



Space Telescope Operations Control Center  
NASA Goddard Space Flight Center



1  
00:00:04,070 --> 00:00:01,990  
from nasa's goddard space flight center

2  
00:00:07,190 --> 00:00:04,080  
in greenbelt maryland this is the flight

3  
00:00:09,190 --> 00:00:07,200  
day 7 stock update report

4  
00:00:11,030 --> 00:00:09,200  
activities associated with sunday's

5  
00:00:13,749 --> 00:00:11,040  
spacewalk and the repair of the space

6  
00:00:16,390 --> 00:00:13,759  
telescope imaging spectrograph wound up

7  
00:00:18,070 --> 00:00:16,400  
testing both minds and muscles mission

8  
00:00:20,470 --> 00:00:18,080  
operations manager keith wally has

9  
00:00:24,150 --> 00:00:20,480  
provided a recap of flight day seven

10  
00:00:26,550 --> 00:00:24,160  
shortly after he finished his shift

11  
00:00:28,630 --> 00:00:26,560  
so today we had the fourth eva and

12  
00:00:30,870 --> 00:00:28,640  
hubble's personality is showing again it

13  
00:00:32,069 --> 00:00:30,880

just seems like it's mad at us this is

14

00:00:34,150 --> 00:00:32,079

our last servicing mission so it's

15

00:00:36,389 --> 00:00:34,160

starting to act up so today we had two

16

00:00:38,229 --> 00:00:36,399

things on tap we're going to repair this

17

00:00:39,990 --> 00:00:38,239

this instrument the space telescope

18

00:00:41,590 --> 00:00:40,000

imaging spectrograph and then we're

19

00:00:44,709 --> 00:00:41,600

going to put on this outer blanket layer

20

00:00:47,029 --> 00:00:44,719

to repair some of the outside damage

21

00:00:49,590 --> 00:00:47,039

well it didn't go exactly as planned

22

00:00:51,830 --> 00:00:49,600

these this repair started off great the

23

00:00:53,029 --> 00:00:51,840

crew got going on it right on time and

24

00:00:55,189 --> 00:00:53,039

they started taking out all the

25

00:00:57,110 --> 00:00:55,199

different screws including 120 captive

26  
00:00:59,270 --> 00:00:57,120  
screws they were going to take out but

27  
00:01:00,790 --> 00:00:59,280  
while doing it one handle that was in

28  
00:01:02,549 --> 00:01:00,800  
place and it was

29  
00:01:04,229 --> 00:01:02,559  
in the way of the board that we were

30  
00:01:05,670 --> 00:01:04,239  
going to have to take off to get into

31  
00:01:07,670 --> 00:01:05,680  
the instrument

32  
00:01:09,270 --> 00:01:07,680  
wouldn't come loose try taking that

33  
00:01:11,429 --> 00:01:09,280  
screw off the crew tried different

34  
00:01:13,830 --> 00:01:11,439  
methods they changed the bits out and it

35  
00:01:15,749 --> 00:01:13,840  
just wouldn't work we spent a long time

36  
00:01:17,510 --> 00:01:15,759  
wrestling with this and i say wrestling

37  
00:01:19,270 --> 00:01:17,520  
literally wrestling with it because

38  
00:01:20,789 --> 00:01:19,280

finally the solution to get this off was

39

00:01:23,109 --> 00:01:20,799

that that one screw that couldn't get

40

00:01:24,230 --> 00:01:23,119

out so the crew was going to pry this

41

00:01:25,749 --> 00:01:24,240

bar off

42

00:01:27,670 --> 00:01:25,759

and we tested it here at goddard

43

00:01:29,749 --> 00:01:27,680

actually we had a spare and we had a

44

00:01:31,590 --> 00:01:29,759

spare bar and we had some people here at

45

00:01:33,190 --> 00:01:31,600

goddard and they put this bar and they

46

00:01:34,710 --> 00:01:33,200

wrestled with it and they pulled it off

47

00:01:36,870 --> 00:01:34,720

and they saw how much force it could

48

00:01:38,870 --> 00:01:36,880

take and then they had the crew do that

49

00:01:41,030 --> 00:01:38,880

also and they told them you could do it

50

00:01:42,789 --> 00:01:41,040

crew did it fantastically mike massimino

51  
00:01:45,109 --> 00:01:42,799  
got it he wrestled it off

52  
00:01:46,710 --> 00:01:45,119  
and the rest of the repair went on we

53  
00:01:48,310 --> 00:01:46,720  
lost a lot of time he lost about an hour

54  
00:01:49,749 --> 00:01:48,320  
and a half doing that

55  
00:01:51,830 --> 00:01:49,759  
but it all got done it all got

56  
00:01:53,670 --> 00:01:51,840  
accomplished and i'm really happy to say

57  
00:01:55,990 --> 00:01:53,680  
that we now have this instrument working

58  
00:01:57,990 --> 00:01:56,000  
again we did our aliveness test and it's

59  
00:02:00,310 --> 00:01:58,000  
working perfectly so here just like last

60  
00:02:02,709 --> 00:02:00,320  
night with acs another instrument that

61  
00:02:03,670 --> 00:02:02,719  
was not working has now been repaired

62  
00:02:05,190 --> 00:02:03,680  
again

63  
00:02:06,389 --> 00:02:05,200

it was a tough day because when you're

64

00:02:08,229 --> 00:02:06,399

seeing this you're hoping everything

65

00:02:10,070 --> 00:02:08,239

gets done everything gets accomplished

66

00:02:11,510 --> 00:02:10,080

and one of the results of that not

67

00:02:13,190 --> 00:02:11,520

happening was the fact that now this

68

00:02:15,510 --> 00:02:13,200

outer blanket layer won't get done until

69

00:02:17,830 --> 00:02:15,520

tomorrow but in the big scheme of things

70

00:02:19,990 --> 00:02:17,840

we have this incredible multi hundred

71

00:02:20,790 --> 00:02:20,000

million dollar instrument working again

72

00:02:22,390 --> 00:02:20,800

so

73

00:02:23,670 --> 00:02:22,400

99 success

74

00:02:25,430 --> 00:02:23,680

a little bit will have to defer until

75

00:02:26,949 --> 00:02:25,440

tomorrow but overall

76

00:02:29,110 --> 00:02:26,959

fantastic day

77

00:02:30,229 --> 00:02:29,120

so tomorrow is our final spacewalk day

78

00:02:31,830 --> 00:02:30,239

and it's the final chance we're going to

79

00:02:33,270 --> 00:02:31,840

get to work on hubble and we have two

80

00:02:35,350 --> 00:02:33,280

things actually three or four things

81

00:02:37,830 --> 00:02:35,360

planned the first big test that we have

82

00:02:39,830 --> 00:02:37,840

for the day is our batteries we have six

83

00:02:41,190 --> 00:02:39,840

batteries onboard hubble we earlier in

84

00:02:43,110 --> 00:02:41,200

the mission we changed out three of them

85

00:02:44,949 --> 00:02:43,120

and they're working fantastically but we

86

00:02:46,869 --> 00:02:44,959

have three more of those old 1990

87

00:02:48,550 --> 00:02:46,879

batteries on board so we need to change

88

00:02:50,390 --> 00:02:48,560

those out we expect it to go just as

89

00:02:51,910 --> 00:02:50,400

smoothly as it did the first day

90

00:02:53,190 --> 00:02:51,920

after we get the batteries changed out

91

00:02:54,630 --> 00:02:53,200

we'll have a whole compliment new

92

00:02:56,949 --> 00:02:54,640

complement of batteries will be set for

93

00:02:58,869 --> 00:02:56,959

many years to go the other task is the

94

00:03:00,869 --> 00:02:58,879

fine guidance sensor now these fine

95

00:03:02,790 --> 00:03:00,879

guidance sensors they give us that very

96

00:03:04,869 --> 00:03:02,800

accurate pointing accuracy in fact it's

97

00:03:06,390 --> 00:03:04,879

so accurate you could take a picture of

98

00:03:08,070 --> 00:03:06,400

a dime on top of the empire state

99

00:03:10,070 --> 00:03:08,080

building from washington dc it's

100

00:03:11,589 --> 00:03:10,080

incredible the accuracy and this is one

101  
00:03:12,790 --> 00:03:11,599  
of those instruments that gives us that

102  
00:03:14,869 --> 00:03:12,800  
capability

103  
00:03:16,550 --> 00:03:14,879  
at least about 900 pounds it's not small

104  
00:03:19,030 --> 00:03:16,560  
it's pretty big the size of a grand

105  
00:03:20,710 --> 00:03:19,040  
piano so that's going to happen tomorrow

106  
00:03:22,869 --> 00:03:20,720  
and then after that these outer blanket

107  
00:03:25,190 --> 00:03:22,879  
layers the outer layers that we have on

108  
00:03:27,270 --> 00:03:25,200  
the telescope of captain and teflon

109  
00:03:29,430 --> 00:03:27,280  
they've been peeling away over the years

110  
00:03:31,190 --> 00:03:29,440  
in fact you can see them just popping up

111  
00:03:33,110 --> 00:03:31,200  
we changed out four of them in the past

112  
00:03:34,869 --> 00:03:33,120  
on our critical electronic phase we want

113  
00:03:36,309 --> 00:03:34,879

to get two more of them tomorrow and

114

00:03:38,309 --> 00:03:36,319

then we'll be set for the long term so

115

00:03:40,070 --> 00:03:38,319

it's still a full day we have a lot to

116

00:03:41,750 --> 00:03:40,080

do but we think we can still get it done

117

00:03:43,350 --> 00:03:41,760

so this instrument was one of those

118

00:03:45,190 --> 00:03:43,360

roller coasters just like the other day

119

00:03:47,830 --> 00:03:45,200

like we had with wide field like we had

120

00:03:49,750 --> 00:03:47,840

with the gyros it was really painful to

121

00:03:51,509 --> 00:03:49,760

watch to see mass struggling with that

122

00:03:52,789 --> 00:03:51,519

trying to get it done he just wanted to

123

00:03:55,030 --> 00:03:52,799

help him but there's so much we could do

124

00:03:56,949 --> 00:03:55,040

from our side and he did it he came

125

00:03:58,149 --> 00:03:56,959

through we got it done

126

00:04:00,470 --> 00:03:58,159

that's one of the feelings we have in

127

00:04:01,750 --> 00:04:00,480

the stock where no matter how bad it is

128

00:04:03,110 --> 00:04:01,760

we always believe that these guys are

129

00:04:05,110 --> 00:04:03,120

going to get it done and they do they've

130

00:04:07,190 --> 00:04:05,120

done it every single time and then when

131

00:04:08,869 --> 00:04:07,200

we had that aliveness test it was just

132

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

that euphoric feeling again just like we

133

00:04:12,789 --> 00:04:11,200

had last night with acs an instrument

134

00:04:14,550 --> 00:04:12,799

that's been dead for a while it's

135

00:04:17,590 --> 00:04:14,560

working again and it's going to do super

136

00:04:17,590 --> 00:04:17,600

science again the future

137

00:04:23,270 --> 00:04:20,550

the fifth and final spacewalk of sts-125

138

00:04:24,870 --> 00:04:23,280

will focus on a trio of activities

139

00:04:26,310 --> 00:04:24,880

associated with extending hubble's

140

00:04:28,070 --> 00:04:26,320

operating life

141

00:04:29,830 --> 00:04:28,080

as keith mentioned first up for

142

00:04:31,909 --> 00:04:29,840

astronauts john grunsfeld and drew

143

00:04:34,390 --> 00:04:31,919

feustel we'll be installing the second

144

00:04:36,870 --> 00:04:34,400

battery module unit or bmu

145

00:04:37,909 --> 00:04:36,880

each battery module unit contains three

146

00:04:39,990 --> 00:04:37,919

batteries

147

00:04:41,749 --> 00:04:40,000

the first bmu was installed during the

148

00:04:43,430 --> 00:04:41,759

second spacewalk

149

00:04:44,950 --> 00:04:43,440

hubble has operated on its original

150

00:04:47,510 --> 00:04:44,960

batteries since deployment from the

151  
00:04:49,749 --> 00:04:47,520  
space shuttle in 1990.

152  
00:04:50,950 --> 00:04:49,759  
the next task for the astronauts will be

153  
00:04:54,310 --> 00:04:50,960  
installing

154  
00:04:56,629 --> 00:04:54,320  
the large fine guidance sensor or fgs

155  
00:04:58,950 --> 00:04:56,639  
the fgs is an optical sensor that will

156  
00:05:06,070 --> 00:04:58,960  
be used on the hubble to provide

157  
00:05:09,189 --> 00:05:07,590  
we're going to put in a new fine

158  
00:05:11,909 --> 00:05:09,199  
guidance sensor

159  
00:05:13,110 --> 00:05:11,919  
to take the place of one that has shown

160  
00:05:15,430 --> 00:05:13,120  
evidence of

161  
00:05:17,110 --> 00:05:15,440  
of failing and not not being long for

162  
00:05:19,430 --> 00:05:17,120  
this world

163  
00:05:22,150 --> 00:05:19,440

well defined guidance sensors actually

164

00:05:24,870 --> 00:05:22,160

are the components that find

165

00:05:27,909 --> 00:05:24,880

the particular observation and they pick

166

00:05:30,230 --> 00:05:27,919

two guide stars very close to what is

167

00:05:32,870 --> 00:05:30,240

being observed and the fine guidance

168

00:05:35,430 --> 00:05:32,880

sensors then zero in on those guide

169

00:05:37,029 --> 00:05:35,440

stars they lock in on them and now you

170

00:05:40,150 --> 00:05:37,039

know you're pointing in the right place

171

00:05:42,950 --> 00:05:40,160

in the sky and then it transfers over to

172

00:05:47,749 --> 00:05:42,960

the rate sensor units the gyroscopes to

173

00:05:52,550 --> 00:05:49,990

the final task for grunsfeld and foystol

174

00:05:55,029 --> 00:05:52,560

will be to install new thermal material

175

00:05:58,950 --> 00:05:55,039

known as new outer blanket layers or

176  
00:06:04,710 --> 00:06:01,990  
we're going to install a new outer

177  
00:06:07,430 --> 00:06:04,720  
blanket layer called a noble which is a

178  
00:06:09,110 --> 00:06:07,440  
solid it's not a blanket anymore it's a

179  
00:06:11,909 --> 00:06:09,120  
solid sheet

180  
00:06:14,790 --> 00:06:11,919  
we designed a new outer blanket layer

181  
00:06:16,309 --> 00:06:14,800  
that can either lay on top of the

182  
00:06:18,550 --> 00:06:16,319  
degraded blankets

183  
00:06:20,390 --> 00:06:18,560  
just cover them up or we will take off

184  
00:06:22,710 --> 00:06:20,400  
the blanket in order to install a new

185  
00:06:25,350 --> 00:06:22,720  
radiator against the bay door and this

186  
00:06:27,189 --> 00:06:25,360  
is a very

187  
00:06:28,790 --> 00:06:27,199  
weather resistant new outer blanket

188  
00:06:30,309 --> 00:06:28,800

layer that we have designed so it should

189

00:06:33,270 --> 00:06:30,319

not degrade

190

00:06:35,749 --> 00:06:33,280

appreciably for the next

191

00:06:37,670 --> 00:06:35,759

20 years

192

00:06:39,510 --> 00:06:37,680

so at the end of this servicing mission

193

00:06:41,990 --> 00:06:39,520

where we've installed new cameras and

194

00:06:43,510 --> 00:06:42,000

upgraded all of this infrastructure

195

00:06:45,430 --> 00:06:43,520

the whole point of this is that the

196

00:06:47,350 --> 00:06:45,440

hubble space telescope will be better

197

00:06:49,350 --> 00:06:47,360

than it's ever been in its history and

198

00:06:51,909 --> 00:06:49,360

will continue to produce this this

199

00:06:55,830 --> 00:06:51,919

brehtaking and amazing science well

200

00:07:00,790 --> 00:06:58,230

with over 30 hours of spacewalking time

201  
00:07:02,950 --> 00:07:00,800  
now in the record books atlantis crew is

202  
00:07:05,189 --> 00:07:02,960  
in the home stretch with one more eva

203  
00:07:06,550 --> 00:07:05,199  
tomorrow and then deployment of hubble

204  
00:07:08,469 --> 00:07:06,560  
on tuesday

205  
00:07:10,870 --> 00:07:08,479  
we will now return to mission control in

206  
00:07:12,550 --> 00:07:10,880  
houston for continuing nasa television

207  
00:07:14,390 --> 00:07:12,560  
coverage of the flight of atlantis on

208  
00:07:16,950 --> 00:07:14,400  
sts-125

209  
00:07:18,950 --> 00:07:16,960  
up next on nasa tv will be the first