



1
00:00:17,430 --> 00:00:03,270
all systems go the range clear

2
00:00:26,870 --> 00:00:19,349
t-minus 30 seconds

3
00:00:31,509 --> 00:00:29,750
now under 30 seconds stand by for that

4
00:00:34,950 --> 00:00:31,519
first ignition the two main engines on

5
00:00:37,270 --> 00:00:34,960
the first stage will be igniting

6
00:00:39,190 --> 00:00:37,280
t minus 10 seconds cbc slew test

7
00:00:43,990 --> 00:00:39,200
initiated

8
00:00:45,990 --> 00:00:45,029
five

9
00:00:46,950 --> 00:00:46,000
four

10
00:00:47,910 --> 00:00:46,960
three

11
00:00:49,750 --> 00:00:47,920
two

12
00:00:52,310 --> 00:00:49,760
one

13
00:00:54,470 --> 00:00:52,320

and we have ignition

14

00:00:56,069 --> 00:00:54,480

and we have liftoff of antares for the

15

00:00:58,150 --> 00:00:56,079

or2 mission from the wild flight

16

00:00:59,510 --> 00:00:58,160

facility delivering cygnus on its second

17

00:01:02,150 --> 00:00:59,520

commercial resupply service to the

18

00:01:05,509 --> 00:01:02,160

international space station

19

00:01:08,469 --> 00:01:05,519

antares off the pad the ss janet's boss

20

00:01:09,750 --> 00:01:08,479

on its way with the orbital 2 science

21

00:01:12,870 --> 00:01:09,760

research supply mission to the

22

00:01:15,990 --> 00:01:12,880

international space station

23

00:01:17,749 --> 00:01:16,000

attitude is normal during flyoff

24

00:01:20,390 --> 00:01:17,759

poor pressures are novel in the

25

00:01:37,350 --> 00:01:20,400

commodity tanks

26

00:01:43,030 --> 00:01:38,950

and the first stage will fire for just

27

00:01:47,990 --> 00:01:44,630

attitude is nominal

28

00:01:49,670 --> 00:01:48,000

engines remain nominal

29

00:01:52,789 --> 00:01:49,680

power is nominal on our power buses

30

00:01:52,799 --> 00:01:56,310

hydraulic pvc performance is good

31

00:02:00,069 --> 00:01:58,149

we're at twenty thousand two first stage

32

00:02:04,709 --> 00:02:00,079

engines firing successfully carrying

33

00:02:04,719 --> 00:02:09,990

attitude is nominal

34

00:02:13,510 --> 00:02:12,070

core pressures are nominal we're adding

35

00:02:14,869 --> 00:02:13,520

helium into the uh volume of the

36

00:02:17,190 --> 00:02:14,879

pressure and tanks to keep them up the

37

00:02:19,110 --> 00:02:17,200

pressure

38

00:02:20,550 --> 00:02:19,120

passing through max q now attitude is

39

00:02:24,630 --> 00:02:20,560

nominal

40

00:02:28,229 --> 00:02:24,640

aj26 engine

41

00:02:31,910 --> 00:02:29,589

right now we're switching to a launch

42

00:02:33,750 --> 00:02:31,920

animation the rocket itself lost in view

43

00:02:36,470 --> 00:02:33,760

through the clouds continuing to perform

44

00:02:39,750 --> 00:02:36,480

nominally though as expected

45

00:02:43,830 --> 00:02:42,070

engines are nominal

46

00:02:47,509 --> 00:02:43,840

coming up on two minutes since launch

47

00:02:51,509 --> 00:02:47,519

115 seconds into the mission

48

00:02:53,350 --> 00:02:51,519

we're roughly two minutes from mikko

49

00:02:56,550 --> 00:02:53,360

pore pressures are nominal miko the main

50

00:02:58,550 --> 00:02:56,560

engine cut off the end of the stage one

51
00:03:02,470 --> 00:02:58,560
flight into orbit

52
00:03:09,110 --> 00:03:05,750
altitude is 100 000 feet

53
00:03:13,990 --> 00:03:09,120
engine performance is nominal

54
00:03:22,149 --> 00:03:16,869
attitude is good

55
00:03:26,149 --> 00:03:24,070
and tvcs are tracking very well very

56
00:03:29,110 --> 00:03:26,159
small steering commands on the engines

57
00:03:34,949 --> 00:03:32,550
overall antares performance is green

58
00:03:37,350 --> 00:03:34,959
coming up now on two minutes 50 seconds

59
00:03:39,750 --> 00:03:37,360
since liftoff just about one more minute

60
00:03:41,910 --> 00:03:39,760
until stage one shutdown

61
00:03:46,070 --> 00:03:41,920
attitude is nominal just a few seconds

62
00:03:48,229 --> 00:03:46,080
after shutdown stage one will separate

63
00:03:54,470 --> 00:03:48,239

we're one minute to mikko

64

00:04:03,270 --> 00:03:56,070

attitude is nominal

65

00:04:07,110 --> 00:04:05,990

and lox tank is uh getting additional

66

00:04:08,869 --> 00:04:07,120

valves open to continue the

67

00:04:11,190 --> 00:04:08,879

pressurization sequence

68

00:04:13,429 --> 00:04:11,200

all is good

69

00:04:17,670 --> 00:04:13,439

attitude is nominal

70

00:04:20,629 --> 00:04:19,030

we have started throttle down of the

71

00:04:25,350 --> 00:04:20,639

engines to keep the axial acceleration

72

00:04:35,270 --> 00:04:28,870

tvc slew maneuver started

73

00:04:41,189 --> 00:04:38,310

obviously 300 000 feet

74

00:04:45,590 --> 00:04:41,199

and we're coming up on mikko

75

00:04:49,189 --> 00:04:47,189

and we have miko

76
00:04:50,550 --> 00:04:49,199
stage one throttling down main engine

77
00:04:52,390 --> 00:04:50,560
cutoff

78
00:04:54,629 --> 00:04:52,400
pss disabled

79
00:04:57,189 --> 00:04:54,639
we have stage one separation

80
00:04:58,950 --> 00:04:57,199
stage one separation confirmed the two

81
00:05:01,830 --> 00:04:58,960
main engines doing their job

82
00:05:05,830 --> 00:05:01,840
successfully uh coast period here before

83
00:05:16,790 --> 00:05:07,909
at this point the rocket traveling uh

84
00:05:20,870 --> 00:05:18,790
okay close loop guidance has engaged

85
00:05:21,909 --> 00:05:20,880
stage two ignition time is 339 mission

86
00:05:23,189 --> 00:05:21,919
time

87
00:05:26,390 --> 00:05:23,199
we're currently at

88
00:05:26,400 --> 00:05:32,710

so another minute

89

00:05:37,510 --> 00:05:35,350

okay under a minute now from the solid

90

00:05:39,029 --> 00:05:37,520

second stage rocket igniting nominal

91

00:05:41,990 --> 00:05:39,039

performance continuing to carry cygnus

92

00:05:47,029 --> 00:05:42,000

into orbit velocity is at 19 525 feet

93

00:05:52,310 --> 00:05:49,350

altitude 150 kilometers antares is

94

00:05:54,390 --> 00:05:52,320

coasting between stage one and stage two

95

00:05:55,830 --> 00:05:54,400

burns

96

00:05:59,670 --> 00:05:55,840

we get up to a higher altitude we will

97

00:06:01,110 --> 00:05:59,680

separate the bearing and the inner stage

98

00:06:05,270 --> 00:06:01,120

avionics power is nominal on the power

99

00:06:05,280 --> 00:06:13,510

antares performance is green

100

00:06:16,870 --> 00:06:14,550

pegasus

101

00:06:19,270 --> 00:06:16,880

antares continues to coast

102

00:06:20,550 --> 00:06:19,280

wrong rocket there

103

00:06:23,110 --> 00:06:20,560

attitude is nominal during the coast

104

00:06:27,510 --> 00:06:24,629

so at this point fairing separation

105

00:06:30,629 --> 00:06:28,870

and now we have interstate separation

106

00:06:32,070 --> 00:06:30,639

we're preparing for the stage 2 ignition

107

00:06:34,550 --> 00:06:32,080

and we have we have positive

108

00:06:36,790 --> 00:06:34,560

confirmation of stage 2 ignition

109

00:06:40,469 --> 00:06:36,800

antares is thrusting

110

00:06:44,390 --> 00:06:41,749

taking some telemetry here it's in the

111

00:06:48,070 --> 00:06:46,150

battery voltage is good attitude is

112

00:06:51,749 --> 00:06:48,080

nominal during stage two burn the rocket

113

00:06:53,990 --> 00:06:51,759

at this point uh cygnus over 116 statute

114

00:06:56,950 --> 00:06:54,000
miles in altitude avionics power is

115

00:06:56,960 --> 00:07:00,390
attitude is nominal

116

00:07:00,400 --> 00:07:09,110
altitude 180 kilometers

117

00:07:13,749 --> 00:07:10,629
entirely's performance novel under stage

118

00:07:18,070 --> 00:07:16,070
the stage 2 engine will raise the

119

00:07:21,029 --> 00:07:18,080
altitude into its initial orbital

120

00:07:22,550 --> 00:07:21,039
insertion of just around 160 statute

121

00:07:25,990 --> 00:07:22,560
miles

122

00:07:29,990 --> 00:07:27,990
everything continuing to go as planned

123

00:07:32,390 --> 00:07:30,000
the rocket and the cargo craft looking

124

00:07:34,150 --> 00:07:32,400
good attitude is nominal

125

00:07:36,150 --> 00:07:34,160
we see some acs firings to control the

126
00:07:37,430 --> 00:07:36,160
roll axis

127
00:07:41,189 --> 00:07:37,440
pitch and yaw are controlled by the

128
00:07:41,199 --> 00:07:46,950
altitude is 190 kilometers

129
00:07:46,960 --> 00:07:58,790
attitude is nominal

130
00:07:58,800 --> 00:08:04,390
okay we're roughly a minute from burnout

131
00:08:04,400 --> 00:08:09,189
attitude is nominal

132
00:08:14,550 --> 00:08:12,469
altitude 195 kilometers

133
00:08:16,469 --> 00:08:14,560
so the second stage as you can hear

134
00:08:17,670 --> 00:08:16,479
continuing to raise cygnus into a higher

135
00:08:21,189 --> 00:08:17,680
and higher orbit we're getting good

136
00:08:27,350 --> 00:08:22,390
attitude is nominal and taurus

137
00:08:27,360 --> 00:08:37,909
avionics power is nominal

138
00:08:44,630 --> 00:08:39,750

and we have stage two tail off and

139

00:08:49,990 --> 00:08:48,070

so the second stage finishing up its job

140

00:08:52,070 --> 00:08:50,000

vehicle now orient itself for payload

141

00:08:53,990 --> 00:08:52,080

separation

142

00:08:56,230 --> 00:08:54,000

settle rates and point the cygnus in

143

00:08:57,910 --> 00:08:56,240

preparation for the separation of the

144

00:09:00,470 --> 00:08:57,920

cygnus

145

00:09:03,910 --> 00:09:00,480

lc dpm countdown one

146

00:09:03,920 --> 00:09:08,630

dpm meet me on countdown two

147

00:09:08,640 --> 00:09:16,230

and antares performance is nominal

148

00:09:19,990 --> 00:09:18,870

and cold gas acs is being used to point

149

00:09:21,190 --> 00:09:20,000

the

150

00:09:22,949 --> 00:09:21,200

entire's

151
00:09:27,910 --> 00:09:22,959
upper stack in preparation for cygnus

152
00:09:31,509 --> 00:09:29,670
avionics power is nominal that

153
00:09:33,990 --> 00:09:31,519
separation anticipated to come just a

154
00:09:36,150 --> 00:09:34,000
little over a minute from now

155
00:09:40,870 --> 00:09:36,160
following separation it'll be at an

156
00:09:42,870 --> 00:09:40,880
altitude of about 154 statute miles

157
00:09:44,389 --> 00:09:42,880
at that point it'll begin to deploy the

158
00:09:47,590 --> 00:09:44,399
solar arrays and do all the initial

159
00:09:52,150 --> 00:09:48,829
attitude is

160
00:10:02,630 --> 00:09:52,160
nominal we're achieving the attitude in

161
00:10:02,640 --> 00:10:06,630
entire status is green

162
00:10:12,230 --> 00:10:10,550
orbit orbit achieved looks very good

163
00:10:13,829 --> 00:10:12,240

we're just standing by for separation of

164

00:10:19,110 --> 00:10:13,839

the cygnus from the upper stage of the

165

00:10:27,670 --> 00:10:22,150

approximately 30 seconds to separation

166

00:10:30,550 --> 00:10:29,110

and we're receiving telemetry data

167

00:10:32,150 --> 00:10:30,560

through the bermuda tracking station and

168

00:10:35,590 --> 00:10:32,160

relayed here to the wallace control

169

00:10:35,600 --> 00:10:40,389

roughly 10 seconds to separation

170

00:10:40,399 --> 00:10:46,870

attitude is nominal

171

00:10:46,880 --> 00:10:53,509

and we have cygnus spacecraft separation

172

00:10:56,470 --> 00:10:54,630

and we are beginning the collision

173

00:10:59,110 --> 00:10:56,480

examination of winds maneuver using the

174

00:11:01,030 --> 00:10:59,120

coal gas acs

175

00:11:03,030 --> 00:11:01,040

a couple of claps there from the wallops

176

00:11:05,030 --> 00:11:03,040

range control center confirming cygnus

177

00:11:07,350 --> 00:11:05,040

has separated successfully is in its

178

00:11:09,509 --> 00:11:07,360

initial orbit here you can see a quick

179

00:11:12,150 --> 00:11:09,519

animation uh the second stage performing

180

00:11:15,350 --> 00:11:12,160

as expected cygnus separating in its

181

00:11:18,310 --> 00:11:15,360

initial orbit now of about 154 statute