



1
00:00:11,430 --> 00:00:08,790
launch conductor scott bonnet reports a

2
00:00:13,270 --> 00:00:11,440
green board everyone is go

3
00:00:15,110 --> 00:00:13,280
t minus six

4
00:00:16,950 --> 00:00:15,120
five four

5
00:00:19,670 --> 00:00:16,960
three two

6
00:00:22,310 --> 00:00:19,680
engine start one

7
00:00:25,029 --> 00:00:22,320
and liftoff of delta ii

8
00:00:25,990 --> 00:00:25,039
and noaa's joint polar satellite system

9
00:00:28,830 --> 00:00:26,000
one

10
00:00:31,189 --> 00:00:28,840
making the u.s a more weather-ready

11
00:00:33,990 --> 00:00:31,199
nation the delta ii is proceeding on a

12
00:00:36,549 --> 00:00:34,000
flight azimuth of 196 degrees just to

13
00:00:38,549 --> 00:00:36,559

the west of 180 degrees south looking

14

00:00:40,790 --> 00:00:38,559

good also seeing a good symmetric burn

15

00:00:42,709 --> 00:00:40,800

across all six ground solids

16

00:00:45,910 --> 00:00:42,719

we're listening to the voice of patrick

17

00:00:47,910 --> 00:00:45,920

moore ula flight commentator

18

00:00:50,229 --> 00:00:47,920

33 seconds into flight the delta ii

19

00:00:52,229 --> 00:00:50,239

rocket will reach mach 1 breaking news

20

00:00:53,750 --> 00:00:52,239

30 seconds chamber pressure on main

21

00:00:54,790 --> 00:00:53,760

engine and veneer engines continue to

22

00:00:56,470 --> 00:00:54,800

look good

23

00:00:57,990 --> 00:00:56,480

now passing mach 1 delta 2 is now

24

00:01:00,150 --> 00:00:58,000

supersonic

25

00:01:02,069 --> 00:01:00,160

at 49 seconds delta ii

26

00:01:05,670 --> 00:01:02,079

very symmetric burn across all six

27

00:01:07,030 --> 00:01:05,680

maximum dynamic pressure or max q

28

00:01:09,429 --> 00:01:07,040

this is the point where the mechanical

29

00:01:13,830 --> 00:01:09,439

stress in the rocket has 48 seconds max

30

00:01:17,910 --> 00:01:15,670

the six ground lit solid rocket motors

31

00:01:19,109 --> 00:01:17,920

will burn out about 64 seconds into

32

00:01:21,830 --> 00:01:19,119

flight

33

00:01:25,190 --> 00:01:23,429

the three airlet motors will ignite a

34

00:01:27,670 --> 00:01:25,200

second and a half later

35

00:01:32,469 --> 00:01:27,680

and we have burnout

36

00:01:37,270 --> 00:01:34,710

approaching the jettison of the delta ii

37

00:01:39,270 --> 00:01:37,280

graphite epoxy solid rocket motors in

38

00:01:40,550 --> 00:01:39,280

three sequences of three

39

00:01:42,710 --> 00:01:40,560

the first three will fall away one

40

00:01:45,030 --> 00:01:42,720

minute 26 seconds into flight followed a

41

00:01:48,389 --> 00:01:45,040

second later by the next three now one

42

00:01:50,230 --> 00:01:48,399

minute 25 seconds into flight

43

00:01:54,310 --> 00:01:50,240

and we have good jettison of all six

44

00:01:57,510 --> 00:01:56,149

the final three air lid motors will

45

00:01:59,670 --> 00:01:57,520

continue to burn until they are

46

00:02:02,709 --> 00:01:59,680

jettisoned two minutes 11 seconds into

47

00:02:06,550 --> 00:02:04,709

chamber pressure on the main engine both

48

00:02:08,150 --> 00:02:06,560

veneer engines continuing to remain very

49

00:02:09,830 --> 00:02:08,160

stable

50

00:02:18,309 --> 00:02:09,840

gas generator fuel unlocks injector

51
00:02:22,470 --> 00:02:20,150
and we're standing by for the jettison

52
00:02:24,150 --> 00:02:22,480
of the final three solid rocket motors

53
00:02:30,390 --> 00:02:24,160
chamber pressures on the air lit solids

54
00:02:33,110 --> 00:02:31,750
and we have burnout of the air-lit

55
00:02:34,790 --> 00:02:33,120
solids

56
00:02:41,750 --> 00:02:34,800
and good jettison of all three air-lit

57
00:02:44,710 --> 00:02:43,350
and the booster locks tank press valve

58
00:02:48,710 --> 00:02:44,720
has been opened lock's tanklet's

59
00:02:57,670 --> 00:02:50,470
two minutes 30 seconds into the flight

60
00:03:00,470 --> 00:02:59,110
and main engine and veneer engine

61
00:03:04,710 --> 00:03:00,480
chamber pressures continue to remain

62
00:03:07,589 --> 00:03:06,309
once again listening to patrick moore

63
00:03:09,350 --> 00:03:07,599

united launch alliance flight

64

00:03:11,270 --> 00:03:09,360

commentator

65

00:03:13,670 --> 00:03:11,280

now two minutes 50 seconds into flight

66

00:03:15,910 --> 00:03:13,680

now passing mach 10.

67

00:03:19,589 --> 00:03:15,920

the next major milestone is main engine

68

00:03:22,390 --> 00:03:19,599

cutoff or miko the first stage rs 27a

69

00:03:24,309 --> 00:03:22,400

main engine will be into flight

70

00:03:26,070 --> 00:03:24,319

engine operating parameters on main

71

00:03:28,229 --> 00:03:26,080

engine and both veneer engines continue

72

00:03:30,149 --> 00:03:28,239

to look good

73

00:03:37,509 --> 00:03:30,159

miko's scheduled for four minutes 20

74

00:03:41,589 --> 00:03:39,350

that will be followed

75

00:03:43,110 --> 00:03:41,599

and it's 20 seconds into flight just one

76
00:03:44,830 --> 00:03:43,120
minute remaining now until main engine

77
00:03:47,430 --> 00:03:44,840
cut

78
00:03:49,110 --> 00:03:47,440
off vehicle body rates have smoothed out

79
00:03:55,750 --> 00:03:49,120
nicely now as the vehicle continues to

80
00:03:59,509 --> 00:03:57,830
nine seconds after miko will have

81
00:04:02,229 --> 00:03:59,519
separation of the first and second

82
00:04:04,149 --> 00:04:02,239
stages of the delta

83
00:04:05,589 --> 00:04:04,159
main engine chamber pressure looks good

84
00:04:07,429 --> 00:04:05,599
both veneer engine chamber pressures

85
00:04:09,030 --> 00:04:07,439
continue to look good gas generator fuel

86
00:04:10,229 --> 00:04:09,040
unlocks injector pressures remain very

87
00:04:11,910 --> 00:04:10,239
stable

88
00:04:19,590 --> 00:04:11,920

vehicle body rates also looking very

89

00:04:23,510 --> 00:04:21,749

now at four minutes into flight about 20

90

00:04:24,230 --> 00:04:23,520

seconds remaining until main engine cut

91

00:04:27,590 --> 00:04:24,240

off

92

00:04:29,270 --> 00:04:27,600

engines will continue to burn for a few

93

00:04:30,629 --> 00:04:29,280

additional seconds to maintain attitude

94

00:04:33,670 --> 00:04:30,639

control

95

00:04:35,189 --> 00:04:33,680

leading up to stage separation

96

00:04:40,150 --> 00:04:35,199

standing by for main engine cut off

97

00:04:40,160 --> 00:04:44,150

and we have miko main engine cutoff

98

00:04:44,160 --> 00:04:48,390

and vco veneer engine cut off

99

00:04:51,510 --> 00:04:49,909

and we have good indication of stage

100

00:04:53,510 --> 00:04:51,520

separation standing by for stage two

101

00:04:55,350 --> 00:04:53,520

ignition

102

00:04:57,189 --> 00:04:55,360

the first and second stage the delta 2

103

00:04:59,670 --> 00:04:57,199

has separated

104

00:05:01,110 --> 00:04:59,680

age chamber pressure looks good