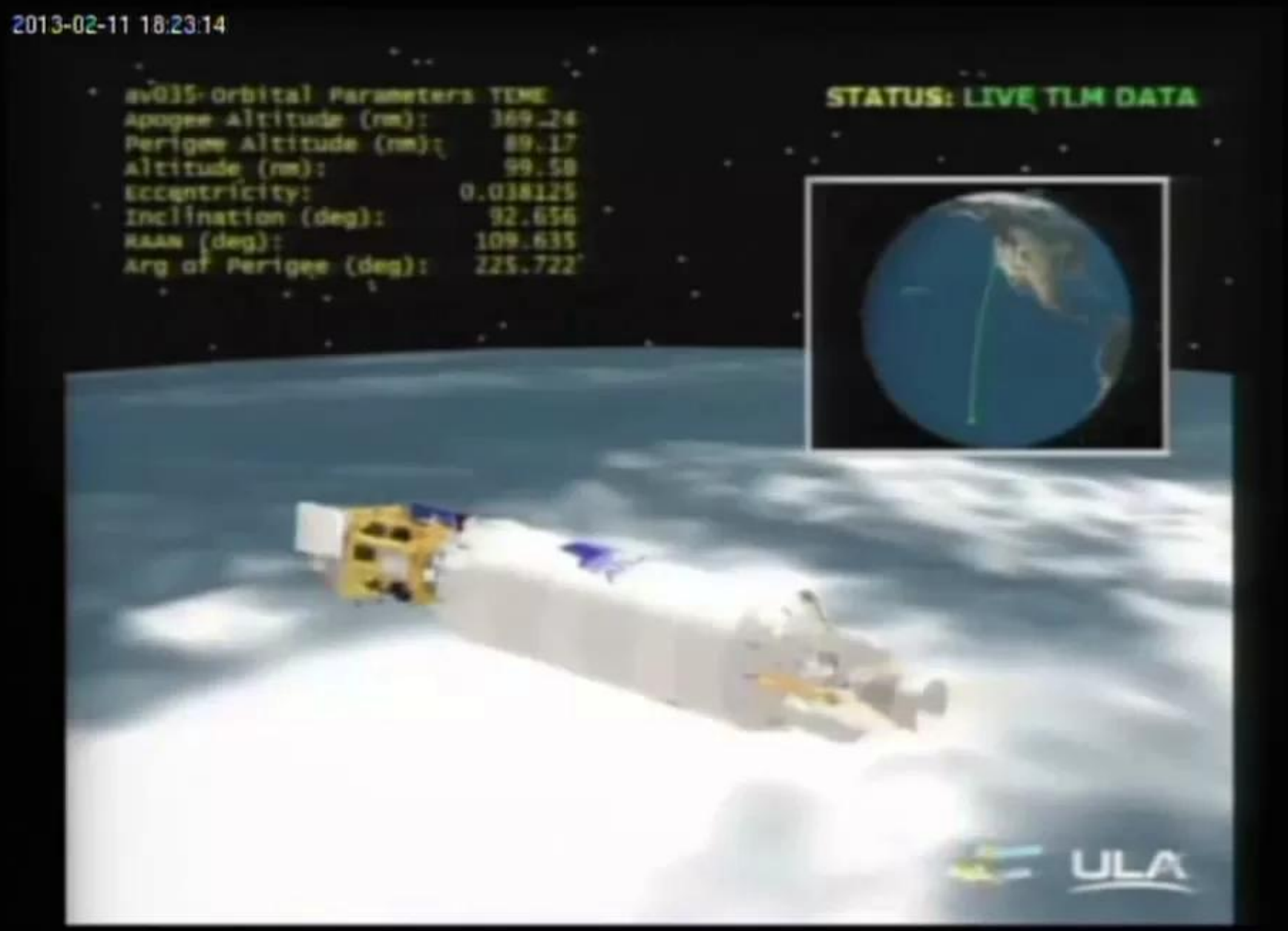
2013-02-11 18:23:14
av035 Orbital Parameters TEME
Apogee Altitude (nm): 369.24
Perigee Altitude (nm): 89.17
Altitude (nm): 99.58
Eccentricity: 0.038125
Inclination (deg): 92.656
RAAN (deg): 109.635
Arg of Perigee (deg): 225.722
STATUS: LIVE TLM DATA
ULA

1
00:00:01,120 --> 00:00:05,749
t-minus 15 seconds

2
00:00:08,230 --> 00:00:07,349
t minus 10

3
00:00:09,030 --> 00:00:08,240
9

4
00:00:09,910 --> 00:00:09,040
8

5
00:00:10,790 --> 00:00:09,920
7

6
00:00:11,669 --> 00:00:10,800
6

7
00:00:12,549 --> 00:00:11,679
5

8
00:00:13,589 --> 00:00:12,559
4

9
00:00:14,549 --> 00:00:13,599
3

10
00:00:16,150 --> 00:00:14,559
2

11
00:00:17,830 --> 00:00:16,160
1

12
00:00:21,029 --> 00:00:17,840
have ignition

13
00:00:23,349 --> 00:00:21,039

and liftoff of the atlas v rocket on the

14
00:00:25,670 --> 00:00:23,359
landsat data continuity mission

15
00:00:28,150 --> 00:00:25,680
continuing the 40-year legacy of

16
00:01:05,750 --> 00:00:28,160
deserving earth's natural resources from

17
00:01:05,760 --> 00:01:16,710
foreign

18
00:01:21,190 --> 00:01:19,670
and we're in close loop control

19
00:01:23,270 --> 00:01:21,200
mixed ratio is being controlled as

20
00:01:25,190 --> 00:01:23,280
expected engine continues to operate

21
00:01:28,469 --> 00:01:25,200
normally same minor changes change in

22
00:01:32,390 --> 00:01:28,479
mixture ratio as expected

23
00:01:32,400 --> 00:01:37,109
engine is burning normally

24
00:01:46,469 --> 00:01:40,789
and ldcm is now supersonic

25
00:01:56,870 --> 00:01:47,990
and we've now passed through the region

26
00:02:01,749 --> 00:01:58,950
and the engine is throttled down to 95

27
00:02:08,550 --> 00:02:01,759
thrust as expected

28
00:02:12,869 --> 00:02:10,630
and the vehicle is now

29
00:02:15,830 --> 00:02:12,879
13 miles in altitude

30
00:02:25,030 --> 00:02:15,840
6 miles downrange traveling at 1700

31
00:02:30,470 --> 00:02:26,869
still operating normally at 95 percent

32
00:02:34,309 --> 00:02:30,480
thrust everything looking good

33
00:02:36,309 --> 00:02:34,319
and we vented the center fuel tank

34
00:02:37,830 --> 00:02:36,319
for to condition the propellants for

35
00:02:41,430 --> 00:02:37,840
center phase

36
00:02:45,910 --> 00:02:41,440
booster continues to operate normally

37
00:02:49,670 --> 00:02:47,430
next event we're looking for is firing

38
00:02:56,070 --> 00:02:49,680

the pyro valve to activate the centaur

39
00:02:56,080 --> 00:03:00,149
and we fired that valve

40
00:03:05,509 --> 00:03:01,509
boot pressure coming up everything

41
00:03:11,030 --> 00:03:07,990
and engines operating normally

42
00:03:23,750 --> 00:03:11,040
vehicles accelerating smoothly

43
00:03:23,760 --> 00:03:27,750
everything looking good

44
00:03:33,750 --> 00:03:29,750
very small disturbances flight control

45
00:03:38,630 --> 00:03:35,670
a very smooth ride

46
00:03:46,949 --> 00:03:38,640
continuing at 95 percent thrust

47
00:03:53,110 --> 00:03:49,270
and the vehicle is now 25 percent of

48
00:04:01,190 --> 00:03:55,030
and we've now started a constant 5g

49
00:04:01,200 --> 00:04:07,589
and we fire the pogo bleed valve

50
00:04:07,599 --> 00:04:13,990
and start a boost phase chill

51
00:04:19,670 --> 00:04:16,789
everything's reacting we're now at

52
00:04:25,030 --> 00:04:19,680
4.6 g limiting

53
00:04:30,310 --> 00:04:27,510
coming up on booster engine cutoff

54
00:04:36,310 --> 00:04:30,320
we have beco we have staging

55
00:04:40,070 --> 00:04:38,230
full thrust

56
00:04:42,710 --> 00:04:40,080
everything is looking good good steady

57
00:04:45,670 --> 00:04:42,720
state operating levels on center coming

58
00:04:45,680 --> 00:04:49,749
and we have bearing separation

59
00:04:54,150 --> 00:04:52,150
two good brake wires

60
00:05:00,070 --> 00:04:54,160
and we've enabled guidance

61
00:05:04,390 --> 00:05:01,670
we can start transient very good start

62
00:05:07,590 --> 00:05:05,749
and we've gone

63
00:05:09,430 --> 00:05:07,600

to our z profile

64
00:05:13,110 --> 00:05:09,440
valve angle on

65
00:05:17,510 --> 00:05:14,550
down to the

66
00:05:21,590 --> 00:05:19,510
everything is looking good we've seen

67
00:05:23,830 --> 00:05:21,600
the reaction control systems firing to

68
00:05:25,670 --> 00:05:23,840
purge the gn2 out

69
00:05:31,749 --> 00:05:25,680
as well as thermal conditioning firings

70
00:05:39,830 --> 00:05:33,350
i think very good steady state operating

71
00:05:39,840 --> 00:05:49,990
vehicles flying is very smooth

72
00:05:57,350 --> 00:05:53,950
108 137 miles in altitude

73
00:06:01,510 --> 00:05:57,360
428 miles downrange traveling at 10 400

74
00:06:01,520 --> 00:06:13,189
everything is looking good

75
00:06:16,309 --> 00:06:14,550
we've gone to close loop control and

76
00:06:20,790 --> 00:06:16,319
center pu continuing to make a locks

77
00:06:20,800 --> 00:06:40,870
carlton continues to operate normally

78
00:06:48,870 --> 00:06:44,309
coming up on our telemetry format change

79
00:06:50,950 --> 00:06:48,880
continue to see very good telemetry data

80
00:06:56,550 --> 00:06:50,960
center pu is now beginning to control

81
00:06:59,510 --> 00:06:58,230
and we've had the telemetry format

82
00:07:02,550 --> 00:06:59,520
change

83
00:07:07,110 --> 00:07:02,560
very small dropout

84
00:07:11,510 --> 00:07:09,990
we're continuing to see

85
00:07:15,749 --> 00:07:11,520
the pre-planned firings of the reaction

86
00:07:19,749 --> 00:07:17,909
to condition the loop and thrusters as

87
00:07:21,990 --> 00:07:19,759
well as very little

88
00:07:26,790 --> 00:07:22,000

roll control being required everything

89
00:07:26,800 --> 00:07:33,430
and we have made the roll to tdrs

90
00:07:36,390 --> 00:07:34,629
and we have a preliminary look at

91
00:07:39,270 --> 00:07:36,400
booster stage performance

92
00:07:43,670 --> 00:07:39,280
we are plus 71 pounds of pe but

93
00:07:43,680 --> 00:07:48,469
very good performance from the booster

94
00:07:48,479 --> 00:07:53,749
arrow tank continues to operate normally

95
00:08:02,150 --> 00:07:55,270
tu is now controlling near nominal

96
00:08:02,160 --> 00:08:25,430
engine operating parameters look good

97
00:08:30,710 --> 00:08:29,189
we use continuing control as expected

98
00:08:34,149 --> 00:08:30,720
see the engine responding to the changes

99
00:08:37,269 --> 00:08:35,589
and our reaction control system

100
00:08:39,110 --> 00:08:37,279
temperatures have

101
00:08:43,350 --> 00:08:39,120
reached a steady state with bottle

102
00:08:46,230 --> 00:08:45,030
vehicles continue to accelerate very

103
00:08:48,710 --> 00:08:46,240
smoothly

104
00:08:50,630 --> 00:08:48,720
very little

105
00:08:51,750 --> 00:08:50,640
dynamic response from the flight control

106
00:08:55,829 --> 00:08:51,760
system

107
00:09:02,630 --> 00:08:59,990
okay now 197 miles in altitude 970 miles

108
00:09:11,829 --> 00:09:02,640
downrange traveling at 11 800 miles per

109
00:09:16,310 --> 00:09:14,630
and a quick look at our

110
00:09:19,590 --> 00:09:16,320
trajectory performance we're flying

111
00:09:38,870 --> 00:09:19,600
right down our predicted trajectory

112
00:09:38,880 --> 00:09:44,949
and we have safety fts system

113
00:09:48,150 --> 00:09:46,630

and vehicles now

114
00:09:50,870 --> 00:09:48,160
maneuvering for rand steering as

115
00:09:53,990 --> 00:09:50,880
expected

116
00:09:55,350 --> 00:09:54,000
appropriate response and body rates

117
00:10:01,430 --> 00:09:55,360
since our main engine is operating

118
00:10:09,430 --> 00:10:04,710
and we are in the process of executing

119
00:10:09,440 --> 00:10:16,550
for everything is normal on the mission

120
00:10:23,190 --> 00:10:18,389
you use controlling right

121
00:10:32,310 --> 00:10:25,910
and vehicle rates have stabilized out

122
00:10:37,990 --> 00:10:34,190
200 miles in altitude

123
00:11:23,030 --> 00:10:38,000
1283 miles downrange traveling at 12

124
00:11:26,389 --> 00:11:24,870
and everything continues to operate

125
00:11:30,949 --> 00:11:26,399
normally

126
00:11:33,990 --> 00:11:30,959
we are now 194 miles in altitude 1480

127
00:11:37,509 --> 00:11:34,000
miles downrange traveling at 13 500

128
00:11:45,269 --> 00:11:39,110
continuing to see good centaur operating

129
00:11:49,670 --> 00:11:48,230
pu is controlling nicely

130
00:11:54,949 --> 00:11:49,680
and your periodic firings in the

131
00:12:01,910 --> 00:11:56,470
rub an inlet temp

132
00:12:01,920 --> 00:12:16,310
everything is nominal

133
00:12:19,470 --> 00:12:17,670
about 12 minutes into the mission

134
00:12:22,949 --> 00:12:19,480
everything looking good

135
00:12:25,430 --> 00:12:22,959
185 miles in altitude

136
00:12:26,949 --> 00:12:25,440
sixteen hundred eighty miles downrange

137
00:12:32,949 --> 00:12:26,959
traveling at fourteen thousand two

138
00:12:32,959 --> 00:12:42,069

engines operating normally

139
00:12:42,079 --> 00:12:56,470
everything looking good

140
00:13:04,829 --> 00:12:59,509
and pu control has been very stable near

141
00:13:14,870 --> 00:13:07,030
ratio very good engine operating

142
00:13:18,470 --> 00:13:16,710
addressing system performance has been

143
00:13:19,829 --> 00:13:18,480
excellent thus far

144
00:13:42,150 --> 00:13:19,839
we continue to receive very good

145
00:13:42,160 --> 00:13:48,150
now two minutes from a nominal miko

146
00:13:48,160 --> 00:13:58,949
engine continues to operate normally

147
00:14:02,389 --> 00:14:00,710
quick look at other vehicle parameters

148
00:14:06,150 --> 00:14:02,399
tank

149
00:14:08,790 --> 00:14:06,160
look good

150
00:14:19,829 --> 00:14:08,800
as do battery voltages

151
00:14:19,839 --> 00:14:26,389
everything continues to look good

152
00:14:30,949 --> 00:14:28,150
chamber pressure locks pump discharge

153
00:14:39,509 --> 00:14:30,959
and victory inlet pressure all right as

154
00:14:39,519 --> 00:14:46,470
active pu control looks good

155
00:14:46,480 --> 00:15:11,829
one minute to a nominal miko

156
00:15:23,269 --> 00:15:13,750
30 seconds to nominal miko everything

157
00:15:46,629 --> 00:15:25,590
and pu has gone open loop

158
00:15:50,550 --> 00:15:49,110
cut off

159
00:15:52,629 --> 00:15:50,560
since our main engine is shut down

160
00:16:01,749 --> 00:15:52,639
shutdown signatures are normal

161
00:16:12,470 --> 00:16:04,389
vehicles maneuvering to its

162
00:16:12,480 --> 00:16:19,509
and we're starting our spin up and roll

163
00:16:23,509 --> 00:16:20,550

we've completed that we're now

164
00:16:28,870 --> 00:16:23,519
maintaining a one degree per second ptc

165
00:16:34,310 --> 00:16:31,749
this will be a

166
00:16:49,110 --> 00:16:34,320
55 minute coast

167
00:16:52,870 --> 00:16:50,790
and we're continuing to see our expected

168
00:16:54,949 --> 00:16:52,880
maneuvering of the vehicle for coast

169
00:16:57,350 --> 00:16:54,959
phase

170
00:16:59,590 --> 00:16:57,360
taking a quick look at bus and battery

171
00:17:02,389 --> 00:16:59,600
voltages looking good

172
00:18:24,390 --> 00:17:02,399
as our storage bottle pressures

173
00:18:27,750 --> 00:18:26,230
and we've just passed through 18 minutes

174
00:18:28,710 --> 00:18:27,760
into the mission everything looking good

175
00:18:30,390 --> 00:18:28,720
we are

176
00:18:33,990 --> 00:18:30,400
coasting following

177
00:18:36,549 --> 00:18:34,000
a very good first burn of centaur

178
00:18:38,789 --> 00:18:36,559
continuing to see expected maneuvering

179
00:18:41,110 --> 00:18:38,799
for coast phase

180
00:18:53,750 --> 00:18:41,120
bus battery voltages look good tank and

181
00:18:59,990 --> 00:18:57,750
and for an official liftoff time we have

182
00:19:03,909 --> 00:19:00,000
1002

183
00:19:06,390 --> 00:19:03,919
zero zero decibel five three six

184
00:19:09,510 --> 00:19:06,400
ten colon zero two colon zero zero

185
00:19:19,590 --> 00:19:09,520
decimal five three six was our official

186
00:19:24,390 --> 00:19:21,669
in just a moment we'll be doing

187
00:20:16,230 --> 00:19:24,400
launch replays from different camera

188
00:20:19,029 --> 00:20:17,669

passing through 20 minutes into the

189
00:20:21,590 --> 00:20:19,039
mission everything continues to look

190
00:20:23,430 --> 00:20:21,600
good

191
00:20:29,590 --> 00:20:23,440
saying expected data dropouts due to the

192
00:20:37,270 --> 00:20:32,070
vehicle systems

193
00:20:41,909 --> 00:20:39,510
bitching y'all have nulled out

194
00:20:53,350 --> 00:20:41,919
and we continue to see our one degree

195
00:20:57,430 --> 00:20:55,270
and we have switched off

196
00:20:59,990 --> 00:20:57,440
c-band transponder right on time we are

197
00:21:01,430 --> 00:21:00,000
also changing our duty cycle

198
00:21:04,149 --> 00:21:01,440
on the reaction control system that

199
00:21:07,350 --> 00:21:06,470
a little while back we are ramping down

200
00:22:50,390 --> 00:21:07,360
to

201
00:22:55,590 --> 00:22:52,870
and we do have our

202
00:22:57,190 --> 00:22:55,600
first look at our meek one orbit we are

203
00:23:00,310 --> 00:22:57,200
within one sigma in our orbital

204
00:23:00,320 --> 00:23:33,270
everything is looking good

205
00:23:33,280 --> 00:24:15,830
so

206
00:24:18,950 --> 00:24:17,590
passing through 24 minutes into the

207
00:24:21,430 --> 00:24:18,960
mission everything continues to look

208
00:24:26,470 --> 00:24:23,190
tank pressures bottle pressures are

209
00:24:27,830 --> 00:24:26,480
normal we're down to our 12 duty cycle

210
00:24:29,350 --> 00:24:27,840
on

211
00:24:32,549 --> 00:24:29,360
settling motors

212
00:24:36,870 --> 00:24:32,559
bus battery voltages look good nice 30

213
00:24:43,350 --> 00:24:39,190

pitch and yaw are sitting right at zero

214
00:24:43,360 --> 00:26:32,470
everything looks good

215
00:26:59,350 --> 00:26:45,510
so

216
00:27:03,430 --> 00:27:01,269
this is atlas launch control we're

217
00:27:05,909 --> 00:27:03,440
looking now at a view of the earth

218
00:27:07,590 --> 00:27:05,919
that shows the ground track of the atlas

219
00:27:10,310 --> 00:27:07,600
v rocket with

220
00:27:12,549 --> 00:27:10,320
ltcm as we can see it's

221
00:27:15,669 --> 00:27:12,559
moved considerably south

222
00:27:18,950 --> 00:27:15,679
over the pacific ocean

223
00:27:21,510 --> 00:27:18,960
and we can see with this uh

224
00:27:25,269 --> 00:27:21,520
image that it shows where the daylight

225
00:27:27,430 --> 00:27:25,279
area is and off to the right is the area

226
00:27:30,149 --> 00:27:27,440
of the earth that's in darkness

227
00:27:31,830 --> 00:27:30,159
and later the spacecraft will be

228
00:27:33,669 --> 00:27:31,840
following this track but we're coming

229
00:27:36,230 --> 00:27:33,679
back northward and we'll be entering

230
00:27:39,029 --> 00:27:36,240
that area of darkness we see

231
00:27:41,190 --> 00:27:39,039
coming back over the north pole and then

232
00:27:43,430 --> 00:27:41,200
down over the pacific again back into

233
00:27:45,350 --> 00:27:43,440
daylight

234
00:27:48,389 --> 00:27:45,360
and you can see

235
00:28:28,710 --> 00:27:48,399
where the rocket is with the flashing

236
00:28:35,110 --> 00:28:32,149
model pressures looks good

237
00:28:37,350 --> 00:28:35,120
tank pressure's good

238
00:28:44,230 --> 00:28:37,360

and electrical system

239
00:28:48,230 --> 00:28:46,149
we're going to look now at some launch

240
00:28:50,230 --> 00:28:48,240
replays video launch replays from

241
00:30:25,590 --> 00:28:50,240
different camera positions at the pan

242
00:30:28,950 --> 00:30:27,269
and we've passed through 30 minutes into

243
00:31:53,029 --> 00:30:28,960
the mission no change in status all

244
00:32:01,590 --> 00:31:55,830
and the vehicle is

245
00:32:10,870 --> 00:32:03,669
we are heading down to a minus one

246
00:32:15,990 --> 00:32:12,549
this time we are experiencing a tomato

247
00:32:18,470 --> 00:32:16,000
drop out up there's back

248
00:32:21,509 --> 00:32:18,480
and roll rate has steadied out at minus

249
00:32:21,519 --> 00:34:18,550
all the systems look normal

250
00:34:22,149 --> 00:34:20,149
passing through 34 minutes into the

251
00:34:24,149 --> 00:34:22,159
mission no change in status everything

252
00:34:25,669 --> 00:34:24,159
looks good

253
00:34:27,030 --> 00:34:25,679
plus battery voltages right where

254
00:34:34,629 --> 00:34:27,040
they're supposed to be

255
00:34:34,639 --> 00:39:53,750
vehicle rates are nice and smooth

256
00:39:58,710 --> 00:39:56,790
we're back now in the coast phase

257
00:40:01,589 --> 00:39:58,720
and as you can see the

258
00:40:04,950 --> 00:40:01,599
spacecraft is down near antarctica

259
00:40:06,230 --> 00:40:04,960
we're 39 minutes 47 seconds into the

260
00:40:09,109 --> 00:40:06,240
mission

261
00:40:11,589 --> 00:40:09,119
and we will be

262
00:40:12,950 --> 00:40:11,599
going away for a short time coming back

263
00:40:16,470 --> 00:40:12,960

again at

264
00:40:17,670 --> 00:40:16,480
1105 pacific for the

265
00:40:19,829 --> 00:40:17,680
restart

266
00:40:22,309 --> 00:40:19,839
of the centaur stage

267
00:40:25,109 --> 00:40:22,319
that brief

268
00:40:29,829 --> 00:40:25,119
two minute or so burn that will lead us

269
00:40:36,150 --> 00:40:32,390
so this time

270
00:40:40,309 --> 00:40:36,160
we will take a pause in our coverage and

271
00:40:42,550 --> 00:40:40,319
come back at 1105 pacific time to resume