:18,430

PAO This is Apollo Control, Houston. 83 hours and 27 minutes now into the flight of Apollo

80

00:14:19,800 --> 00:14:25,360

11. That last exchange between Charlie Duke, our capsule communicator and Buzz Aldrin,

81

00:14:25,360 --> 00:14:31,999

aboard the Eagle, identifying that we're very well satisfied with the communications check

82

00:14:31,999 --> 00:14:34,089

on the lunar module and will proceed with powering down the spacecraft. At 83 hours

83

00:14:34,089 --> 00:14:38,180

27 minutes, we now read an altitude of 54.3 nautical miles, a velocity of 5,376 feet per

84

00:14:38,180 --> 00:14:40,339

second. This is Apollo Control, Houston.

85

00:14:40,339 --> 00:14:44,680

COLUMBIA Houston, Columbia. Ready to copy TEI 11. Over.

86

00:14:44,680 --> 00:14:50,999

CAPCOM Rog, Columbia. Here we come with the TEI 11. SPS G&N, 37200 minus 060 plus 047.

87

00:14:50,999 --> 00:14:56,899  
NOUN 33, 098, 05, 2422, plus 41448 plus 03719  
minus 02422. Roll is NA, pitch 020, the rest

88  
00:14:56,899 --> 00:14:57,040  
of the pad is NA. Set stars are NA. The ullage  
is 2 quads, correction, 2 jets for 16 seconds.

89  
00:14:57,040 --> 00:14:58,649  
TEI 11 is undocked. Present onboard weight  
of the CSM is 37200 pounds. About 50 Alpha

90  
00:14:58,649 --> 00:14:58,660  
on your dap. Over.

91  
00:14:58,660 --> 00:14:58,709  
COLUMBIA Alright. I read back. TEI 11 SPS  
G&N, 37200 minus 060 plus 047 plus 098, 052422

92  
00:14:58,709 --> 00:14:58,749  
plus 41448 plus 03719 minus 02422, NA 020,  
the rest of the pad NA,

93  
00:14:58,749 --> 00:14:59,369  
ullage two jets for 60 seconds, quads B and  
D. Undock present CSM weight is okay in the

94  
00:14:59,369 --> 00:14:59,430  
dap.

95  
00:14:59,430 --> 00:15:00,430  
CAPCOM Roger, 11, and we'd like you to do  
a waste water dump at 84 hours down to 25

96  
00:15:00,430 --> 00:15:00,490  
percent. Over.

97  
00:15:00,490 --> 00:15:00,920  
COLUMBIA Roger, I understand. Waste water  
dump to 25 percent at 84 hours.

98  
00:15:00,920 --> 00:15:01,480  
CAPCOM Roger. And Mike, we'll have LOS in about 11 minutes at 83:44. AOS is 84:30, and

99  
00:15:01,480 --> 00:15:03,100  
prior CAPCOM to - or at LOS, we would like you to go configure the S-band for high gain

100  
00:15:03,100 --> 00:15:05,499  
track to react, high gain beam to narrow, and let's try that to see if we

101  
00:15:05,499 --> 00:15:06,990  
can get an automatic react at the next AOS. Over.

102  
00:15:06,990 --> 00:15:07,439  
COLUMBIA Good idea.

103  
00:15:07,439 --> 00:15:09,240  
PAO That was Mike Collins, aboard Columbia, taking down a maneuver pad.

104  
00:15:09,240 --> 00:15:09,540  
COLUMBIA Rog.

105  
00:15:09,540 --> 00:15:12,249  
CAPCOM Apollo 11, Houston. Also that water that you got on the APS bulkhead, we - if

106  
00:15:12,249 --> 00:15:13,860  
it's not too much, we Just recommend sopping it up and then throwing the sponges away in

107  
00:15:13,860 --> 00:15:15,410  
the waste stowage area. If it's too much, then we recommend using the procedure in the

108

00:15:15,410 --> 00:15:15,990  
checklist on page F 10-14. Over.

109

00:15:15,990 --> 00:15:17,550  
SC Alright. Thank you.  
PAO This is Apollo Control, Houston. 83 hours

110

00:15:17,550 --> 00:15:19,110  
34 minutes now into the flight of Apollo 11.  
The lunar module communications has been deactivated.

111

00:15:19,110 --> 00:15:19,279  
We currently show a velocity of 5,377 feet  
per second. Our orbital parameters now read

112

00:15:19,279 --> 00:15:19,439  
At 84 hours 35 minutes continuing to follow,  
this is Apollo Control, Houston.

113

00:15:19,439 --> 00:15:20,170  
CAPCOM Apollo 11 Houston, would you have Buzz  
make sure he gives us the OPS pressure reading

114

00:15:20,170 --> 00:15:20,619  
before you close up, over.

115

00:15:20,619 --> 00:15:21,730  
COLUMBIA Will do.

116

00:15:21,730 --> 00:15:25,910  
SC Houston 11, the OPS read 57 50 both bottles.

117

00:15:25,910 --> 00:15:26,749  
CAPCOM Roger.

118

00:15:26,749 --> 00:15:29,779  
PAO This is Apollo Control, Houston 83 hours  
38 minutes. Apollo 11 now on CSM power.

119

00:15:29,779 --> 00:15:33,839

PAO This is Apollo Control, Houston, 83 hours  
40 minutes now into the flight of Apollo 11.

120

00:15:33,839 --> 00:15:40,839

We're less than 4 minutes away now from time  
of loss of signal with the Apollo 11 spacecraft.

121

00:15:44,579 --> 00:15:51,579

At the present time, our velocity reading,  
53 hundred and 75 feet per second. Our total

122

00:15:55,129 --> 00:16:02,129

weight in orbit at this time, reading 70 thousand  
500 and 2 pounds. Our orbital parameter's

123

00:16:04,009 --> 00:16:11,009

epilune is 65.1 nautical miles perilune 54.2  
nautical miles. This is Apollo Control, Houston.

124

00:16:22,920 --> 00:16:29,920

PAO This is Apollo Control, Houston at 83  
hours 43 minutes now into the flight of Apollo

125

00:16:33,410 --> 00:16:39,429

11. Less than a minute away from predicted  
time of loss of signal with the Apollo 11

126

00:16:39,429 --> 00:16:46,429

spacecraft. We expect the next time we acquire  
Apollo 11, its crew, Nell Armstrong, Mike

127

00:16:47,329 --> 00:16:54,329

Collins, and Buzz Aldrin, will have begun  
their rest period. And at

128

00:16:55,410 --> 00:17:01,860

83 hours 43 minutes this is Apollo Control,  
Houston.

129

00:17:01,860 --> 00:17:08,860

PAO Apollo 11 has passed out of range with the ground, traversing now over the far side

130

00:17:13,490 --> 00:17:20,490

of the Moon. During this pass, we had an extremely successful communications checkout with the

131

00:17:22,520 --> 00:17:29,520

lunar module using its code name for the first time. Its code name of the Eagle. Buzz Aldrin

132

00:17:29,720 --> 00:17:35,910

performed the counting tasks in concert with Charlie Duke, the capsule communicator here

133

00:17:35,910 --> 00:17:42,910

on the ground, and at times Buzz's – Buzz's voice, we noted considerable enthusiasm for

134

00:17:44,050 --> 00:17:51,050

the way things are going, and at times Charlie Duke shared that enthusiasm and its maiden

135

00:17:53,750 --> 00:18:00,750

checkout in communications, the lunar module Eagle, looked good. At 83 hours 45 minutes,

136

00:18:05,670 --> 00:18:11,850

this is Apollo Control, Houston.

137

00:18:11,850 --> 00:18:18,850

PAO This is Apollo Control, Houston, at 84 hours and 28 minutes now into the flight of

138

00:18:20,330 --> 00:18:26,430

Apollo 11. We're less than 2 minutes away now from our scheduled time of

139

00:18:26,430 --> 00:18:33,430

acquisition with Apollo 11. Meanwhile in Mission Control Center, Astronaut Owen Garriott has

140  
00:18:35,120 --> 00:18:42,120  
now replaced Charlie Duke as our Capsule Communicator. We expect that some final advisories will

141  
00:18:44,840 --> 00:18:51,840  
be passed to the Apollo 11 crew, and final report says such as crew status will be received

142  
00:18:54,410 --> 00:19:01,410  
from Nell Armstrong, Mike Collins, and Buzz Aldrin prior to the start of their sleep period.

143  
00:19:01,880 --> 00:19:07,610  
A little over - we're a little over a minute away now from scheduled time of acquisition.

144  
00:19:07,610 --> 00:19:14,610  
We'll continue to keep the line-up and continue to monitor. This is Apollo Control, Houston.

145  
00:19:24,390 --> 00:19:31,390  
PAO Mark 30 seconds now from time of scheduled acquisition.

146  
00:19:49,640 --> 00:19:56,640  
PAO Mark 20 seconds. 10 seconds. We should be acquiring shortly and we're standing by.

147  
00:20:29,550 --> 00:20:36,550  
PAO We have data - we've acquired data on Apollo 11.

148  
00:21:15,350 --> 00:21:19,920  
PAO This is Apollo Control, Houston. Owen Garriott getting ready to place a call.

149  
00:21:19,920 --> 00:21:21,790

CAPCOM Over.

150

00:21:21,790 --> 00:21:25,520

SC Houston, Apollo 11.

151

00:21:25,520 --> 00:21:31,960

CAPCOM 11, Houston. Roger. Reading you fine, and it looks like the automatic REACT went

152

00:21:31,960 --> 00:21:37,350

very well just because-you came around the LM. We have several small items to discuss

153

00:21:37,350 --> 00:21:40,800

with you here just before you go to sleep.

Over.

154

00:21:40,800 --> 00:21:44,600

SC Go ahead. Over.

155

00:21:44,600 --> 00:21:51,600

CAPCOM Okay, 11. First of all, on our LM systems checks. Everything went fine. I would like

156

00:21:53,960 --> 00:22:00,010

to remind you though tomorrow you may see an ascent pressure light when you activate

157

00:22:00,010 --> 00:22:06,660

the MC and W. There should be no problem, however. You did note that the AP - OP tank

158

00:22:06,660 --> 00:22:13,660

pressure was only reading 111 psi, which is normal at this point, but the below the level

159

00:22:14,060 --> 00:22:18,780

which will trigger your light due to the helium which has been dissolved into the propellant.

160

00:22:18,780 --> 00:22:24,790

Over.SC Roger. Understand that. Thank you.

161

00:22:24,790 --> 00:22:31,790

CAPCOM Roger. And next item, the supercritical helium rise rate is nominal, and you also

162

00:22:34,990 --> 00:22:41,990

had that question for us about your thruster activity during the P22 on the last REV. Believe

163

00:22:42,150 --> 00:22:47,620

we understand that now, and you reported that your pitch was in ACCEL COMMAND and your yaw

164

00:22:47,620 --> 00:22:53,540

and roll were in REG COMMAND. You were firing your pitch thrusters that will couple REG

165

00:22:53,540 --> 00:23:00,540

into your yaw and roll axes, and the - you were at that time holding only half a degree

166

00:23:00,710 --> 00:23:07,710

deadband and coupling REG's into yaw and roll produced the extra firings about the yaw and

167

00:23:08,510 --> 00:23:10,100

roll axis. Over.

168

00:23:10,100 --> 00:23:17,100

SC Yes, that may be true. It's very peculiar coupling in that it waits longer than you

169

00:23:17,360 --> 00:23:24,360

would think and its reaction is greater than you would think. We were getting yaw rates

170

00:23:24,760 --> 00:23:28,990

of around four tenths of a degree per second per panel.

171

00:23:28,990 --> 00:23:34,590

CAPCOM Roger, Mike. We did play the data back and that's the way it looked upon analysis

172

00:23:34,590 --> 00:23:38,300

of the chart recordings back here. Over.

173

00:23:38,300 --> 00:23:45,300

SC Okay. Fine. They've looked at the results of your feedback tracking. The marks all apparently

174

00:23:48,450 --> 00:23:53,730

were very good and we've got a full page of data here relative to the altitudes of the

175

00:23:53,730 --> 00:23:58,420

various track locations, which I won't read up to you, but I did want to let you know

176

00:23:58,420 --> 00:24:04,920

that the marks apparently went very well. I also have your consumables budget, particularly

177

00:24:04,920 --> 00:24:11,920

your RCS propellant quantities. They're Deltas from nominal if you should want them. Your

178

00:24:12,900 --> 00:24:18,490

work quad is quad Charlie, which is 9 percent low. I'll not read up the others unless you

179

00:24:18,490 --> 00:24:20,470

want them. Over.

180

00:24:20,470 --> 00:24:27,470

SC Okay, I got the O2 fuel cell purge. You want them now?

181

00:24:31,650 --> 00:24:38,650

CAPCOM I'll have to standby. Just a moment.

182

00:24:49,840 --> 00:24:56,840

SC Okay. And then the other one is we're still charging battery A.

183

00:25:35,730 --> 00:25:39,650

CAPCOM 11, Houston. We would like to delay the fuel cell purge until the back side of

184

00:25:39,650 --> 00:25:44,800

the moon, and you go ahead and - should terminate your battery charge at this time.

185

00:25:44,800 --> 00:25:45,240

Over.

186

00:25:45,240 --> 00:25:52,240

SC Okay; understand, I knew we had another O2 and H2 purge coming up in the morning,

187

00:25:54,150 --> 00:25:56,150

I wasn't sure whether you wanted to go through with this one or not. I'll wait until the

188

00:25:56,150 --> 00:25:57,930

next side and then do it.

189

00:25:57,930 --> 00:25:59,110

CAPCOM That's fine, Buzz.

190

00:25:59,110 --> 00:26:00,590

SC Terminate battery charging now.

191

00:26:00,590 --> 00:26:06,770

CAPCOM That's right and one other systems item here - in order to balance your cryo

192

00:26:06,770 --> 00:26:13,770

tanks, would you get your O2 and tank 1 and your H2 tank 2 heaters off? Over.

193

00:26:18,880 --> 00:26:25,880

SC Okay, I have O2 tank heater 1 off, and H2 tank heater 2 off.

194

00:26:30,260 --> 00:26:37,030

CAPCOM That's right, Mike, and we believe you have your quad Bravo and quad Charlie

195

00:26:37,030 --> 00:26:41,880

turned off in your DAP at this time, and a 5 degree deadband. We'd prefer a 10

196

00:26:41,880 --> 00:26:48,240

degree deadband for your sleep period overnight here. Over.

197

00:26:48,240 --> 00:26:51,780

SC Okay.

198

00:26:51,780 --> 00:26:58,780

CAPCOM One Other item relative to a malfunction procedure. It's unlikely that you'll have

199

00:27:01,070 --> 00:27:08,070

to worry about this tomorrow, but in your malfunction list under docking on page

200

00:27:08,440 --> 00:27:15,440

FII-9 there is a malfunction procedure for a high O2 flow rate at the top - under tunnel

201

00:27:20,090 --> 00:27:27,090

at the top of page 11-9. We would like to have you not use that malfunction procedure

202

00:27:28,090 --> 00:27:35,020

should you encounter the high O2 flow rate,  
and instead check back with Houston for a

203

00:27:35,020 --> 00:27:41,180

revised procedure should you find that situation.  
Over.

204

00:27:41,180 --> 00:27:48,180

SC Understand and note has been made in my  
checklist.

205

00:27:53,120 --> 00:27:56,780

CAPCOM 11, Houston. Roger. That just about  
takes care of all the items we have here on

206

00:27:56,780 --> 00:28:03,780

the ground before time to hit the sack, and  
I guess you will have a pre-sleep check for

207

00:28:04,450 --> 00:28:11,450

us before you go to bed.

208

00:28:15,080 --> 00:28:22,080

SC Roger. We're in the midst of cycling the  
O2 and H2 fans now.

209

00:28:31,180 --> 00:28:32,020

CAPCOM Roger.

210

00:28:32,020 --> 00:28:39,020

SC And the radiation is as follows: CDR 11012  
CMP 10013 LMP 09015. Negative medication,

211

00:29:11,110 --> 00:29:14,250

over.

212

00:29:14,250 --> 00:29:21,250

CAPCOM Roger, copy 11.

213

00:29:26,810 --> 00:29:33,810

PAO This is Apollo Control, Houston. 84 hours  
39 minutes now into the flight. That conversational

214

00:29:37,200 --> 00:29:44,130

exchange with Owen Garriott - here in Mission  
Control Center and principally Buzz Aldrin;

215

00:29:44,130 --> 00:29:51,130

however, Mike Collins did talk briefly about  
Program 22, the landmark tracking activity

216

00:29:55,340 --> 00:30:01,070

in which he performed. At 84 hours 40 minutes,  
this is Apollo Control, Houston.

217

00:30:01,070 --> 00:30:08,070

SC Hey, Houston, Apollo 11.

218

00:30:14,660 --> 00:30:21,660

CAPCOM 11, Houston, go ahead.

219

00:31:17,280 --> 00:31:24,280

SC Roger. We're thinking about taking the  
monocular with us on into the LM. We think

220

00:32:12,240 --> 00:32:15,390

it might prove to be of some use, over.

221

00:32:15,390 --> 00:32:21,110

CAPCOM Roger, Buzz. It sounds like a good  
idea for some of your surveying work there

222

00:32:21,110 --> 00:32:22,700

inside the cockpit, over.

223

00:32:22,700 --> 00:32:29,700

SC Okay, you want to run that by whoever might

be concerned.

224

00:32:39,890 --> 00:32:46,890

CAPCOM I sure will.

225

00:33:29,870 --> 00:33:36,870

PAO This is Apollo Control, Houston. 84 hours  
44 minutes now into the flight of Apollo 11.

226

00:33:54,080 --> 00:34:01,080

Our current spacecraft altitude is now 64.3  
nautical miles with an apolune 65.2 nautical

227

00:34:03,700 --> 00:34:10,700

miles; perilune 54.4 nautical miles. We show  
an orbital period of one hour 58 minutes 40

228

00:34:14,690 --> 00:34:20,159

seconds on our displays. Current weight of  
the spacecraft

229

00:34:20,159 --> 00:34:27,159

in orbit 70,502 pounds. At 84 hours 44 minutes,  
continuing to monitor, this is Apollo Control,

230

00:34:32,759 --> 00:34:34,619

Houston.

231

00:34:34,619 --> 00:34:41,619

PAO This is Apollo Control, Houston 84 hours,  
48 minutes now into the flight. We're receiving

232

00:34:45,499 --> 00:34:52,499

noisy data at this time. We've requested Apollo  
11 to give us a manual relock. Standing by

233

00:34:59,140 --> 00:35:04,730

at 84 hours, 49 minutes this is Apollo Control,  
Houston.

234

00:35:04,730 --> 00:35:11,319

SC Houston, Apollo 11. How do you read now?

235

00:35:11,319 --> 00:35:17,910

CAPCOM 11, Houston. Loud and clear this time.  
OMNI.

236

00:35:17,910 --> 00:35:23,609

SC Loud and clear. You faded out on your other  
transmissions. Over.

237

00:35:23,609 --> 00:35:25,460

CAPCOM Roger. Are you in wide-beam now?

238

00:35:25,460 --> 00:35:32,460

SC Negative, but I've got you locked back  
on again REACQING now.

239

00:35:33,529 --> 00:35:37,559

CAPCOM Roger. That's all we want. We want  
to stay in narrow and-we're a little puzzled

240

00:35:37,559 --> 00:35:44,559

about why we lost you here a few minutes ago.  
Do you have any ideas?

241

00:35:46,119 --> 00:35:53,119

SC Sure don't. We're showing the background  
- 15 degrees for the pitch and about 270.

242

00:35:56,380 --> 00:36:00,390

That ought to be good and clear.

243

00:36:00,390 --> 00:36:07,390

CAPCOM We concur that. We still don't have  
any good ideas on why we were lost.

244

00:36:16,410 --> 00:36:23,410

CAPCOM 11, Houston. Would you confirm that

we did acquire automatically when you came

245

00:36:43,950 --> 00:36:50,950

around the LM for this passage. Over.

246

00:37:13,990 --> 00:37:20,990

SC That's confirmed.

247

00:37:42,730 --> 00:37:49,730

CAPCOM Thank you.

248

00:38:11,470 --> 00:38:18,470

PAO This is Apollo Control, Houston 84 hours,  
56 minutes are now in the flight of Apollo

249

00:38:27,730 --> 00:38:34,730

11. Our current apolune 65.1 nautical miles,  
current perilune 54.3 nautical miles. After

250

00:38:41,460 --> 00:38:48,460

receiving some noisy signal, Apollo i1 has  
locked back on in fine form. That was Buzz

251

00:38:51,710 --> 00:38:58,710

Aldrin speaking with Owen Garriott here in  
the Mission Control Center. I expect we will

252

00:38:58,799 --> 00:39:05,799

take a second look at why we had to lock on  
manually. As we receive any updates on

253

00:39:11,119 --> 00:39:18,119

we'll pass them along. We now read 84 hours,  
57 minutes and this is Apollo Control, Houston.

254

00:39:21,940 --> 00:39:28,940

CAPCOM Apollo 11, Houston, over.

255

00:39:30,200 --> 00:39:36,799

SC Houston, Apollo 11.

256

00:39:36,799 --> 00:39:43,799

CAPCOM Eleven, Houston, on your RCS select switches, we show quad Bravo disabled but

257

00:39:53,079 --> 00:40:00,079

quad Charlie only partially disabled. Charlie 3 I believe, is the only one you have selected

258

00:40:12,390 --> 00:40:19,390

off, is that correct?

259

00:40:25,900 --> 00:40:32,900

SC Roger, that's correct.

260

00:40:39,410 --> 00:40:46,160

CAPCOM Rog .

261

00:40:46,160 --> 00:40:53,160

PAO This is Apollo Control Houston at 85 hours 5 minutes now into the flight of Apollo 11.

262

00:40:55,999 --> 00:41:02,999

We confirmed from the ground, following that conversation exchange. As was pointed out

263

00:41:07,890 --> 00:41:12,619

CAPCOM We see them all disabled at this time, thank you.

264

00:41:12,619 --> 00:41:19,619

PAO As was pointed out, quad, RCS quad Charlie is now disabled following that conversational

265

00:41:24,809 --> 00:41:31,319

exchange between Owen Garriott and Buzz Aldrin. Buzz, the lunar module

266

00:41:31,319 --> 00:41:38,319  
apparently, quite obviously still awake. 85  
hours 7 minutes now into the flight of Apollo

267

00:41:42,460 --> 00:41:49,460  
11 now continuing to monitor, this is Apollo  
Control, Houston.

268

00:42:01,640 --> 00:42:06,470  
CAPCOM Apollo 11, Houston, over.

269

00:42:06,470 --> 00:42:11,029  
SC Go ahead Houston.

270

00:42:11,029 --> 00:42:18,029  
CAPCOM 11, Houston. We're going to try to  
check out this ability to automatically reacquire

271

00:42:18,880 --> 00:42:25,880  
on the S-band and what we want to do is to  
secure our uplink carrier for about 30 seconds,

272

00:42:26,039 --> 00:42:32,190  
then we will turn it back on and see if the  
spacecraft equipment will automatically reacquire.

273

00:42:32,190 --> 00:42:37,859  
So if you do not get a call from us within  
about 3 minutes, that means we have not been

274

00:42:37,859 --> 00:42:44,059  
able to reacquire and request your assistance  
on a manual acquisition, over.

275

00:42:44,059 --> 00:42:47,920  
SC Okay, we understand.

276

00:42:47,920 --> 00:42:54,920  
CAPCOM 11 Houston, we also would appreciate  
if you will note the angles that the antenna

277

00:42:58,720 --> 00:43:05,720

tracks through in its attempt to reacquire,  
over.

278

00:43:35,220 --> 00:43:42,220

SC Roger, we'll do that.

279

00:45:01,509 --> 00:45:08,509

CAPCOM 11, Houston. It looks like we're locked  
back up again with no delay. How does it look

280

00:46:14,160 --> 00:46:15,970

on board? Over.

281

00:46:15,970 --> 00:46:22,970

SC Roger. The signal strength dropped very  
rapidly to zero and the pitch and yaw, in

282

00:46:29,140 --> 00:46:36,140

about 3 seconds, moved towards 40 degrees  
pitch and 240 degrees yaw.

283

00:46:38,640 --> 00:46:45,640

Right now, we're setting on about 15 degrees  
pitch and roll about 265 degrees yaw. So they

284

00:46:49,269 --> 00:46:56,269

didn't move very far, oh, about 30 degrees  
apiece and then they picked right back on

285

00:46:59,259 --> 00:47:00,739

up again. Over.

286

00:47:00,739 --> 00:47:07,739

CAPCOM Roger. Some of the luckiest people  
in the background there. We copied your pitch

287

00:47:14,619 --> 00:47:21,619

and yaw angles.

288

00:47:42,529 --> 00:47:49,529

CAPCOM 11, Houston. You give us the location of your pitch and yaw location of your position

289

00:48:12,910 --> 00:48:13,180

indicators. Over.

290

00:48:13,180 --> 00:48:20,180

SC Roger. They're in the same position as the antenna right now, about 15 degrees pitch

291

00:48:24,079 --> 00:48:31,079

and - no, wait a minute. I got them - got it at about 75 instead of 265.

292

00:48:44,299 --> 00:48:51,299

CAPCOM Okay, thank you.

293

00:48:55,359 --> 00:49:02,359

CAPCOM 11, Houston. We'd like to try the same procedure once more. We'll leave the carrier

294

00:49:09,829 --> 00:49:15,380

a little longer and be back up for a call within 4 minutes. Over.

295

00:49:15,380 --> 00:49:17,680

SC Okay.

296

00:49:17,680 --> 00:49:24,479

PAO This is Apollo Control, Houston. At 85 hours 17 minutes now into the flight of Apollo

297

00:49:24,479 --> 00:49:31,259

11. What you heard in the conversation between Owen Garriott and Buzz Aldrin

298

00:49:31,259 --> 00:49:38,259

was following a communications check in which we secured the uplink carrier for some 30

299

00:49:44,819 --> 00:49:51,819

seconds and waited to give it a period of time of approximately 3 minutes, to see if

300

00:49:52,690 --> 00:49:59,690

the spacecraft would reacquire. We appeared to reacquire in fine form on this first test.

301

00:50:07,380 --> 00:50:14,380

We will repeat it - this test a second time, delaying approximately 4 minutes before we

302

00:50:16,650 --> 00:50:23,650

place a call to Apollo 11. At 85 hours 17 minutes, we currently read an altitude - spacecraft

303

00:50:24,690 --> 00:50:31,690

altitude of 56.1 nautical miles. Present velocity shows 5,367 feet per second. At apolune 65

304

00:50:38,650 --> 00:50:45,650

nautical miles, perilune 54.4 nautical miles. Present weight in orbit remains a static 70,502

305

00:50:52,509 --> 00:50:59,509

pounds. Present time in orbit as shown on our displays, 1 hour 58 minutes 40 seconds.

306

00:51:01,499 --> 00:51:08,499

This is Apollo Control, Houston.

307

00:51:48,890 --> 00:51:55,890

CAPCOM 11, Houston. We're locked back up again. Can you give us a report on how the antenna

308

00:52:54,450 --> 00:52:55,950

behaves?

309

00:52:55,950 --> 00:53:02,950

SC Roger. it was essentially identical as before. The pitch went to 45, 40 to 45 and

310

00:53:10,569 --> 00:53:17,569

then the yaw went to about 255, 245 to 255 and then it rather quickly locked up at 15

311

00:53:26,369 --> 00:53:29,839

degrees pitch and 270 yaw. Over.

312

00:53:29,839 --> 00:53:36,069

CAPCOM 11, Houston. Roger. Your angles of 45 and 255. Do I understand that as soon as

313

00:53:36,069 --> 00:53:42,210

the carrier dropped, it went to these angles, or did it only go to these angles after the

314

00:53:42,210 --> 00:53:48,150

uplink carrier was re-enabled and the antenna began to reacquire? Over.

315

00:53:48,150 --> 00:53:55,150

SC No. As soon as the carrier dropped off, why it drifted over into those angles and

316

00:53:57,579 --> 00:54:04,579

stayed there. Then when it came back up again, why it hunted around for a while, but it didn't

317

00:54:08,630 --> 00:54:15,630

get any further off, gradually brought it on in to the angles where it is right now,

318

00:54:16,470 --> 00:54:19,930

and then the signal strength, would take several jumps as evidently it goes from wide to medium

319

00:54:19,930 --> 00:54:20,279

to narrow.

320

00:54:20,279 --> 00:54:23,249

CAPCOM 11, Houston. I understand, and on another subject, request you zero your optics for

321

00:54:23,249 --> 00:54:27,589

the night. Over.

322

00:54:27,589 --> 00:54:33,170

CAPCOM Apollo 11, Houston. Over.

323

00:54:33,170 --> 00:54:38,970

SC Houston, Apollo 11, go ahead.

324

00:54:38,970 --> 00:54:45,970

CAPCOM The Black Bugle just arrived with some morning news briefs if you're ready?

325

00:54:47,259 --> 00:54:50,829

SC Go ahead.

326

00:54:50,829 --> 00:54:57,829

Ah, Roger. Okay. Church services around the world today are mentioning Apollo 11 in their

327

00:54:59,829 --> 00:55:04,849

prayers. President Nixon's worship service at the White House is also dedicated to the

328

00:55:04,849 --> 00:55:11,039

mission and our fellow astronaut, Frank Borman, is still in there pitching and will read the

329

00:55:11,039 --> 00:55:18,039

passage from Genesis which was read on Apollo 8 last Christmas. The Cabinet and members

330

00:55:18,039 --> 00:55:23,489

of Congress, with emphasis on the Senate and House Space Committees, have been invited

331

00:55:23,489 --> 00:55:30,489

along with a number of other guests. Buzz, your son, Andy, got a tour of MSC yesterday.

332

00:55:35,559 --> 00:55:42,559

Your uncle, Bob Moon, accompanied him on the visit which included the LRL. Among the...

333

00:55:47,670 --> 00:55:54,670

Roger. Among the large headlines concerning Apollo this morning is one asking that you

334

00:55:55,700 --> 00:56:02,349

watch for a lovely girl with a big rabbit. An ancient legend says a beautiful Chinese

335

00:56:02,349 --> 00:56:09,349

girl called Changho has been living there for four thousand years. It seems she was

336

00:56:09,969 --> 00:56:16,660

banished to the moon because she stole the till of immortality from her husband. You

337

00:56:16,660 --> 00:56:23,359

might also look for her companion, a large Chinese rabbit, who is easy to spot since

338

00:56:23,359 --> 00:56:29,079

he is always standing on his hind feet in the shade of a cinnamon tree. The name of

339

00:56:29,079 --> 00:56:32,009

the rabbit is not reported.

340

00:56:32,009 --> 00:56:39,009

Okay, we'll keep a close eye for the bunny girl.

341

00:56:41,319 --> 00:56:48,319

Roger. You residents of the spacecraft Columbia may be interested in knowing that today is

342

00:56:48,599 --> 00:56:55,599

Independence Day in the country of Columbia. Gloria Diaz of the Philippines was crowned

343

00:57:05,119 --> 00:57:12,119

Miss Universe last night. She defeated 60 other girls for the global beauty title. Miss

344

00:57:12,309 --> 00:57:19,309

Diaz is 18 with black hair and eyes and measures 34 ½, 23, 34 ½. First runner-up was Miss

345

00:57:26,279 --> 00:57:33,279

Australia followed by Miss Israel and Miss Japan. While you're on your way back Tuesday

346

00:57:40,410 --> 00:57:45,670

night, the American and National League All Stars will be playing ball in Washington.

347

00:57:45,670 --> 00:57:51,410

Mel Stadlemeyer of the Yankees is expected to be the American League's first pitcher.

348

00:57:51,410 --> 00:57:58,410

No one is predicting who will be pitcher for the National League yet. They have nine on

349

00:57:58,640 --> 00:58:05,640

the roster. Even though research has certainly paid off in the space program, research doesn't

350  
00:58:11,469 --> 00:58:17,259  
always pay off, it seems. The Woodstream Corporation,  
parent company of the Animal Trap Company

351  
00:58:17,259 --> 00:58:24,259  
of America, which has made more than a billion  
wooden spring mousetraps reports that it's

352  
00:58:24,719 --> 00:58:31,719  
built a better mousetrap but the world didn't  
beat a door to it, didn't beat a path to

353  
00:58:33,119 --> 00:58:39,700  
its door. As a matter of fact, the company  
had to go back to the old fashioned kind.

354  
00:58:39,700 --> 00:58:46,700  
They said, "We should have spent more time  
researching housewives and less time researching

355  
00:58:47,279 --> 00:58:54,279  
mice." And the Black Bugle is all completed  
for the morning.

356  
00:59:01,130 --> 00:59:08,130  
Thank you very much. We appreciate the news.

357  
00:59:21,059 --> 00:59:28,059  
Our black team will be looking for an interesting  
day with you all tomorrow.