



1
00:00:07,269 --> 00:00:04,870
we do have live coverage now of the crew

2
00:00:10,950 --> 00:00:07,279
getting suited up we have commander ken

3
00:00:12,950 --> 00:00:10,960
bowersox this is his fourth flight

4
00:00:14,470 --> 00:00:12,960
he has been an astronaut for about 10

5
00:00:15,910 --> 00:00:14,480
years

6
00:00:18,070 --> 00:00:15,920
and bauer sox will have overall

7
00:00:20,070 --> 00:00:18,080
responsibility for commanding the flight

8
00:00:29,509 --> 00:00:20,080
he was the pilot for the first hubble

9
00:00:33,910 --> 00:00:32,069
and we have pilot horowitz

10
00:00:35,830 --> 00:00:33,920
as pilot he will assist powersocks at

11
00:00:37,430 --> 00:00:35,840
the flight controls this is his second

12
00:00:39,030 --> 00:00:37,440
flight

13
00:00:40,549 --> 00:00:39,040

he will assist powersocks during the

14

00:00:43,510 --> 00:00:40,559

rendezvous and retrieval of the hubble

15

00:00:45,590 --> 00:00:43,520

space telescope on flight day three

16

00:00:48,069 --> 00:00:45,600

and also with the reboosting of hubble

17

00:00:49,750 --> 00:00:48,079

if available fuel permits and of course

18

00:00:51,189 --> 00:00:49,760

with the shuttle

19

00:00:54,150 --> 00:00:51,199

landing the

20

00:00:56,869 --> 00:00:54,160

night landing that's planned here at ksc

21

00:00:58,470 --> 00:00:56,879

and we have mission specialist mark lee

22

00:01:01,590 --> 00:00:58,480

across the room we've got the rest of

23

00:01:04,229 --> 00:01:01,600

the crew mission specialist joe tanner

24

00:01:05,830 --> 00:01:04,239

tanner's making his second flight

25

00:01:07,910 --> 00:01:05,840

he will be this will be his first

26
00:01:09,670 --> 00:01:07,920
spacewalk he'll be teaming up with greg

27
00:01:10,870 --> 00:01:09,680
harbaugh and replacing one of the three

28
00:01:12,469 --> 00:01:10,880
fine guidance

29
00:01:15,670 --> 00:01:12,479
sensors on hubble

30
00:01:21,030 --> 00:01:17,590
he will also help replace the optical

31
00:01:23,590 --> 00:01:21,040
electronics enhancement kit in a failed

32
00:01:25,270 --> 00:01:23,600
engineering and science tape recorder

33
00:01:26,870 --> 00:01:25,280
on flight day four

34
00:01:34,230 --> 00:01:26,880
the team will replace the solar dry

35
00:01:37,429 --> 00:01:36,230
and we've got mission specialist steve

36
00:01:38,950 --> 00:01:37,439
hawley

37
00:01:42,230 --> 00:01:38,960
designated

38
00:01:44,389 --> 00:01:42,240

holly's making his uh

39

00:01:45,910 --> 00:01:44,399

fourth flight today

40

00:01:48,069 --> 00:01:45,920

he's serving as the flight engineer and

41

00:01:49,990 --> 00:01:48,079

will assist the commander and pilot with

42

00:01:52,149 --> 00:01:50,000

ascent and re-entry checklist and

43

00:01:53,830 --> 00:01:52,159

monitoring the vehicle systems

44

00:02:00,550 --> 00:01:53,840

holley used the robot arm to deploy

45

00:02:04,310 --> 00:02:02,870

and we have a mission specialist greg

46

00:02:06,630 --> 00:02:04,320

harbaugh

47

00:02:08,710 --> 00:02:06,640

he's making his fourth flight he will be

48

00:02:11,110 --> 00:02:08,720

teamed up with joe tanner to perform two

49

00:02:13,350 --> 00:02:11,120

of the space walks harbaugh performed a

50

00:02:15,670 --> 00:02:13,360

spacewalk on sts-54

51
00:02:20,790 --> 00:02:15,680
and was the backup eva crew member for

52
00:02:25,030 --> 00:02:22,550
and we have mission specialist five

53
00:02:26,869 --> 00:02:25,040
steve smith making his second flight

54
00:02:29,190 --> 00:02:26,879
he'll be a first-time spacewalker on

55
00:02:31,670 --> 00:02:29,200
this flight he'll be teamed up with mark

56
00:02:33,110 --> 00:02:31,680
lee in replacing the two instruments

57
00:03:02,710 --> 00:02:33,120
that have a combined weight of about

58
00:03:06,550 --> 00:03:04,710
the gaseous oxygen vent hood at the top

59
00:03:19,190 --> 00:03:06,560
of the tank is being retracted away at

60
00:03:24,630 --> 00:03:22,070
t-minus 35 seconds

61
00:03:28,070 --> 00:03:24,640
t-minus 15 seconds and counting all

62
00:03:29,110 --> 00:03:28,080
systems go steam is still 10

63
00:03:30,229 --> 00:03:29,120

9

64

00:03:33,670 --> 00:03:30,239

8

65

00:03:34,789 --> 00:03:33,680

7 we have a go for engine start five

66

00:03:36,149 --> 00:03:34,799

four

67

00:03:37,430 --> 00:03:36,159

three

68

00:03:38,390 --> 00:03:37,440

two

69

00:03:41,190 --> 00:03:38,400

one

70

00:03:43,509 --> 00:03:41,200

ignition and liftoff discovery now on

71

00:03:45,190 --> 00:03:43,519

its way to service nasa's hubble space

72

00:03:48,949 --> 00:03:45,200

telescope

73

00:03:54,710 --> 00:03:50,789

we're all programming

74

00:03:57,910 --> 00:03:56,309

roll maneuver is complete aboard

75

00:04:00,309 --> 00:03:57,920

discovery the vehicle is now in a heads

76

00:04:03,910 --> 00:04:00,319

down position on course for a 28.5

77

00:04:05,990 --> 00:04:03,920

degree 309 nautical mile orbit

78

00:04:08,149 --> 00:04:06,000

three main engines beginning to throttle

79

00:04:09,910 --> 00:04:08,159

down now as the orbiter prepares to pass

80

00:04:11,429 --> 00:04:09,920

through the area of maximum dynamic

81

00:04:13,270 --> 00:04:11,439

pressure on the vehicle in the lower

82

00:04:15,750 --> 00:04:13,280

atmosphere

83

00:04:19,830 --> 00:04:15,760

the three engines now at 67 percent of

84

00:04:24,150 --> 00:04:22,230

solid rocket boosters beginning to tail

85

00:04:27,270 --> 00:04:24,160

off with their chamber pressure standing

86

00:05:54,469 --> 00:04:27,280

by for burnout and separation of the

87

00:05:59,189 --> 00:05:56,629

switching views now to the color end

88

00:06:01,270 --> 00:05:59,199

effector camera this looking directly at

89

00:06:43,990 --> 00:06:01,280

the bottom of the telescope as it comes

90

00:06:44,000 --> 00:07:31,990

and we see that doc

91

00:07:32,000 --> 00:07:35,670

go ahead discovery

92

00:07:38,870 --> 00:07:37,029

yeah i wish you could see the expression

93

00:07:40,070 --> 00:07:38,880

on dr stevie's face

94

00:08:24,629 --> 00:07:40,080

looks like he just shook hands with an

95

00:08:24,639 --> 00:08:41,829

got a good picture

96

00:08:47,829 --> 00:08:43,190

you guys would probably rather look at

97

00:08:47,839 --> 00:08:54,070

sure it's pretty

98

00:09:01,030 --> 00:08:55,829

discovery time for the first two

99

00:09:03,269 --> 00:09:02,470

all right we're ready to go fix that

100

00:09:06,070 --> 00:09:03,279

thing

101
00:09:26,710 --> 00:09:06,080
hey and uh i gotta compliment you on the

102
00:09:26,720 --> 00:09:30,630
houston discovery

103
00:09:40,310 --> 00:09:32,790
go ahead beautiful picture by the way

104
00:09:40,320 --> 00:09:44,630
all right thank you

105
00:09:58,230 --> 00:09:46,070
let's see if you bring it forward

106
00:10:15,509 --> 00:09:59,990
stop

107
00:10:15,519 --> 00:10:31,269
sure did about that

108
00:10:31,279 --> 00:11:17,990
nice and slow

109
00:11:22,470 --> 00:11:19,990
you can see the placement now of

110
00:11:25,110 --> 00:11:22,480
nick moss and that

111
00:11:28,470 --> 00:11:25,120
angle iron that right angle guide rail

112
00:11:30,710 --> 00:11:28,480
at the bottom right

113
00:11:32,870 --> 00:11:30,720

steve smith is looking down the upper

114

00:11:40,150 --> 00:11:32,880

left-hand corner

115

00:11:40,160 --> 00:11:54,470

pitch maybe more degrees

116

00:11:58,550 --> 00:11:56,550

discover houston if cameras alpha and

117

00:12:07,030 --> 00:11:58,560

charlie are not in use at this time we'd

118

00:12:07,040 --> 00:12:17,350

that's complete

119

00:12:17,360 --> 00:12:26,949

forward a foot

120

00:12:32,150 --> 00:12:28,470

yeah we'll tell him that we'll promise

121

00:12:36,829 --> 00:12:35,990

okay dr stevie our graduates on the arm

122

00:13:07,430 --> 00:12:36,839

go

123

00:13:07,440 --> 00:13:11,030

discovery houston for joe

124

00:13:15,590 --> 00:13:12,470

yes good

125

00:13:17,110 --> 00:13:15,600

um we just got tv back in time to see

126

00:13:20,710 --> 00:13:17,120

you come out on the beginning of your

127

00:13:22,310 --> 00:13:20,720

very first eva welcome to space and uh

128

00:13:42,790 --> 00:13:22,320

it was nice seeing a big smile on your

129

00:13:47,590 --> 00:13:45,590

bad wheels are a little sticky

130

00:13:58,710 --> 00:13:47,600

the slightest yard yesterday got me too

131

00:14:03,110 --> 00:14:00,710

the orbiter's now flying out over the

132

00:14:06,870 --> 00:14:03,120

gulf of mexico time to touch down 14

133

00:14:11,829 --> 00:14:06,880

minutes 30 seconds present altitude 35

134

00:14:11,839 --> 00:14:24,710

800 miles from the landing site

135

00:14:28,710 --> 00:14:26,629

view looking east from the mission

136

00:14:30,230 --> 00:14:28,720

control center

137

00:14:31,750 --> 00:14:30,240

as discovery streaks through the

138

00:14:46,230 --> 00:14:31,760

atmosphere

139

00:14:57,110 --> 00:14:48,710

descending at a rate of 140 feet per

140

00:14:57,120 --> 00:15:08,230

gear is down and locked

141

00:15:08,240 --> 00:15:18,870

main gear touchdown

142

00:15:23,670 --> 00:15:21,430

nose gear touchdown

143

00:15:25,350 --> 00:15:23,680

discovery rolling out on runway 1-5 at

144

00:15:28,710 --> 00:15:25,360

the kennedy space center

145

00:15:30,629 --> 00:15:28,720

completing 150 orbits traveling 4.1

146

00:15:32,790 --> 00:15:30,639

million miles

147

00:15:34,389 --> 00:15:32,800

ending the second sub

148

00:15:47,430 --> 00:15:34,399

servicing mission to the hubble space

149

00:15:47,440 --> 00:16:00,629

so

150

00:16:04,629 --> 00:16:02,470

we'll stop houston

151

00:16:06,710 --> 00:16:04,639

copy will stop discovery welcome back

152

00:16:08,550 --> 00:16:06,720

after a successful second hubble

153

00:16:11,350 --> 00:16:08,560

servicing mission made those five