
HST

1
00:00:05,829 --> 00:00:03,990
you are once again looking at a live

2
00:00:07,829 --> 00:00:05,839
view of the space telescope operations

3
00:00:10,310 --> 00:00:07,839
control center at nasa's goddard space

4
00:00:12,709 --> 00:00:10,320
flight center in greenbelt maryland

5
00:00:15,589 --> 00:00:12,719
the fifth of the five planned spacewalks

6
00:00:17,750 --> 00:00:15,599
for the sts-125 mission was completed

7
00:00:20,070 --> 00:00:17,760
earlier today with astronauts john

8
00:00:23,029 --> 00:00:20,080
grunsfeld and drew feustel performing a

9
00:00:24,710 --> 00:00:23,039
trio of task designed to extend hubble's

10
00:00:26,470 --> 00:00:24,720
operating life

11
00:00:28,550 --> 00:00:26,480
we spoke with mission operations manager

12
00:00:30,390 --> 00:00:28,560
keith wallis after his team had

13
00:00:32,950 --> 00:00:30,400

concluded their shift to get his

14
00:00:34,549 --> 00:00:32,960
reaction to both today's activities as

15
00:00:36,549 --> 00:00:34,559
well as the upcoming big event on

16
00:00:38,389 --> 00:00:36,559
tuesday morning when the shuttle crew

17
00:00:41,510 --> 00:00:38,399
will say goodbye to the telescope for

18
00:00:45,350 --> 00:00:43,350
so today was our flight day eight it was

19
00:00:47,270 --> 00:00:45,360
our eva 5 the final spacewalk of the

20
00:00:49,350 --> 00:00:47,280
mission so we had a couple things we

21
00:00:51,590 --> 00:00:49,360
still had accomplished we had to put in

22
00:00:53,510 --> 00:00:51,600
our new batteries we put in the first

23
00:00:55,029 --> 00:00:53,520
three batteries early in the mission and

24
00:00:56,790 --> 00:00:55,039
now we had three more to go and again

25
00:00:58,229 --> 00:00:56,800
these are replacing batteries that are

26
00:00:59,029 --> 00:00:58,239
19 years old so they've been running

27
00:01:01,029 --> 00:00:59,039
down

28
00:01:02,470 --> 00:01:01,039
they've been working fine but they're 19

29
00:01:04,710 --> 00:01:02,480
year old batteries so you want new ones

30
00:01:06,390 --> 00:01:04,720
in we had to get that test accomplished

31
00:01:07,910 --> 00:01:06,400
we also had one of our fine guidance

32
00:01:09,750 --> 00:01:07,920
sensors and this gives us the incredible

33
00:01:11,190 --> 00:01:09,760
pointing capability now these aren't

34
00:01:13,429 --> 00:01:11,200
small cameras these are about the size

35
00:01:15,270 --> 00:01:13,439
of a grand piano weigh about 900 pounds

36
00:01:17,190 --> 00:01:15,280
so we have that task and there's one

37
00:01:19,510 --> 00:01:17,200
task we didn't get done yesterday we

38
00:01:21,190 --> 00:01:19,520

need to put these layers this

39
00:01:23,109 --> 00:01:21,200
metal layer stainless steel layer on the

40
00:01:23,910 --> 00:01:23,119
outside the telescope because space is a

41
00:01:25,429 --> 00:01:23,920
very

42
00:01:26,789 --> 00:01:25,439
damaging environment and it's been

43
00:01:28,469 --> 00:01:26,799
really ripping apart some of the

44
00:01:30,710 --> 00:01:28,479
insulation on our critical electronics

45
00:01:32,310 --> 00:01:30,720
bays so we had three yet that we wanted

46
00:01:34,710 --> 00:01:32,320
to do one from yesterday and two more

47
00:01:36,950 --> 00:01:34,720
today so those were the tasks happy to

48
00:01:39,429 --> 00:01:36,960
say that every single thing got done and

49
00:01:40,789 --> 00:01:39,439
the spacecraft is in fantastic shape

50
00:01:42,230 --> 00:01:40,799
well right now we have a couple more

51
00:01:44,230 --> 00:01:42,240
tasks that we still have to accomplish

52
00:01:45,910 --> 00:01:44,240
this day every day we do we call an

53
00:01:47,350 --> 00:01:45,920
aliveness test and a functional test and

54
00:01:48,950 --> 00:01:47,360
a liveness test to make sure that

55
00:01:50,550 --> 00:01:48,960
something just turns on and then a

56
00:01:52,870 --> 00:01:50,560
functional test to make sure it really

57
00:01:54,469 --> 00:01:52,880
works as we intend for the long haul so

58
00:01:56,630 --> 00:01:54,479
right now we're doing a functional test

59
00:01:58,789 --> 00:01:56,640
on the batteries everything so far looks

60
00:02:01,429 --> 00:01:58,799
great but it's a more in-depth test that

61
00:02:02,789 --> 00:02:01,439
we do after the crew's in for the night

62
00:02:04,310 --> 00:02:02,799
then after that we're going to do the

63
00:02:06,069 --> 00:02:04,320

functional test on a fine guidance

64
00:02:07,670 --> 00:02:06,079
sensor pretty much the same thing just

65
00:02:09,190 --> 00:02:07,680
make sure that it's working fine for the

66
00:02:11,350 --> 00:02:09,200
long term and that's going to take about

67
00:02:13,270 --> 00:02:11,360
an hour it's not a short test so we have

68
00:02:14,630 --> 00:02:13,280
to finish up those tasks tonight and

69
00:02:15,670 --> 00:02:14,640
then we got to get ready for tomorrow

70
00:02:17,270 --> 00:02:15,680
the big day when they're going to

71
00:02:18,710 --> 00:02:17,280
release us one of the things that we

72
00:02:20,390 --> 00:02:18,720
have to do overnight is charge up those

73
00:02:22,150 --> 00:02:20,400
batteries even though the batteries are

74
00:02:23,589 --> 00:02:22,160
in they're not all charged up yet and

75
00:02:25,350 --> 00:02:23,599
before we get released from the order

76
00:02:26,790 --> 00:02:25,360
orbiter we want the batteries at their

77
00:02:28,070 --> 00:02:26,800
full capacity

78
00:02:29,830 --> 00:02:28,080
so overnight they're going to charge the

79
00:02:31,589 --> 00:02:29,840
batteries and then when the crew wakes

80
00:02:33,509 --> 00:02:31,599
up tomorrow it's just a series of

81
00:02:35,190 --> 00:02:33,519
activities getting ready before they

82
00:02:36,949 --> 00:02:35,200
grapple with us we have to turn off some

83
00:02:38,470 --> 00:02:36,959
critical electronics then they're going

84
00:02:40,869 --> 00:02:38,480
to get the arm it's going to go and grab

85
00:02:43,350 --> 00:02:40,879
hst again and hold it out it's going to

86
00:02:45,110 --> 00:02:43,360
hold out hst when the time is right when

87
00:02:46,630 --> 00:02:45,120
exactly the right orientation they're

88
00:02:47,750 --> 00:02:46,640

going to let us go and they're going to

89
00:02:49,350 --> 00:02:47,760
do some burns and then they're going to

90
00:02:50,710 --> 00:02:49,360
go away from us and we're a free-flying

91
00:02:52,949 --> 00:02:50,720
telescope again

92
00:02:54,390 --> 00:02:52,959
but we're still busy our telescope is

93
00:02:56,229 --> 00:02:54,400
there but we have to commission it we

94
00:02:57,830 --> 00:02:56,239
have to start bringing it up again turn

95
00:02:59,750 --> 00:02:57,840
those electronics on make sure we're

96
00:03:01,350 --> 00:02:59,760
pointed in the right direction make sure

97
00:03:03,430 --> 00:03:01,360
that our batteries are charging exactly

98
00:03:05,430 --> 00:03:03,440
as we wanted to so we have a series of

99
00:03:06,949 --> 00:03:05,440
activities after we get released there's

100
00:03:09,190 --> 00:03:06,959
still at least two or three hours of

101
00:03:11,030 --> 00:03:09,200
very intense commanding we have to do to

102
00:03:12,790 --> 00:03:11,040
get ourselves for a state where we can

103
00:03:14,790 --> 00:03:12,800
last for a little bit longer and then

104
00:03:16,710 --> 00:03:14,800
over actually the next four five six

105
00:03:18,309 --> 00:03:16,720
months we'll be testing out all these

106
00:03:20,070 --> 00:03:18,319
new toys these wonderful new instruments

107
00:03:21,589 --> 00:03:20,080
that we have on board and making sure

108
00:03:23,030 --> 00:03:21,599
they work right so it's going to be

109
00:03:24,470 --> 00:03:23,040
about five or six months before

110
00:03:25,990 --> 00:03:24,480
everything is back completely to normal

111
00:03:28,309 --> 00:03:26,000
again

112
00:03:30,630 --> 00:03:28,319
remember take a moment here this is it

113
00:03:33,190 --> 00:03:30,640

the last space walk on hubble

114
00:03:34,550 --> 00:03:33,200
and maybe our last visit

115
00:03:35,830 --> 00:03:34,560
to space so

116
00:03:38,070 --> 00:03:35,840
enjoy this

117
00:03:40,309 --> 00:03:38,080
uh you earned it

118
00:03:42,070 --> 00:03:40,319
the general mood is nothing short of

119
00:03:44,390 --> 00:03:42,080
euphoric i mean it's just amazing you

120
00:03:46,630 --> 00:03:44,400
think we were five days ago and hubble

121
00:03:48,550 --> 00:03:46,640
was still doing great but now we have

122
00:03:50,149 --> 00:03:48,560
four brand new instruments and just not

123
00:03:52,229 --> 00:03:50,159
just new instruments incredible

124
00:03:54,149 --> 00:03:52,239
instruments the two that we fixed up

125
00:03:55,509 --> 00:03:54,159
they were older but they were fantastic

126
00:03:57,589 --> 00:03:55,519
and some of our best pictures have come

127
00:03:59,350 --> 00:03:57,599
from them best discoveries these two new

128
00:04:01,509 --> 00:03:59,360
ones are even another generation beyond

129
00:04:03,509 --> 00:04:01,519
that it's just fantastic and then just

130
00:04:05,190 --> 00:04:03,519
the engineering side of how all this

131
00:04:07,589 --> 00:04:05,200
your car runs how well our telescope

132
00:04:09,429 --> 00:04:07,599
runs we have new batteries we have new

133
00:04:11,750 --> 00:04:09,439
gyros we have this new insulation

134
00:04:13,030 --> 00:04:11,760
outside we have a new pointing system

135
00:04:15,509 --> 00:04:13,040
it's fantastic

136
00:04:17,270 --> 00:04:15,519
euphoria best way to describe it here we

137
00:04:19,189 --> 00:04:17,280
are we've been working literally for

138
00:04:20,870 --> 00:04:19,199

seven years to get this thing done since

139
00:04:22,310 --> 00:04:20,880
the last servicing mission and there's

140
00:04:24,150 --> 00:04:22,320
been ups and downs and trials and

141
00:04:25,430 --> 00:04:24,160
tribulations it's been a roller coaster

142
00:04:27,030 --> 00:04:25,440
of emotion

143
00:04:29,189 --> 00:04:27,040
seven years leading up and it's been a

144
00:04:30,550 --> 00:04:29,199
roller coaster of emotions during this

145
00:04:32,310 --> 00:04:30,560
mission we've had problems we've

146
00:04:34,390 --> 00:04:32,320
overcome the problems we have more

147
00:04:36,150 --> 00:04:34,400
problems we've overcome those problems

148
00:04:38,550 --> 00:04:36,160
and everything's been done

149
00:04:40,550 --> 00:04:38,560
so it's a it's a relief you know there's

150
00:04:42,629 --> 00:04:40,560
just huge weight off our shoulders

151
00:04:45,430 --> 00:04:42,639
it's wonderful because we've been part

152
00:04:47,110 --> 00:04:45,440
of this history of making the telescope

153
00:04:48,310 --> 00:04:47,120
something that it's even better than it

154
00:04:50,070 --> 00:04:48,320
was before

155
00:04:52,870 --> 00:04:50,080
so it's relief it's excitement it's

156
00:04:54,310 --> 00:04:52,880
euphoria it's fatigue it's about 35

157
00:04:56,710 --> 00:04:54,320
other emotions i can't describe right

158
00:04:59,030 --> 00:04:56,720
now

159
00:05:00,870 --> 00:04:59,040
so after almost 40 hours of spacewalks

160
00:05:02,629 --> 00:05:00,880
over five days the hubble space

161
00:05:05,110 --> 00:05:02,639
telescope for the first time since it

162
00:05:06,950 --> 00:05:05,120
was deployed has a full complement of

163
00:05:08,870 --> 00:05:06,960

science instruments

164
00:05:10,550 --> 00:05:08,880
while activities here in the stock in

165
00:05:12,629 --> 00:05:10,560
support of the telescope and the space

166
00:05:14,550 --> 00:05:12,639
shuttle are in their final hours the

167
00:05:16,790 --> 00:05:14,560
science mission orbital verification

168
00:05:18,310 --> 00:05:16,800
work involving detailed checkouts

169
00:05:20,710 --> 00:05:18,320
alignments and focusing of the new

170
00:05:22,870 --> 00:05:20,720
instruments is expected to take several

171
00:05:25,270 --> 00:05:22,880
months hubble scientists expect the

172
00:05:27,270 --> 00:05:25,280
first new images to be released in

173
00:05:30,029 --> 00:05:27,280
september

174
00:05:33,189 --> 00:05:30,039
after more than 104

175
00:05:34,950 --> 00:05:33,199
225 orbits since the telescope first

176
00:05:37,189 --> 00:05:34,960
rode into space in

177
00:05:39,110 --> 00:05:37,199
space shuttle discoveries payload bay

178
00:05:41,430 --> 00:05:39,120
hubble stands poised to provide

179
00:05:43,830 --> 00:05:41,440
incredible images and new discoveries of

180
00:05:45,430 --> 00:05:43,840
our universe as it continues its journey

181
00:05:47,270 --> 00:05:45,440
of exploration

182
00:05:49,590 --> 00:05:47,280
we will now return to mission control in

183
00:05:51,830 --> 00:05:49,600
houston for continuing nasa tv coverage

184
00:05:54,150 --> 00:05:51,840
of the flight of atlantis up next on