1
00:00:07,430 --> 00:00:05,510
well good day and welcome back to the

2
00:00:09,270 --> 00:00:07,440
johnson space center for today's mission

3
00:00:11,270 --> 00:00:09,280
status briefing on atlantis flight to

4
00:00:13,190 --> 00:00:11,280
the international space station

5
00:00:15,030 --> 00:00:13,200
two spacecraft joined as one in orbit

6
00:00:18,230 --> 00:00:15,040
today and with us to discuss all of the

7
00:00:19,750 --> 00:00:18,240
day's activities is the sts-132 lead

8
00:00:21,510 --> 00:00:19,760
space shuttle flight director mike

9
00:00:23,269 --> 00:00:21,520
serafin mike

10
00:00:26,310 --> 00:00:23,279
well good afternoon and uh thank you for

11
00:00:28,310 --> 00:00:26,320
tuning in to flight day three of the of

12
00:00:30,070 --> 00:00:28,320
the flight of the space shuttle atlantis

13
00:00:32,549 --> 00:00:30,080

to the international space station

14
00:00:35,270 --> 00:00:32,559
during the sts-132 mission

15
00:00:37,270 --> 00:00:35,280
today has been a highly successful day

16
00:00:39,590 --> 00:00:37,280
the crew of atlantis is now at the

17
00:00:41,910 --> 00:00:39,600
international space station we have a

18
00:00:44,790 --> 00:00:41,920
total of 12 crew members working

19
00:00:47,110 --> 00:00:44,800
together in an international effort to

20
00:00:48,950 --> 00:00:47,120
install the rossvet module

21
00:00:52,069 --> 00:00:48,960
two days from now on flight day five as

22
00:00:53,750 --> 00:00:52,079
well as to perform three spacewalks

23
00:00:57,189 --> 00:00:53,760
earlier today

24
00:00:59,110 --> 00:00:57,199
commander ken ham and his crew of six

25
00:01:00,790 --> 00:00:59,120
veteran astronauts

26
00:01:02,630 --> 00:01:00,800
started their day uh

27
00:01:03,990 --> 00:01:02,640
roughly 40 nautical miles from the

28
00:01:06,469 --> 00:01:04,000
international space station and

29
00:01:07,990 --> 00:01:06,479
performed a series of rendezvous burns

30
00:01:10,149 --> 00:01:08,000
to approach the international space

31
00:01:11,109 --> 00:01:10,159
station we've got some video footage of

32
00:01:13,270 --> 00:01:11,119
that

33
00:01:14,870 --> 00:01:13,280
including the docking and hatch opening

34
00:01:17,350 --> 00:01:14,880
that i'd like to show you

35
00:01:19,350 --> 00:01:17,360
the first piece of that footage

36
00:01:21,429 --> 00:01:19,360
is a bright star on the horizon that is

37
00:01:23,190 --> 00:01:21,439
atlantis viewed from the international

38
00:01:23,990 --> 00:01:23,200

space station and the plume that you can

39
00:01:29,429 --> 00:01:24,000
see

40
00:01:31,590 --> 00:01:29,439
40 miles away during a two-engine burn

41
00:01:33,429 --> 00:01:31,600
to raise the altitude

42
00:01:34,950 --> 00:01:33,439
here you can see atlantis approaching

43
00:01:37,190 --> 00:01:34,960
the international space station as it

44
00:01:39,109 --> 00:01:37,200
flies over the andes mountains

45
00:01:41,510 --> 00:01:39,119
during the approach we performed the

46
00:01:43,990 --> 00:01:41,520
backflip maneuver where we took roughly

47
00:01:46,389 --> 00:01:44,000
400 digital stills

48
00:01:48,550 --> 00:01:46,399
from the international space station of

49
00:01:49,910 --> 00:01:48,560
atlantis and its heat shield

50
00:01:51,510 --> 00:01:49,920
here you can see a view of the

51
00:01:55,270 --> 00:01:51,520
international space station in its

52
00:01:57,429 --> 00:01:55,280
docking configuration and then the final

53
00:02:00,789 --> 00:01:57,439
approach of atlantis

54
00:02:03,109 --> 00:02:00,799
the docking occurred at 928 central over

55
00:02:05,830 --> 00:02:03,119
the south pacific

56
00:02:08,869 --> 00:02:05,840
shortly after the docking the crew

57
00:02:10,630 --> 00:02:08,879
jumped into a series of procedures to

58
00:02:13,030 --> 00:02:10,640
structurally mate the two vehicles they

59
00:02:15,110 --> 00:02:13,040
closed the hooks and then performed a

60
00:02:16,790 --> 00:02:15,120
series of leak checks to ensure that

61
00:02:17,910 --> 00:02:16,800
there were no leaks into the vacuum of

62
00:02:19,670 --> 00:02:17,920
space

63
00:02:21,830 --> 00:02:19,680

shortly after those procedures were

64
00:02:25,190 --> 00:02:21,840
performed they opened the hatches at

65
00:02:27,990 --> 00:02:25,200
around 11 18 central today the two crews

66
00:02:30,150 --> 00:02:28,000
joined as one and were happy and greeted

67
00:02:32,470 --> 00:02:30,160
each other all the crew members on board

68
00:02:33,990 --> 00:02:32,480
the on both atlantis as well as the

69
00:02:34,790 --> 00:02:34,000
international space station are doing

70
00:02:37,270 --> 00:02:34,800
well

71
00:02:39,190 --> 00:02:37,280
and are busily getting into their

72
00:02:41,990 --> 00:02:39,200
activities today

73
00:02:43,589 --> 00:02:42,000
later today shortly after this press

74
00:02:45,830 --> 00:02:43,599
conference the

75
00:02:47,589 --> 00:02:45,840
crew of atlantis and the international

76
00:02:50,309 --> 00:02:47,599
space station specifically pierce

77
00:02:52,869 --> 00:02:50,319
sellers and tracy caldwell dyson will

78
00:02:54,470 --> 00:02:52,879
use the space station's robotic arm to

79
00:02:56,710 --> 00:02:54,480
pull the cargo carrier out of the

80
00:02:57,990 --> 00:02:56,720
shuttle's payload bay and install that

81
00:03:01,509 --> 00:02:58,000
on the

82
00:03:02,710 --> 00:03:01,519
space station that will set us up for

83
00:03:04,229 --> 00:03:02,720
the first of our three planned

84
00:03:06,149 --> 00:03:04,239
spacewalks

85
00:03:08,790 --> 00:03:06,159
during that spacewalk they'll take the

86
00:03:10,149 --> 00:03:08,800
spare communications antenna tomorrow

87
00:03:14,070 --> 00:03:10,159
off of the

88
00:03:16,949 --> 00:03:14,080

that to its permanent and final location

89
00:03:18,630 --> 00:03:16,959
on board the international space station

90
00:03:21,589 --> 00:03:18,640
they'll also take the

91
00:03:24,869 --> 00:03:21,599
enhanced oru temporary platform which is

92
00:03:25,990 --> 00:03:24,879
a a platform that keeps spare

93
00:03:27,110 --> 00:03:26,000
hardware

94
00:03:29,430 --> 00:03:27,120
warm

95
00:03:31,670 --> 00:03:29,440
during robotic activities to remove and

96
00:03:33,509 --> 00:03:31,680
replace them they'll install that on the

97
00:03:35,589 --> 00:03:33,519
space station as well

98
00:03:37,750 --> 00:03:35,599
later this evening they'll transfer

99
00:03:39,190 --> 00:03:37,760
their suits over to the international

100
00:03:41,110 --> 00:03:39,200
space station

101
00:03:44,070 --> 00:03:41,120
steve bowen and garrett riesman will set

102
00:03:46,229 --> 00:03:44,080
up in a camp out to purge nitrogen out

103
00:03:47,270 --> 00:03:46,239
of their bloodstream in a reduced

104
00:03:49,509 --> 00:03:47,280
pressure environment in the

105
00:03:51,509 --> 00:03:49,519
international space station airlock

106
00:03:53,589 --> 00:03:51,519
they'll stay there overnight and then in

107
00:03:55,750 --> 00:03:53,599
the morning they'll wake up and perform

108
00:03:57,670 --> 00:03:55,760
their first spacewalk they'll also be a

109
00:04:00,070 --> 00:03:57,680
lot of robotic activity to support that

110
00:04:02,149 --> 00:04:00,080
spacewalk by transferring parts to and

111
00:04:04,070 --> 00:04:02,159
from the international space station we

112
00:04:06,149 --> 00:04:04,080
expect some spectacular footage as

113
00:04:07,750 --> 00:04:06,159

garrett rides the international space

114
00:04:09,429 --> 00:04:07,760
station's arm

115
00:04:12,309 --> 00:04:09,439
above the international space station

116
00:04:15,030 --> 00:04:12,319
and looks down on atlantis

117
00:04:16,550 --> 00:04:15,040
we had a number of events that uh have

118
00:04:18,710 --> 00:04:16,560
occurred over the last day that i'd like

119
00:04:20,550 --> 00:04:18,720
to talk about and update you on uh there

120
00:04:22,310 --> 00:04:20,560
was a debris avoidance maneuver that the

121
00:04:24,310 --> 00:04:22,320
international space station was

122
00:04:27,270 --> 00:04:24,320
potentially going to perform

123
00:04:29,110 --> 00:04:27,280
late last evening the space station team

124
00:04:30,230 --> 00:04:29,120
along with our counterparts in us

125
00:04:31,749 --> 00:04:30,240
stratcom

126
00:04:33,030 --> 00:04:31,759
determined that the debris avoidance

127
00:04:35,430 --> 00:04:33,040
maneuver was not

128
00:04:37,350 --> 00:04:35,440
necessary and we did not have to lower

129
00:04:38,870 --> 00:04:37,360
the altitude of the international space

130
00:04:41,189 --> 00:04:38,880
station and as a result during the

131
00:04:43,990 --> 00:04:41,199
docking in the approach today we did not

132
00:04:45,189 --> 00:04:44,000
have to modify the planned trajectory of

133
00:04:49,590 --> 00:04:45,199
atlantis

134
00:04:51,590 --> 00:04:49,600
outstanding job flying to the

135
00:04:52,469 --> 00:04:51,600
international space station

136
00:04:53,590 --> 00:04:52,479
the

137
00:04:56,150 --> 00:04:53,600
debris

138
00:04:58,390 --> 00:04:56,160

passed uneventfully by the international

139
00:05:00,390 --> 00:04:58,400
space space station and the shuttle

140
00:05:02,790 --> 00:05:00,400
atlantis about an hour after docking

141
00:05:05,350 --> 00:05:02,800
today at a range of roughly 16

142
00:05:06,070 --> 00:05:05,360
kilometers

143
00:05:07,909 --> 00:05:06,080
we

144
00:05:10,469 --> 00:05:07,919
also continued to work through a number

145
00:05:12,550 --> 00:05:10,479
of uh

146
00:05:14,550 --> 00:05:12,560
methods to gather the

147
00:05:15,909 --> 00:05:14,560
heat shield information and imagery that

148
00:05:18,790 --> 00:05:15,919
we did not

149
00:05:20,790 --> 00:05:18,800
fully capture during yesterday's

150
00:05:21,590 --> 00:05:20,800
planned inspection of atlantis heat

151
00:05:23,830 --> 00:05:21,600
shield

152
00:05:25,990 --> 00:05:23,840
as you recall we had a problem with the

153
00:05:28,150 --> 00:05:26,000
boom and the ability to gimble the

154
00:05:29,189 --> 00:05:28,160
sensors on the end of the boom

155
00:05:30,950 --> 00:05:29,199
we

156
00:05:33,510 --> 00:05:30,960
performed a uh

157
00:05:35,909 --> 00:05:33,520
a backup method of of inspection and we

158
00:05:37,749 --> 00:05:35,919
did not gather all the planned

159
00:05:40,070 --> 00:05:37,759
imagery during that inspection

160
00:05:42,150 --> 00:05:40,080
specifically the areas along the the

161
00:05:44,230 --> 00:05:42,160
side of the nose called the chime where

162
00:05:47,110 --> 00:05:44,240
the the wing merges out of the nose of

163
00:05:49,670 --> 00:05:47,120

atlantis and then on the top side of the

164
00:05:51,110 --> 00:05:49,680
reinforced carbon carbon on

165
00:05:53,029 --> 00:05:51,120
the port wing

166
00:05:55,350 --> 00:05:53,039
we're looking at options to go off and

167
00:05:56,950 --> 00:05:55,360
gather that imagery during the

168
00:05:59,749 --> 00:05:56,960
the pitch maneuver earlier today we

169
00:06:01,830 --> 00:05:59,759
augmented the two planned crew members

170
00:06:04,309 --> 00:06:01,840
with a third crew member tracy caldwell

171
00:06:06,629 --> 00:06:04,319
dyson and she did an outstanding job of

172
00:06:08,629 --> 00:06:06,639
gathering uh images of the top side of

173
00:06:10,390 --> 00:06:08,639
the reinforced carbon carbon using a

174
00:06:13,189 --> 00:06:10,400
digital still camera with an 800

175
00:06:15,670 --> 00:06:13,199
millimeter lens all of the images again

176
00:06:18,629 --> 00:06:15,680
roughly 400 digital still images are on

177
00:06:22,150 --> 00:06:18,639
the ground and currently being assessed

178
00:06:24,710 --> 00:06:22,160
and analyzed by our team of analysts and

179
00:06:26,390 --> 00:06:24,720
we expect those folks to meet later this

180
00:06:28,309 --> 00:06:26,400
evening to decide whether we need to go

181
00:06:30,150 --> 00:06:28,319
off and gather additional imagery to

182
00:06:32,469 --> 00:06:30,160
clear atlantis heat shield or if we have

183
00:06:34,550 --> 00:06:32,479
everything that we need

184
00:06:36,550 --> 00:06:34,560
we're looking at uh backup methods to

185
00:06:38,950 --> 00:06:36,560
use the shuttle's robotic arm in the

186
00:06:41,749 --> 00:06:38,960
event that some of those activities do

187
00:06:44,309 --> 00:06:41,759
require uh arm support from the uh

188
00:06:46,629 --> 00:06:44,319

from the shuttle and the team is off

189
00:06:48,309 --> 00:06:46,639
building the the procedures and if

190
00:06:50,070 --> 00:06:48,319
necessary we can send those to the crew

191
00:06:52,790 --> 00:06:50,080
of atlantis and have those

192
00:06:55,350 --> 00:06:52,800
executed no earlier than flight day five

193
00:06:57,830 --> 00:06:55,360
the activities that we have ahead of us

194
00:06:59,909 --> 00:06:57,840
tomorrow with our first spacewalk as

195
00:07:01,749 --> 00:06:59,919
well as the installation of the rossvat

196
00:07:03,990 --> 00:07:01,759
module are going to be performed as

197
00:07:05,749 --> 00:07:04,000
planned so any changes to the

198
00:07:07,270 --> 00:07:05,759
mission timeline or the mission plan

199
00:07:08,150 --> 00:07:07,280
will occur after

200
00:07:10,150 --> 00:07:08,160
the

201
00:07:12,790 --> 00:07:10,160
miniature research module is installed

202
00:07:15,589 --> 00:07:12,800
on flight day five

203
00:07:17,510 --> 00:07:15,599
we also had a number of smaller uh

204
00:07:20,150 --> 00:07:17,520
systems anomalies with atlantis today

205
00:07:21,270 --> 00:07:20,160
there was a a pressure regulator on the

206
00:07:23,510 --> 00:07:21,280
left

207
00:07:24,550 --> 00:07:23,520
maneuvering engine that is used to raise

208
00:07:31,029 --> 00:07:24,560
the

209
00:07:33,749 --> 00:07:31,039
regulator than we normally see so we

210
00:07:35,430 --> 00:07:33,759
swapped to a backup regulator and the

211
00:07:36,629 --> 00:07:35,440
engine worked just fine for the rest of

212
00:07:39,430 --> 00:07:36,639
the rendezvous

213
00:07:41,189 --> 00:07:39,440

we also have a a thruster

214
00:07:43,589 --> 00:07:41,199
one one on the

215
00:07:44,390 --> 00:07:43,599
left side in the down firing direction

216
00:07:47,909 --> 00:07:44,400
that

217
00:07:49,189 --> 00:07:47,919
off the jet's getting a little cooler

218
00:07:50,710 --> 00:07:49,199
than it normally would if the heater

219
00:07:52,309 --> 00:07:50,720
were acting normally

220
00:07:54,469 --> 00:07:52,319
so we're not quite sure if the heater is

221
00:07:57,350 --> 00:07:54,479
controlling to a slightly lower set

222
00:07:59,189 --> 00:07:57,360
point or if it's completely failed off

223
00:08:00,869 --> 00:07:59,199
uh the folks are off looking at it we

224
00:08:02,469 --> 00:08:00,879
don't expect either the

225
00:08:03,990 --> 00:08:02,479
the regulator problem that i mentioned

226
00:08:05,749 --> 00:08:04,000
or the heater problem on the thruster to

227
00:08:08,469 --> 00:08:05,759
be of any consequence uh with the

228
00:08:10,230 --> 00:08:08,479
mission and uh we're uh we're proceeding

229
00:08:12,390 --> 00:08:10,240
again as planned over the next couple of

230
00:08:14,070 --> 00:08:12,400
days so with that i'd be happy to answer

231
00:08:15,749 --> 00:08:14,080
any questions

232
00:08:17,430 --> 00:08:15,759
okay we have reporters here in houston

233
00:08:19,749 --> 00:08:17,440
also reporters on our phone bridge and

234
00:08:22,230 --> 00:08:19,759
we'll start here in the front with bill

235
00:08:26,070 --> 00:08:22,240
bill harwood cbs i'm mike unclear about

236
00:08:27,909 --> 00:08:26,080
what didn't get done on the port wing um

237
00:08:29,670 --> 00:08:27,919
because you i know tracy took i think

238
00:08:31,189 --> 00:08:29,680

they said 149 pictures today with the

239
00:08:33,350 --> 00:08:31,199
big lens but

240
00:08:34,790 --> 00:08:33,360
what else do they need to do and and why

241
00:08:36,149 --> 00:08:34,800
wouldn't you just do it on flight day

242
00:08:37,829 --> 00:08:36,159
five if you don't have a focused

243
00:08:39,589 --> 00:08:37,839
inspection

244
00:08:41,990 --> 00:08:39,599
yeah the

245
00:08:44,149 --> 00:08:42,000
method the backup method that we used to

246
00:08:45,590 --> 00:08:44,159
inspect the heat shield

247
00:08:49,509 --> 00:08:45,600
yesterday

248
00:08:51,430 --> 00:08:49,519
was a fixed sensor on the boom so the

249
00:08:55,030 --> 00:08:51,440
boom is

250
00:08:56,790 --> 00:08:55,040
only has a view of the wing surface

251
00:08:58,710 --> 00:08:56,800
when you're able to position the arm in

252
00:09:00,870 --> 00:08:58,720
that direction and

253
00:09:02,150 --> 00:09:00,880
we just simply could not position the

254
00:09:04,389 --> 00:09:02,160
arm in the right

255
00:09:06,949 --> 00:09:04,399
orientation with the boom because of the

256
00:09:10,150 --> 00:09:06,959
fixed sensor to gather all the port wing

257
00:09:12,630 --> 00:09:10,160
imagery it's it's just a limitation of

258
00:09:14,550 --> 00:09:12,640
the robotic arm and the way that all the

259
00:09:16,470 --> 00:09:14,560
joints move together

260
00:09:19,590 --> 00:09:16,480
so today we

261
00:09:21,590 --> 00:09:19,600
again took some imagery of the top side

262
00:09:23,750 --> 00:09:21,600
of the reinforced carbon carbon on the

263
00:09:25,910 --> 00:09:23,760

port wing tracy did a great job of

264
00:09:27,910 --> 00:09:25,920
gathering that imagery and right now we

265
00:09:30,230 --> 00:09:27,920
may have everything that we need the

266
00:09:31,829 --> 00:09:30,240
imagery team is off looking at that and

267
00:09:33,990 --> 00:09:31,839
we'll let them decide whether we need to

268
00:09:36,310 --> 00:09:34,000
gather any additional

269
00:09:38,790 --> 00:09:36,320
imagery to clear the heat shield over

270
00:09:40,630 --> 00:09:38,800
the next day or so and if so we'll go

271
00:09:43,430 --> 00:09:40,640
off and get that

272
00:09:45,990 --> 00:09:43,440
and on docking and and the torva and

273
00:09:47,269 --> 00:09:46,000
final approach how did ham do on

274
00:09:49,750 --> 00:09:47,279
prop management and all that sort of

275
00:09:53,030 --> 00:09:49,760
thing looked pretty clean yeah

276
00:09:55,190 --> 00:09:53,040
we knew that we had an an excess of uh

277
00:09:57,269 --> 00:09:55,200
propellant on this mission uh just due

278
00:09:59,509 --> 00:09:57,279
to the time of year that we're launching

279
00:10:01,350 --> 00:09:59,519
and the weight of all of the the

280
00:10:03,030 --> 00:10:01,360
payloads that we were flying up

281
00:10:04,870 --> 00:10:03,040
so we knew that we had a little more

282
00:10:07,750 --> 00:10:04,880
propellant available for the rendezvous

283
00:10:10,310 --> 00:10:07,760
in the in the entire mission uh but uh

284
00:10:12,389 --> 00:10:10,320
ken ham did a did an outstanding job uh

285
00:10:15,350 --> 00:10:12,399
it was a veteran performance uh by a

286
00:10:18,150 --> 00:10:15,360
veteran crew today and uh we saw

287
00:10:21,750 --> 00:10:18,160
absolutely no uh no issues with the with

288
00:10:24,949 --> 00:10:23,590

okay no other questions here in houston

289
00:10:29,910 --> 00:10:24,959
for the moment let's go to the phone

290
00:10:34,389 --> 00:10:31,670
thank you very much uh tarek mark with

291
00:10:36,470 --> 00:10:34,399
uh space.com and mike you know i just

292
00:10:38,389 --> 00:10:36,480
had a uh i guess a follow-up question to

293
00:10:40,790 --> 00:10:38,399
bill's there just about the um

294
00:10:43,110 --> 00:10:40,800
uh the fly out there just how um how

295
00:10:46,230 --> 00:10:43,120
tricky that was for ken and then i just

296
00:10:48,069 --> 00:10:46,240
had a follow-up question

297
00:10:49,990 --> 00:10:48,079
during the uh flyout and the final

298
00:10:52,710 --> 00:10:50,000
approach today uh

299
00:10:54,550 --> 00:10:52,720
we fly down a very narrow corridor and

300
00:10:56,069 --> 00:10:54,560
it keeps getting narrower and narrower

301
00:10:57,750 --> 00:10:56,079
the closer you get to the international

302
00:11:00,870 --> 00:10:57,760
space station it's roughly a degree and

303
00:11:02,389 --> 00:11:00,880
a half uh ham and his crew flew right

304
00:11:03,910 --> 00:11:02,399
down the center of the corridor it was a

305
00:11:06,230 --> 00:11:03,920
great approach

306
00:11:07,910 --> 00:11:06,240
they did have to stop it roughly 30 feet

307
00:11:10,069 --> 00:11:07,920
from the international space station to

308
00:11:11,670 --> 00:11:10,079
verify that the shuttle's docking system

309
00:11:14,230 --> 00:11:11,680
was aligned with the international space

310
00:11:15,829 --> 00:11:14,240
station's docking system and they did

311
00:11:16,630 --> 00:11:15,839
see a little bit of misalignment there's

312
00:12:05,509 --> 00:11:16,640
a

313
00:12:07,590 --> 00:12:05,519

mention the

314
00:12:09,750 --> 00:12:07,600
images that tracy uh snapped from the

315
00:12:11,590 --> 00:12:09,760
space station during the the fifteenth

316
00:12:13,350 --> 00:12:11,600
i'm just kind of curious um if the hope

317
00:12:16,310 --> 00:12:13,360
is now that that will um

318
00:12:17,990 --> 00:12:16,320
uh maybe still allow uh a clearing of

319
00:12:19,990 --> 00:12:18,000
the the heat shield for launch debris

320
00:12:22,310 --> 00:12:20,000
why i guess the standard flight day six

321
00:12:25,670 --> 00:12:22,320
now or are you uh expecting maybe to get

322
00:12:29,670 --> 00:12:25,680
that uh that

323
00:12:31,590 --> 00:12:29,680
sign off on a day or two later thank you

324
00:12:33,509 --> 00:12:31,600
yeah it's a little bit too early to tell

325
00:12:35,910 --> 00:12:33,519
whether or not the images tracy took

326
00:12:37,829 --> 00:12:35,920
will be able to clear the reinforced

327
00:12:40,389 --> 00:12:37,839
carbon carbon

328
00:12:42,710 --> 00:12:40,399
for the areas that we missed yesterday

329
00:12:44,629 --> 00:12:42,720
the reason is is that the reinforced

330
00:12:46,310 --> 00:12:44,639
carbon is the hottest surface on the

331
00:12:48,870 --> 00:12:46,320
vehicle the nose and the wing leading

332
00:12:50,470 --> 00:12:48,880
edge or the hottest surface and the area

333
00:12:52,629 --> 00:12:50,480
that we're talking about is on the top

334
00:12:54,389 --> 00:12:52,639
side of the wing that doesn't see as

335
00:12:56,710 --> 00:12:54,399
much heat as the lower surface or what

336
00:12:59,350 --> 00:12:56,720
we call the apex the the real

337
00:13:01,350 --> 00:12:59,360
curved front edge of the wing

338
00:13:03,750 --> 00:13:01,360

but there's a real tight tolerance on

339
00:13:06,150 --> 00:13:03,760
any damage that we can allow on the

340
00:13:07,750 --> 00:13:06,160
reinforced carbon there and the team

341
00:13:09,509 --> 00:13:07,760
will just need to look at the quality of

342
00:13:10,389 --> 00:13:09,519
the images from the distance that we

343
00:13:14,069 --> 00:13:10,399
took

344
00:13:16,629 --> 00:13:14,079
the images from and see if they can meet

345
00:13:19,190 --> 00:13:16,639
the resolution requirement the hope was

346
00:13:21,110 --> 00:13:19,200
that they could meet the requirement and

347
00:13:23,829 --> 00:13:21,120
we went ahead and had a crew member

348
00:13:27,030 --> 00:13:23,839
added with the highest powered camera

349
00:13:29,829 --> 00:13:27,040
that we had which is a a 400 millimeter

350
00:13:30,790 --> 00:13:29,839
lens with a doubler on it and

351
00:13:34,629 --> 00:13:30,800
that

352
00:13:36,310 --> 00:13:34,639
images

353
00:13:38,790 --> 00:13:36,320
i'm not an imagery analyst i couldn't

354
00:13:40,470 --> 00:13:38,800
tell you for sure if it would meet the

355
00:13:43,430 --> 00:13:40,480
resolution

356
00:13:44,710 --> 00:13:43,440
required to clear the vehicle but

357
00:13:48,310 --> 00:13:44,720
we'll just need to give those folks a

358
00:13:55,030 --> 00:13:52,710
okay next is marcia dunn marcia yes hi

359
00:13:57,189 --> 00:13:55,040
um mike i wanted to clarify a couple

360
00:14:00,069 --> 00:13:57,199
things you said um that was sort of in

361
00:14:01,990 --> 00:14:00,079
contrast to the real-time commentary um

362
00:14:04,550 --> 00:14:02,000
you mentioned a 16 kilometer missed

363
00:14:06,790 --> 00:14:04,560

distance for the debris um the

364
00:14:08,550 --> 00:14:06,800
commentator at the time said nine

365
00:14:10,870 --> 00:14:08,560
kilometers and i'm just flying to

366
00:14:13,030 --> 00:14:10,880
clarify because 16 kilometers comes out

367
00:14:14,470 --> 00:14:13,040
to about nine miles i

368
00:14:16,949 --> 00:14:14,480
and he also said that there were four

369
00:14:17,990 --> 00:14:16,959
space station astronauts taking zoom

370
00:14:20,550 --> 00:14:18,000
pictures

371
00:14:22,150 --> 00:14:20,560
um tj cramer i think was creamer was one

372
00:14:23,670 --> 00:14:22,160
of them too

373
00:14:26,069 --> 00:14:23,680
do you know was it just the three or

374
00:14:28,069 --> 00:14:26,079
were there four space station people

375
00:14:30,389 --> 00:14:28,079
taking pictures

376
00:14:33,829 --> 00:14:30,399
there were three crew members that took

377
00:14:35,910 --> 00:14:33,839
images one uh took images uh kind of

378
00:14:39,509 --> 00:14:35,920
some big picture images with a 400

379
00:14:41,829 --> 00:14:39,519
millimeter lens uh one took zoomed in

380
00:14:44,310 --> 00:14:41,839
images with an 800 millimeter lens and

381
00:14:47,189 --> 00:14:44,320
then another one took images of just the

382
00:14:49,110 --> 00:14:47,199
top side of the reinforced carbon

383
00:14:51,910 --> 00:14:49,120
we we know that for a fact

384
00:14:53,670 --> 00:14:51,920
there were three imagery cards that were

385
00:14:55,990 --> 00:14:53,680
inserted in the laptops and then we

386
00:14:57,750 --> 00:14:56,000
downlinked all those and

387
00:14:59,350 --> 00:14:57,760
again it was three crew members

388
00:15:01,030 --> 00:14:59,360

i can understand where there was some

389
00:15:02,949 --> 00:15:01,040
confusion on the missed distance

390
00:15:05,269 --> 00:15:02,959
associated with the the piece of space

391
00:15:07,990 --> 00:15:05,279
debris that we had

392
00:15:09,910 --> 00:15:08,000
when we were tracking this object over

393
00:15:12,230 --> 00:15:09,920
the last couple of days

394
00:15:14,150 --> 00:15:12,240
our criteria to take action to maneuver

395
00:15:16,230 --> 00:15:14,160
out of the way of this thing was 10

396
00:15:17,430 --> 00:15:16,240
kilometers that's that's our flight rule

397
00:15:19,590 --> 00:15:17,440
constraint if you think you're going to

398
00:15:21,670 --> 00:15:19,600
be within 10 kilometers of a piece of

399
00:15:23,829 --> 00:15:21,680
debris you will move out of the way of

400
00:15:27,910 --> 00:15:25,670
for quite a while this thing was right

401
00:15:29,590 --> 00:15:27,920
on the threshold it was 12 kilometers

402
00:15:30,389 --> 00:15:29,600
and was nine kilometers depending on

403
00:15:33,350 --> 00:15:30,399
which

404
00:15:35,350 --> 00:15:33,360
uh source was measuring it uh there's a

405
00:15:36,870 --> 00:15:35,360
little bit of air associated with that

406
00:15:39,189 --> 00:15:36,880
and it was kind of right on the

407
00:15:42,389 --> 00:15:39,199
threshold of of 10 kilometers the

408
00:15:45,829 --> 00:15:42,399
closest that we saw it was at 9.

409
00:15:47,990 --> 00:15:45,839
the closer we get in to the actual

410
00:15:49,829 --> 00:15:48,000
what we call time of closest approach

411
00:15:51,189 --> 00:15:49,839
the tca

412
00:15:54,470 --> 00:15:51,199
you get better

413
00:15:56,550 --> 00:15:54,480

data and the data that we got was

414
00:15:58,790 --> 00:15:56,560
showing that our missed distance was 16

415
00:16:00,150 --> 00:15:58,800
kilometers and that's why the debris

416
00:16:02,550 --> 00:16:00,160
avoidance maneuver was canceled

417
00:16:05,350 --> 00:16:02,560
yesterday and then we confirmed that

418
00:16:07,430 --> 00:16:05,360
later today when the the actual time of

419
00:16:09,670 --> 00:16:07,440
closest approach occurred about an hour

420
00:16:12,230 --> 00:16:09,680
after docking that it was indeed roughly

421
00:16:14,470 --> 00:16:12,240
16 kilometers away from atlanta sandy

422
00:16:15,990 --> 00:16:14,480
international space station

423
00:16:18,389 --> 00:16:16,000
thank you and do you have any more idea

424
00:16:20,949 --> 00:16:18,399
of what that piece was

425
00:16:23,350 --> 00:16:20,959
no it is still an unidentified object

426
00:16:25,430 --> 00:16:23,360
from an unknown source and

427
00:16:27,509 --> 00:16:25,440
at this point it's really irrelevant

428
00:16:30,310 --> 00:16:27,519
it's it's something that's uh

429
00:16:32,710 --> 00:16:30,320
part of a inconsequential history uh

430
00:16:34,310 --> 00:16:32,720
associated with this mission

431
00:16:37,110 --> 00:16:34,320
question for me

432
00:16:39,430 --> 00:16:37,120
when do you expect to decide whether

433
00:16:41,509 --> 00:16:39,440
the space walkers will tackle that snack

434
00:16:44,310 --> 00:16:41,519
cable

435
00:16:47,189 --> 00:16:44,320
and when do you think they'll do it and

436
00:16:50,710 --> 00:16:47,199
what will they need to do

437
00:16:52,870 --> 00:16:50,720
we've got a couple of our space walk

438
00:16:56,310 --> 00:16:52,880

specialists and engineers out at the

439
00:16:59,269 --> 00:16:56,320
kennedy space center as we as we speak

440
00:17:01,509 --> 00:16:59,279
assessing what options we have to go

441
00:17:03,189 --> 00:17:01,519
manipulate this cable on the pan tilt

442
00:17:04,789 --> 00:17:03,199
unit on the end of the

443
00:17:08,630 --> 00:17:04,799
shuttle's boom

444
00:17:10,549 --> 00:17:08,640
they're trying to match the the exact uh

445
00:17:12,230 --> 00:17:10,559
cable configuration that we have on

446
00:17:13,590 --> 00:17:12,240
orbit with some hardware that we have on

447
00:17:16,309 --> 00:17:13,600
the ground that's planned to fly on a

448
00:17:18,549 --> 00:17:16,319
future mission and then figure out what

449
00:17:20,710 --> 00:17:18,559
ways we can either just wire tie this

450
00:17:22,949 --> 00:17:20,720
saying or use some velcro to move the

451
00:17:25,750 --> 00:17:22,959
cable to a position that won't cause it

452
00:17:27,829 --> 00:17:25,760
to interfere interfere with full motion

453
00:17:29,510 --> 00:17:27,839
of the pan tilt unit

454
00:17:31,430 --> 00:17:29,520
we expect to make that decision over the

455
00:17:33,110 --> 00:17:31,440
next couple of days we're not going to

456
00:17:35,270 --> 00:17:33,120
modify anything associated with our

457
00:17:37,990 --> 00:17:35,280
first spacewalk tomorrow

458
00:17:39,750 --> 00:17:38,000
so the earliest that we would ask the

459
00:17:41,909 --> 00:17:39,760
the crew of atlantis to do anything

460
00:17:43,750 --> 00:17:41,919
different associated with this pan tilt

461
00:17:46,230 --> 00:17:43,760
unit would be our second spacewalk on

462
00:17:48,789 --> 00:17:46,240
flight day six

463
00:17:51,190 --> 00:17:48,799

we're still debating if this task gets

464
00:17:53,830 --> 00:17:51,200
added as to whether it would be

465
00:17:55,270 --> 00:17:53,840
eba2 on flight day six or eva three on

466
00:17:57,669 --> 00:17:55,280
flight day eight

467
00:18:00,070 --> 00:17:57,679
all of our spacewalks are full on this

468
00:18:02,630 --> 00:18:00,080
mission where we've got full content and

469
00:18:04,150 --> 00:18:02,640
until we either get ahead uh with the

470
00:18:06,470 --> 00:18:04,160
the mission content that we've got out

471
00:18:07,990 --> 00:18:06,480
there or we trade it off against other

472
00:18:09,350 --> 00:18:08,000
mission objectives

473
00:18:10,950 --> 00:18:09,360
we're just

474
00:18:12,950 --> 00:18:10,960
hard-pressed to find a home for this

475
00:18:14,630 --> 00:18:12,960
task if it is a priority and we know

476
00:18:16,950 --> 00:18:14,640
that there's damage on the heat shield

477
00:18:19,590 --> 00:18:16,960
of atlantis we will indeed go off and

478
00:18:21,110 --> 00:18:19,600
and get our best sensor and our best

479
00:18:23,270 --> 00:18:21,120
asset available

480
00:18:25,830 --> 00:18:23,280
the the uh the boom sensor and the pan

481
00:18:27,990 --> 00:18:25,840
tilt unit but right now we're still

482
00:18:30,870 --> 00:18:28,000
trying to determine what if any actions

483
00:18:33,830 --> 00:18:30,880
required to get our

484
00:18:35,909 --> 00:18:33,840
to get all the heat shield cleared

485
00:18:37,830 --> 00:18:35,919
and just to follow quickly and this

486
00:18:40,230 --> 00:18:37,840
would be my last question so for late

487
00:18:41,110 --> 00:18:40,240
inspection if you had to you could use

488
00:18:43,750 --> 00:18:41,120

the

489
00:18:45,750 --> 00:18:43,760
backup b method that you used yesterday

490
00:18:48,470 --> 00:18:45,760
would that suffice

491
00:18:50,789 --> 00:18:48,480
yes it would and again it doesn't cover

492
00:18:53,350 --> 00:18:50,799
all of the uh the heat shield it it

493
00:18:55,029 --> 00:18:53,360
covers the vast majority of the of the

494
00:18:57,590 --> 00:18:55,039
hottest parts the reinforced carbon that

495
00:18:59,990 --> 00:18:57,600
we inspect for what we call the late

496
00:19:01,110 --> 00:19:00,000
inspection which is to manage or

497
00:19:02,950 --> 00:19:01,120
mitigate

498
00:19:04,710 --> 00:19:02,960
orbital debris in the orbital debris

499
00:19:07,190 --> 00:19:04,720
environment the

500
00:19:09,750 --> 00:19:07,200
the digital camera that we used

501
00:19:12,549 --> 00:19:09,760
yesterday provides very high resolution

502
00:19:14,710 --> 00:19:12,559
imagery it's it the imagery resolution

503
00:19:16,870 --> 00:19:14,720
provided is greater than what we need to

504
00:19:19,909 --> 00:19:16,880
inspect for orbital debris

505
00:19:21,909 --> 00:19:19,919
it's just not as an efficient uh method

506
00:19:23,830 --> 00:19:21,919
of gathering that information to clear

507
00:19:26,630 --> 00:19:23,840
the heat shield because again you need

508
00:19:28,230 --> 00:19:26,640
to wait for lighting in in in this case

509
00:19:29,510 --> 00:19:28,240
it's just during sunlight because we

510
00:19:31,909 --> 00:19:29,520
don't have the

511
00:19:34,789 --> 00:19:31,919
laser dynamic ranging image or the ldri

512
00:19:36,950 --> 00:19:34,799
providing an illumination source that

513
00:19:38,789 --> 00:19:36,960

particular illumination source sits on

514
00:19:40,870 --> 00:19:38,799
the pan tilt unit and we weren't able to

515
00:19:43,430 --> 00:19:40,880
position it to provide lighting for the

516
00:19:45,909 --> 00:19:43,440
digital camera so it's just a less

517
00:19:46,710 --> 00:19:45,919
efficient way to gather the majority of

518
00:19:58,549 --> 00:19:46,720
the

519
00:20:01,350 --> 00:19:58,559
bridge

520
00:20:04,470 --> 00:20:01,360
uh thanks i have one question on the

521
00:20:06,310 --> 00:20:04,480
debris piece i just wonder if if you're

522
00:20:07,830 --> 00:20:06,320
done with that so to speak for the rest

523
00:20:09,990 --> 00:20:07,840
of the mission or do you have to

524
00:20:11,909 --> 00:20:10,000
continue to watch

525
00:20:14,870 --> 00:20:11,919
the object to see if it's going to come

526
00:20:16,789 --> 00:20:14,880
close to the station in the shuttle

527
00:20:19,190 --> 00:20:16,799
uh we went off and asked those questions

528
00:20:21,830 --> 00:20:19,200
a couple of days ago mark and

529
00:20:24,549 --> 00:20:21,840
right now the object uh doesn't plan to

530
00:20:26,149 --> 00:20:24,559
come near the uh shuttle atlantis or the

531
00:20:29,029 --> 00:20:26,159
station during the time frame that we're

532
00:20:31,270 --> 00:20:29,039
flying this mission uh the orbit is is

533
00:20:33,830 --> 00:20:31,280
highly elliptical and uh

534
00:20:36,149 --> 00:20:33,840
the uh just the two trajectories aren't

535
00:20:37,830 --> 00:20:36,159
going to cross each other for some time

536
00:20:40,230 --> 00:20:37,840
and we're no longer concerned with this

537
00:20:42,310 --> 00:20:40,240
particular object we have a constant

538
00:20:43,990 --> 00:20:42,320

screening process in place to monitor

539
00:20:46,470 --> 00:20:44,000
for uh space debris whether it's

540
00:20:48,549 --> 00:20:46,480
man-made or natural and we'll just

541
00:20:51,830 --> 00:20:48,559
continue to use that process the process

542
00:20:53,190 --> 00:20:51,840
works very well and if if that object or

543
00:20:54,950 --> 00:20:53,200
any other object were to come near

544
00:20:57,190 --> 00:20:54,960
either atlantis or station or both

545
00:20:58,950 --> 00:20:57,200
vehicles while they're docked uh we'll

546
00:21:01,430 --> 00:20:58,960
we'll use the process and and

547
00:21:06,149 --> 00:21:01,440
potentially maneuver the ships out of

548
00:21:06,159 --> 00:21:10,789
okay next up is todd halverson

549
00:21:13,990 --> 00:21:11,830
thanks

550
00:21:17,350 --> 00:21:14,000
todd iverson of

551
00:21:21,029 --> 00:21:17,360
today and um i was wondering about the

552
00:21:23,669 --> 00:21:21,039
helium uh regulator uh problem is that

553
00:21:27,029 --> 00:21:23,679
in any way uh

554
00:21:29,669 --> 00:21:27,039
similar uh to the helium

555
00:21:31,830 --> 00:21:29,679
pressurization problem that cropped up

556
00:21:33,990 --> 00:21:31,840
uh pre-launched during

557
00:21:37,270 --> 00:21:34,000
uh recent flow i think i think it even

558
00:21:43,990 --> 00:21:41,070
we did have uh helium reg problems on

559
00:21:45,909 --> 00:21:44,000
sts-131 leading up to it we had to do

560
00:21:47,830 --> 00:21:45,919
some additional work to provide the

561
00:21:50,230 --> 00:21:47,840
flight rationale

562
00:21:51,830 --> 00:21:50,240
that was on the the reaction control

563
00:21:53,110 --> 00:21:51,840

system uh

564
00:21:54,950 --> 00:21:53,120
thruster

565
00:21:56,870 --> 00:21:54,960
tanks this was on the orbital

566
00:21:58,470 --> 00:21:56,880
maneuvering system tanks the problem

567
00:22:00,870 --> 00:21:58,480
that we saw today

568
00:22:03,590 --> 00:22:00,880
they're unrelated what we believe we saw

569
00:22:05,430 --> 00:22:03,600
today was just the uh the tank pressure

570
00:22:07,669 --> 00:22:05,440
was a little bit lower than we normally

571
00:22:10,149 --> 00:22:07,679
see and when we open the isolation valve

572
00:22:12,149 --> 00:22:10,159
the the regulator just kind of

573
00:22:14,870 --> 00:22:12,159
let loose a little bit longer than we

574
00:22:16,950 --> 00:22:14,880
normally uh see it and caused a little

575
00:22:19,909 --> 00:22:16,960
bit higher pressure spike than

576
00:22:22,470 --> 00:22:19,919
than what we would normally expect from

577
00:22:24,549 --> 00:22:22,480
uh this particular regulator there's a

578
00:22:26,310 --> 00:22:24,559
primary and a secondary regulator they

579
00:22:28,710 --> 00:22:26,320
control the slightly different pressures

580
00:22:30,470 --> 00:22:28,720
and when the the primary regulator if

581
00:22:33,029 --> 00:22:30,480
it's working will control to a slightly

582
00:22:36,549 --> 00:22:33,039
lower pressure and what we saw was

583
00:22:39,350 --> 00:22:36,559
roughly 10 psi higher than what we would

584
00:22:41,830 --> 00:22:39,360
expect and it could have either been

585
00:22:43,909 --> 00:22:41,840
a reg that kind of just

586
00:22:46,230 --> 00:22:43,919
creep creeped on us a little bit or it

587
00:22:48,630 --> 00:22:46,240
could have been the secondary regular

588
00:22:51,270 --> 00:22:48,640

controlling only and and the primary

589
00:22:53,029 --> 00:22:51,280
regulator wasn't in the path in the path

590
00:22:55,430 --> 00:22:53,039
of controlling the pressure of this

591
00:22:57,590 --> 00:22:55,440
particular system

592
00:22:59,990 --> 00:22:57,600
we've got a little bit of data from

593
00:23:02,149 --> 00:23:00,000
previous flights in in previous missions

594
00:23:04,710 --> 00:23:02,159
where we've seen performance similar to

595
00:23:06,789 --> 00:23:04,720
this and folks are off comparing that

596
00:23:09,430 --> 00:23:06,799
again it's it's not of any consequence

597
00:23:12,870 --> 00:23:09,440
to this mission folks uh are comfortable

598
00:23:15,270 --> 00:23:12,880
using that system um which now we've got

599
00:23:17,669 --> 00:23:15,280
is is the backup system or the system

600
00:23:21,029 --> 00:23:17,679
that we've got for any future uses of

601
00:23:22,870 --> 00:23:21,039
this engine to raise or lower atlantis

602
00:23:26,070 --> 00:23:22,880
orbit

603
00:23:27,750 --> 00:23:26,080
thanks very much and in regards to uh

604
00:23:30,390 --> 00:23:27,760
dva number one

605
00:23:31,510 --> 00:23:30,400
i'm wondering if you could uh give us an

606
00:23:33,830 --> 00:23:31,520
idea of

607
00:23:35,190 --> 00:23:33,840
relative degree of difficulty of this

608
00:23:37,510 --> 00:23:35,200
particular

609
00:23:40,310 --> 00:23:37,520
walk-in and what you believe the biggest

610
00:23:42,230 --> 00:23:40,320
challenges uh might be

611
00:23:44,549 --> 00:23:42,240
uh the biggest challenge is simply just

612
00:23:46,870 --> 00:23:44,559
going to be time uh if we can get all

613
00:23:49,510 --> 00:23:46,880

the planned tasks done within the time

614
00:23:52,630 --> 00:23:49,520
allotted uh you know we've got six and a

615
00:23:54,470 --> 00:23:52,640
half hours of uh time set aside for for

616
00:23:56,870 --> 00:23:54,480
both of our spacewalkers steve bone and

617
00:23:59,269 --> 00:23:56,880
garrett riesman uh while they're outside

618
00:24:01,110 --> 00:23:59,279
performing our first spacewalk the tasks

619
00:24:02,470 --> 00:24:01,120
that we're performing on this mission uh

620
00:24:03,990 --> 00:24:02,480
this will be the first time that we've

621
00:24:05,909 --> 00:24:04,000
done those types of tasks so there's a

622
00:24:07,590 --> 00:24:05,919
little bit greater uncertainty as to how

623
00:24:09,909 --> 00:24:07,600
long they're actually going to take

624
00:24:12,070 --> 00:24:09,919
we've trained these tasks a bunch of

625
00:24:15,029 --> 00:24:12,080
times in the neutral buoyancy lab here

626
00:24:17,830 --> 00:24:15,039
in houston and we have a lot of good

627
00:24:19,350 --> 00:24:17,840
information about choreography and the

628
00:24:20,549 --> 00:24:19,360
most efficient way to perform these

629
00:24:22,230 --> 00:24:20,559
tasks

630
00:24:24,070 --> 00:24:22,240
it's just a little bit uncertain as to

631
00:24:25,750 --> 00:24:24,080
once we finally get on orbit you're

632
00:24:27,909 --> 00:24:25,760
outside for the first spacewalk and

633
00:24:30,070 --> 00:24:27,919
you're dealing with the real hardware

634
00:24:31,269 --> 00:24:30,080
how long it's going to take up until

635
00:24:33,110 --> 00:24:31,279
this point

636
00:24:34,950 --> 00:24:33,120
we've just been using training models on

637
00:24:37,269 --> 00:24:34,960
the ground and actually seen the real

638
00:24:39,350 --> 00:24:37,279

hardware at the kennedy space center

639
00:24:40,710 --> 00:24:39,360
but when you finally put hands on the

640
00:24:42,310 --> 00:24:40,720
real hardware

641
00:24:45,430 --> 00:24:42,320
on the real day

642
00:24:46,630 --> 00:24:45,440
for a task that you've not performed

643
00:24:47,830 --> 00:24:46,640
there's just a little bit greater

644
00:24:50,390 --> 00:24:47,840
uncertainty

645
00:24:52,230 --> 00:24:50,400
so it's just again a matter of time the

646
00:24:54,630 --> 00:24:52,240
the batteries that we plan to remove and

647
00:24:57,190 --> 00:24:54,640
replace we've done that before

648
00:24:59,750 --> 00:24:57,200
specifically on the sts-127 mission we

649
00:25:01,190 --> 00:24:59,760
replaced the six batteries

650
00:25:02,950 --> 00:25:01,200
if you recall we had a little bit of

651
00:25:05,110 --> 00:25:02,960
difficulty uh getting the batteries

652
00:25:07,190 --> 00:25:05,120
removed and replaced and time was an

653
00:25:09,350 --> 00:25:07,200
element but we've learned from that and

654
00:25:10,789 --> 00:25:09,360
we can use that as leverage to make our

655
00:25:13,350 --> 00:25:10,799
second and third space walk a little

656
00:25:16,390 --> 00:25:13,360
more efficient this first one we're

657
00:25:17,990 --> 00:25:16,400
doing two uh first time tasks and

658
00:25:19,909 --> 00:25:18,000
there's just again a little bit more

659
00:25:22,549 --> 00:25:19,919
uncertainty

660
00:25:26,230 --> 00:25:22,559
um you mentioned earlier that uh you

661
00:25:30,070 --> 00:25:26,240
expected some spectacular views uh from

662
00:25:31,830 --> 00:25:30,080
garrett reisman's uh trip uh tomorrow on

663
00:25:34,390 --> 00:25:31,840

the robot arm i'm wondering if you can

664
00:25:36,870 --> 00:25:34,400
kind of paint a word picture for us and

665
00:25:39,990 --> 00:25:36,880
uh give me an idea of where he's gonna

666
00:25:43,669 --> 00:25:40,000
be and what he's gonna be seeing

667
00:25:47,909 --> 00:25:43,679
yeah uh garrett is basically gonna ride

668
00:25:50,470 --> 00:25:47,919
the shuttle's arm uh from the uh

669
00:25:53,110 --> 00:25:50,480
position of the cargo carrier and he's

670
00:25:55,029 --> 00:25:53,120
gonna pick up pieces of the antenna and

671
00:25:56,789 --> 00:25:55,039
then basically ride the arm across the

672
00:25:59,750 --> 00:25:56,799
top of station and the shuttle will be

673
00:26:01,190 --> 00:25:59,760
parked in front and he'll just get a

674
00:26:04,390 --> 00:26:01,200
god's eye view

675
00:26:05,590 --> 00:26:04,400
of the international space station and

676
00:26:08,390 --> 00:26:05,600
atlantis

677
00:26:10,710 --> 00:26:08,400
as he flies over with these pieces of

678
00:26:12,710 --> 00:26:10,720
the communications antenna and then when

679
00:26:14,710 --> 00:26:12,720
he comes back over he won't have

680
00:26:17,029 --> 00:26:14,720
anything in his hands and boy if i were

681
00:26:18,390 --> 00:26:17,039
him i'd i'd grab a few snapshots of that

682
00:26:19,750 --> 00:26:18,400
moment

683
00:26:21,990 --> 00:26:19,760
with any luck it'll be during the

684
00:26:23,830 --> 00:26:22,000
daytime we're not obviously planning the

685
00:26:25,190 --> 00:26:23,840
mission around whether or not it's day

686
00:26:26,630 --> 00:26:25,200
or night

687
00:26:28,950 --> 00:26:26,640
during that particular portion of the

688
00:26:30,630 --> 00:26:28,960

space walk but i'm sure that will be

689
00:26:32,549 --> 00:26:30,640
spectacular

690
00:26:35,350 --> 00:26:32,559
and just the last one for me has to do

691
00:26:37,909 --> 00:26:35,360
with your uh cryo margins uh i think i

692
00:26:40,390 --> 00:26:37,919
heard a report early on in your shift

693
00:26:43,269 --> 00:26:40,400
today that there yet one day and five

694
00:26:45,510 --> 00:26:43,279
hours and i'm wondering if uh that is

695
00:26:48,149 --> 00:26:45,520
the case and whether that would be

696
00:26:49,110 --> 00:26:48,159
enough to uh take an extension day if

697
00:26:51,990 --> 00:26:49,120
you

698
00:26:54,630 --> 00:26:52,000
for some reason needed to

699
00:26:56,630 --> 00:26:54,640
yes as far as the

700
00:26:58,789 --> 00:26:56,640
cryo and the consumables margin for this

701
00:27:00,470 --> 00:26:58,799
mission we do have an extra day

702
00:27:02,470 --> 00:27:00,480
available

703
00:27:04,950 --> 00:27:02,480
a lot of that was basically because we

704
00:27:08,390 --> 00:27:04,960
launched on time we load extra

705
00:27:10,149 --> 00:27:08,400
consumables for the cryogenic systems to

706
00:27:13,830 --> 00:27:10,159
support what we call pad holds so we

707
00:27:16,230 --> 00:27:13,840
don't have to continue to load up the

708
00:27:18,549 --> 00:27:16,240
cryogenic oxygen and hydrogen tanks to

709
00:27:20,070 --> 00:27:18,559
supply power the fuel cells

710
00:27:22,630 --> 00:27:20,080
for sitting on the launch pad due to

711
00:27:24,470 --> 00:27:22,640
weather or any other circumstance and uh

712
00:27:26,789 --> 00:27:24,480
we launched on time so we used all that

713
00:27:28,149 --> 00:27:26,799

pad hold margin and we took it to orbit

714
00:27:31,110 --> 00:27:28,159
with us

715
00:27:33,750 --> 00:27:31,120
and we've got in excess of a day it's

716
00:27:35,750 --> 00:27:33,760
one day in five hours and right now

717
00:27:37,750 --> 00:27:35,760
that's just margin in our pocket

718
00:27:39,990 --> 00:27:37,760
we'll use it for any number of reasons

719
00:27:41,750 --> 00:27:40,000
if it's required for high priority

720
00:27:43,669 --> 00:27:41,760
reasons whether that's

721
00:27:45,190 --> 00:27:43,679
to mitigate problems with either

722
00:27:46,870 --> 00:27:45,200
atlantis or the international space

723
00:27:48,870 --> 00:27:46,880
station or to manage problems with any

724
00:27:50,470 --> 00:27:48,880
of the planned spacewalks it's a little

725
00:27:53,269 --> 00:27:50,480
premature to give that margin to

726
00:27:55,029 --> 00:27:53,279
anything just because we've got a lot of

727
00:27:57,029 --> 00:27:55,039
mission ahead of us we've got all three

728
00:27:59,190 --> 00:27:57,039
spacewalks we've got installation of

729
00:28:01,190 --> 00:27:59,200
rossvet we've got to return the

730
00:28:03,590 --> 00:28:01,200
integrated cargo carrier to the

731
00:28:05,909 --> 00:28:03,600
shuttle's payload bay for return and

732
00:28:08,230 --> 00:28:05,919
we've just got the vast majority of the

733
00:28:10,630 --> 00:28:08,240
primary mission objectives ahead of us

734
00:28:12,230 --> 00:28:10,640
and we're just again carrying that in

735
00:28:13,990 --> 00:28:12,240
case we need it later

736
00:28:15,029 --> 00:28:14,000
right now there's no plan to extend the

737
00:28:17,269 --> 00:28:15,039
mission

738
00:28:19,190 --> 00:28:17,279

but we'll look for direction from the

739
00:28:21,510 --> 00:28:19,200
mission management team or any other

740
00:28:23,350 --> 00:28:21,520
parties should we need to extend the

741
00:28:24,710 --> 00:28:23,360
mission and we'll talk about that as

742
00:28:26,950 --> 00:28:24,720
necessary

743
00:28:29,029 --> 00:28:26,960
that's it for me thanks very much okay

744
00:28:30,870 --> 00:28:29,039
and finally on the phone bridge charles

745
00:28:32,430 --> 00:28:30,880
atkinson

746
00:28:34,950 --> 00:28:32,440
good afternoon charles jackson with

747
00:28:36,549 --> 00:28:34,960
spacenews.com mike i was wondering if

748
00:28:38,470 --> 00:28:36,559
you could describe how delicate it will

749
00:28:41,669 --> 00:28:38,480
be for the station's arm to install the

750
00:28:43,990 --> 00:28:41,679
icc onto the transporter and what steps

751
00:28:46,549 --> 00:28:44,000
are then performed to latch it down

752
00:28:48,950 --> 00:28:46,559
initially

753
00:28:51,830 --> 00:28:48,960
the uh cargo carrier that we're carrying

754
00:28:54,230 --> 00:28:51,840
up has two grapple fixtures and the

755
00:28:56,630 --> 00:28:54,240
first we'll use to pull it out of the

756
00:28:59,190 --> 00:28:56,640
shuttle's payload bay with the station's

757
00:29:01,510 --> 00:28:59,200
robotic arm and then we'll uh position

758
00:29:03,110 --> 00:29:01,520
it over on the uh the mobile transporter

759
00:29:05,190 --> 00:29:03,120
and here you can see an animation of it

760
00:29:07,110 --> 00:29:05,200
being pulled out of the payload bay

761
00:29:09,909 --> 00:29:07,120
i wouldn't say that the robotic

762
00:29:11,430 --> 00:29:09,919
operation is any more complex than what

763
00:29:13,110 --> 00:29:11,440

we've done in the past again we did

764
00:29:15,830 --> 00:29:13,120
something very similar to this on

765
00:29:18,230 --> 00:29:15,840
sts-127

766
00:29:19,669 --> 00:29:18,240
it does require some precision you have

767
00:29:22,470 --> 00:29:19,679
to thread it through

768
00:29:24,230 --> 00:29:22,480
the space station structure between the

769
00:29:27,669 --> 00:29:24,240
japanese experiment module and the

770
00:29:29,990 --> 00:29:27,679
mobile and the in the main truss system

771
00:29:31,269 --> 00:29:30,000
on there to find the mobile transporter

772
00:29:33,269 --> 00:29:31,279
and then once you locate it to the

773
00:29:35,430 --> 00:29:33,279
mobile transporter there's a another

774
00:29:37,269 --> 00:29:35,440
grapple fixture on that and it'll close

775
00:29:39,830 --> 00:29:37,279
a set of snares

776
00:29:41,350 --> 00:29:39,840
on the on the extra grapple fixture and

777
00:29:42,950 --> 00:29:41,360
then once we've confirmed that the

778
00:29:44,870 --> 00:29:42,960
snares are closed on the mobile

779
00:29:47,510 --> 00:29:44,880
transporter we'll ungrapple the

780
00:29:49,909 --> 00:29:47,520
station's robotic arm and back it off

781
00:29:52,389 --> 00:29:49,919
it is a precision operation it does

782
00:29:54,549 --> 00:29:52,399
require a lot of training and we've got

783
00:29:57,110 --> 00:29:54,559
the right folks on board atlantis and

784
00:29:58,870 --> 00:29:57,120
the international space station to do it

785
00:30:01,269 --> 00:29:58,880
but again it's

786
00:30:03,669 --> 00:30:01,279
it's somewhat familiar territory to what

787
00:30:05,590 --> 00:30:03,679
we've done that's not to uh to downplay

788
00:30:07,190 --> 00:30:05,600

how complex and operation it is it's

789
00:30:09,750 --> 00:30:07,200
just something that

790
00:30:11,590 --> 00:30:09,760
we've seen and done before

791
00:30:13,990 --> 00:30:11,600
okay thanks and one last one changing

792
00:30:16,310 --> 00:30:14,000
course here on wednesday will be the jsc

793
00:30:18,149 --> 00:30:16,320
nasa tweet up and uh with this busy

794
00:30:19,990 --> 00:30:18,159
mission unfolding will you be checking

795
00:30:22,070 --> 00:30:20,000
your own twitter feed uh for what the

796
00:30:24,070 --> 00:30:22,080
space sweeps will be noting on this

797
00:30:25,430 --> 00:30:24,080
flight

798
00:30:26,389 --> 00:30:25,440
during the mission

799
00:30:46,070 --> 00:30:26,399
i

800
00:30:47,750 --> 00:30:46,080
okay thank you

801
00:30:49,510 --> 00:30:47,760
okay back here in houston i don't

802
00:30:52,470 --> 00:30:49,520
believe we have any follow-up questions

803
00:30:54,310 --> 00:30:52,480
so with the icc cargo carrier operation

804
00:30:55,990 --> 00:30:54,320
in progress we'll call it a briefing a

805
00:30:57,990 --> 00:30:56,000
couple of programming notes before we

806
00:30:59,750 --> 00:30:58,000
close our next briefing on nasa

807
00:31:02,230 --> 00:30:59,760
television is right around the corner at

808
00:31:04,549 --> 00:31:02,240
3 pm central time 4 pm eastern time with

809
00:31:05,909 --> 00:31:04,559
leroy kane the deputy space shuttle

810
00:31:07,669 --> 00:31:05,919
program manager and chairman of the

811
00:31:09,990 --> 00:31:07,679
mission management team following

812
00:31:11,830 --> 00:31:10,000
today's daily meeting of the mmt that is

813
00:31:14,789 --> 00:31:11,840

going on as we speak

814
00:31:17,430 --> 00:31:14,799
atlantis crew begins at sleep period at

815
00:31:19,029 --> 00:31:17,440
6 20 p.m central time tonight we will

816
00:31:21,590 --> 00:31:19,039
air our flight day highlights right

817
00:31:23,830 --> 00:31:21,600
after that at 7 pm central time with all

818
00:31:25,990 --> 00:31:23,840
of that spectacular video from today's

819
00:31:27,750 --> 00:31:26,000
rendezvous and docking operations the

820
00:31:29,350 --> 00:31:27,760
highlights will be broadcast every hour

821
00:31:32,230 --> 00:31:29,360
on the hour throughout the crew sleep

822
00:31:34,710 --> 00:31:32,240
period our first iss flight director

823
00:31:36,870 --> 00:31:34,720
update interview from console with space

824
00:31:39,430 --> 00:31:36,880
station flight director scott stover is

825
00:31:41,590 --> 00:31:39,440
scheduled late tonight at 11 30 pm

826
00:31:43,669 --> 00:31:41,600
central time and then in the wee hours

827
00:31:46,470 --> 00:31:43,679
on monday atlantis crew will be awakened

828
00:31:48,389 --> 00:31:46,480
at 2 20 a.m central time to gear up for

829
00:31:51,190 --> 00:31:48,399
the first spacewalk of the mission that

830
00:31:54,070 --> 00:31:51,200
spacewalk is scheduled to begin at about

831
00:31:55,990 --> 00:31:54,080
7 15 a.m central time monday morning or

832
00:31:58,230 --> 00:31:56,000
earlier if garrett reisman and steve

833
00:32:00,389 --> 00:31:58,240
bowen are running ahead of schedule you

834
00:32:01,830 --> 00:32:00,399
can follow all of the activities of the

835
00:32:05,830 --> 00:32:01,840
shuttle and station cruise on our

836
00:32:07,509 --> 00:32:05,840
website at www.nasa.gov

837
00:32:09,269 --> 00:32:07,519
well that will with that we'll wrap up

838
00:32:11,990 --> 00:32:09,279

the briefing go back to mission control