

The NASA logo, featuring the word "NASA" in a stylized font with a circular emblem containing a globe, is positioned in the upper right corner of the image.

1
00:00:04,160 --> 00:00:19,269
a minute 30 seconds

2
00:00:23,269 --> 00:00:21,109
sound suppression water system now being

3
00:00:34,150 --> 00:00:23,279
armed for release confirmation we have

4
00:00:34,160 --> 00:00:40,630
one minute

5
00:00:40,640 --> 00:00:48,709
space shuttle now on internal power

6
00:00:55,910 --> 00:00:50,709
liquid oxygen and liquid hydrogen fill

7
00:01:03,110 --> 00:00:57,670
solid rocket booster flight data

8
00:01:07,830 --> 00:01:06,230
and the handoff to atlantis's onboard

9
00:01:18,950 --> 00:01:07,840
computers

10
00:01:24,070 --> 00:01:21,190
firing chain is armed

11
00:01:26,789 --> 00:01:24,080
sound suppression water system activated

12
00:01:27,830 --> 00:01:26,799
t-minus ten nine eight

13
00:01:28,789 --> 00:01:27,840

seven

14

00:01:30,789 --> 00:01:28,799

six

15

00:01:31,910 --> 00:01:30,799

five

16

00:01:33,030 --> 00:01:31,920

three

17

00:01:34,069 --> 00:01:33,040

two

18

00:01:37,429 --> 00:01:34,079

one

19

00:01:40,870 --> 00:01:37,439

zero and liftoff of space shuttle

20

00:01:43,190 --> 00:01:40,880

atlantis on a mission to build resupply

21

00:01:45,510 --> 00:01:43,200

and to do research on the international

22

00:01:47,590 --> 00:01:45,520

space station

23

00:01:49,270 --> 00:01:47,600

houston now controlling atlantis begins

24

00:01:52,870 --> 00:01:49,280

its penultimate journey to shore off the

25

00:01:55,749 --> 00:01:54,550

atlantis now on the proper alignment for

26
00:01:57,510 --> 00:01:55,759
its eight and a half minute ride to

27
00:01:59,270 --> 00:01:57,520
orbit four and a half million pounds of

28
00:02:04,789 --> 00:01:59,280
hardware and humans taking aim on the

29
00:02:08,949 --> 00:02:06,870
30 seconds into the flight

30
00:02:10,469 --> 00:02:08,959
atlanta's almost two miles in altitude

31
00:02:12,070 --> 00:02:10,479
almost six miles downrange from the

32
00:02:16,630 --> 00:02:12,080
kennedy space center already traveling

33
00:02:20,229 --> 00:02:18,229
the three liquid fuel main engines now

34
00:02:21,589 --> 00:02:20,239
throttling back to 72 percent of rated

35
00:02:23,110 --> 00:02:21,599
performance going into the bucket

36
00:02:29,190 --> 00:02:23,120
reducing the stress on the shuttle as it

37
00:02:34,229 --> 00:02:31,830
55 seconds into the flight all systems

38
00:02:36,150 --> 00:02:34,239

operating normally 900 miles an hour the

39

00:02:38,710 --> 00:02:36,160

speed of atlantis right now six miles in

40

00:02:42,790 --> 00:02:38,720

altitude nine miles downrange

41

00:02:45,830 --> 00:02:43,830

copy go

42

00:02:47,509 --> 00:02:45,840

up the throttle up call acknowledged by

43

00:02:49,270 --> 00:02:47,519

commander charlie hobaugh joined on the

44

00:02:51,030 --> 00:02:49,280

flight deck by pilot butch wilmore

45

00:02:52,869 --> 00:02:51,040

flight engineer randy bresnik and leland

46

00:02:55,030 --> 00:02:52,879

melvin seated down on the mid deck are

47

00:02:56,550 --> 00:02:55,040

mike foreman and bobby satcher kicking

48

00:03:00,869 --> 00:02:56,560

off their work week with a monday

49

00:03:05,509 --> 00:03:02,869

one minute 30 seconds into the flight

50

00:03:07,589 --> 00:03:05,519

atlanta's 13 miles in altitude 15 miles

51
00:03:13,830 --> 00:03:07,599
downrange traveling almost 2 000 miles

52
00:03:24,550 --> 00:03:15,589
three good auxiliary power units three

53
00:03:29,190 --> 00:03:27,430
one minute 50 seconds into the flight

54
00:03:44,390 --> 00:03:29,200
10 seconds away from solid rocket

55
00:03:48,309 --> 00:03:46,390
booster officer confirms staging a good

56
00:03:50,229 --> 00:03:48,319
solid rocket booster separation guidance

57
00:03:52,550 --> 00:03:50,239
now converging atlanta steering into the

58
00:03:54,789 --> 00:03:52,560
center lane of highway 129 on route to

59
00:03:56,550 --> 00:03:54,799
the international space station

60
00:03:59,589 --> 00:03:56,560
two minutes 20 seconds into the flight

61
00:04:15,030 --> 00:03:59,599
34 miles in altitude 48 miles downrange

62
00:04:17,830 --> 00:04:16,390
the propulsion officer in mission

63
00:04:19,670 --> 00:04:17,840

control reports that the orbital

64

00:04:26,469 --> 00:04:19,680

maneuvering system engines have ignited

65

00:04:29,830 --> 00:04:28,310

atlantis flying on the singular power of

66

00:04:31,590 --> 00:04:29,840

its three liquid fuel main engines

67

00:04:33,990 --> 00:04:31,600

draining about a half a ton of fuel per

68

00:04:35,670 --> 00:04:34,000

second from the large fuel tank

69

00:04:37,909 --> 00:04:35,680

coming up on the three-minute mark into

70

00:04:40,150 --> 00:04:37,919

the flight atlanta's 46 miles in

71

00:04:43,590 --> 00:04:40,160

altitude 81 miles downrange traveling

72

00:04:45,270 --> 00:04:43,600

almost 4 000 miles an hour

73

00:04:46,629 --> 00:04:45,280

atlanta's speeding straight is an arrow

74

00:05:05,749 --> 00:04:46,639

torted state with the international

75

00:05:09,510 --> 00:05:07,430

three and a half minutes into the flight

76

00:05:10,550 --> 00:05:09,520

all of atlantis systems functioning by

77

00:05:13,830 --> 00:05:10,560

the book

78

00:05:32,790 --> 00:05:13,840

55 miles in altitude 120 miles downrange

79

00:05:32,800 --> 00:05:39,749

atlantis negative return

80

00:05:43,670 --> 00:05:41,830

atlanta's now too far downrange too high

81

00:05:45,510 --> 00:05:43,680

in altitude to return to the launch site

82

00:05:52,310 --> 00:05:45,520

in the event of an engine failure all

83

00:05:57,350 --> 00:05:54,310

four minutes 20 seconds into the flight

84

00:05:59,909 --> 00:05:57,360

atlantis now 62 miles in altitude 180

85

00:06:02,070 --> 00:05:59,919

miles downrange traveling almost 6 000

86

00:06:03,189 --> 00:06:02,080

miles an hour all systems perfor

87

00:06:05,029 --> 00:06:03,199

performing

88

00:06:06,790 --> 00:06:05,039

normally atlantis

89

00:06:10,309 --> 00:06:06,800

on course on track

90

00:06:13,749 --> 00:06:11,830

the environmental systems officer

91

00:06:15,670 --> 00:06:13,759

reports a good flash evaporator system

92

00:06:17,430 --> 00:06:15,680

activated for atlantis providing cooling

93

00:06:19,430 --> 00:06:17,440

for the shuttle's avionics until the

94

00:06:44,950 --> 00:06:19,440

payload bay doors are open about an hour

95

00:06:44,960 --> 00:06:50,950

atlantis press to ato

96

00:06:54,629 --> 00:06:52,950

that call up from capcom chris ferguson

97

00:06:57,110 --> 00:06:54,639

indicating that atlantis can now make

98

00:06:58,790 --> 00:06:57,120

minimal orbital altitude targets in the

99

00:07:00,390 --> 00:06:58,800

event of an engine failure however all

100

00:07:02,710 --> 00:07:00,400

three engines continue to perform

101
00:07:05,510 --> 00:07:02,720
normally as do the auxiliary power units

102
00:07:08,070 --> 00:07:05,520
and the three power producing fuel cells

103
00:07:11,430 --> 00:07:08,080
five and a half minutes into the flight

104
00:07:13,589 --> 00:07:11,440
atlantis now 67 miles in altitude 312

105
00:07:16,150 --> 00:07:13,599
miles downrange traveling almost 8 000

106
00:07:30,870 --> 00:07:16,160
miles an hour

107
00:07:34,150 --> 00:07:32,550
atlantis now beginning to roll to a

108
00:07:36,870 --> 00:07:34,160
heads up position the main engine

109
00:07:39,189 --> 00:07:36,880
swiveling enabling enabling the shuttle

110
00:07:40,950 --> 00:07:39,199
to uh move to a heads-up position above

111
00:07:42,309 --> 00:07:40,960
its fuel tank gaining more favorable

112
00:07:44,469 --> 00:07:42,319
communications through the tracking and

113
00:07:49,189 --> 00:07:44,479

data relay satellite system as it heads

114

00:07:55,110 --> 00:07:51,270

atlantis prestamiko single-engine

115

00:07:58,869 --> 00:07:56,309

single engine

116

00:08:00,869 --> 00:07:58,879

104. that call from capcom chris

117

00:08:02,950 --> 00:08:00,879

ferguson to commander charlie hoba

118

00:08:04,869 --> 00:08:02,960

indicating that atlantis can make normal

119

00:08:09,670 --> 00:08:04,879

orbital cutoff targets in the event of

120

00:08:09,680 --> 00:08:17,830

okay nominal shutdown

121

00:08:23,350 --> 00:08:20,390

now six minutes 45 seconds into the

122

00:08:25,189 --> 00:08:23,360

flight atlantis 66 miles in altitude

123

00:08:26,869 --> 00:08:25,199

almost 500 miles downrange from the

124

00:08:30,950 --> 00:08:26,879

kennedy space center traveling almost

125

00:08:36,469 --> 00:08:32,870

ninety seconds left in powered flight

126
00:08:36,479 --> 00:08:46,150
single engine

127
00:08:49,269 --> 00:08:47,670
coming up on the seven and a half minute

128
00:08:50,790 --> 00:08:49,279
mark into the flight the main engines

129
00:08:52,230 --> 00:08:50,800
will once again be throttled down to

130
00:08:53,990 --> 00:08:52,240
limit the stress on the shuttle and its

131
00:08:56,070 --> 00:08:54,000
six crew members to that of three times

132
00:08:57,750 --> 00:08:56,080
the effect of gravity atlantis

133
00:08:59,190 --> 00:08:57,760
approaching a speed of more than four

134
00:09:00,870 --> 00:08:59,200
miles a second

135
00:09:02,470 --> 00:09:00,880
at the time of main engine cutoff a

136
00:09:04,230 --> 00:09:02,480
minute from now atlantis will enter its

137
00:09:12,150 --> 00:09:04,240
preliminary orbit at a speed of five

138
00:09:25,829 --> 00:09:16,150

seven minutes 40 seconds into the flight

139

00:09:41,110 --> 00:09:27,509

eight minutes ten seconds into the

140

00:09:41,120 --> 00:09:48,550

standing by for main engine cutoff

141

00:09:51,990 --> 00:09:50,070

main engine cutoff confirmed by the

142

00:10:07,990 --> 00:09:52,000

booster officer standing by for external

143

00:10:11,750 --> 00:10:09,670

and the bird's eye view from the

144

00:10:13,269 --> 00:10:11,760

external tank camera of external tank

145

00:10:16,470 --> 00:10:13,279

separation atlantis now in its

146

00:10:19,829 --> 00:10:17,990

commander charlie hobaugh will now

147

00:10:21,670 --> 00:10:19,839

maneuver atlantis so that cameras

148

00:10:23,750 --> 00:10:21,680

embedded in the shuttle's umbilical well

149

00:10:25,910 --> 00:10:23,760

can perform photography of the discarded

150

00:10:28,150 --> 00:10:25,920

external fuel tank and mike foreman and

151

00:10:30,230 --> 00:10:28,160

Ieland melvin are about to use digital

152

00:10:31,670 --> 00:10:30,240

still and video cameras to capture

153

00:10:34,230 --> 00:10:31,680

hand-held imagery of the tank for

154

00:10:36,069 --> 00:10:34,240

downlink a few hours from now a flawless

155

00:10:38,310 --> 00:10:36,079

climb to orbit for the shuttle atlantis

156

00:10:51,829 --> 00:10:38,320

and its six crew members on route now to

157

00:10:56,389 --> 00:10:53,269

fergie will meet you in the post on

158

00:10:56,399 --> 00:11:27,750

and we'll see you there scorch