
Space Cente
enter

1
00:00:05,269 --> 00:00:02,629
good afternoon and welcome back to

2
00:00:07,829 --> 00:00:05,279
nasa's johnson space center for our post

3
00:00:10,070 --> 00:00:07,839
mission management team meeting briefing

4
00:00:12,150 --> 00:00:10,080
this is the flight day three of the

5
00:00:14,230 --> 00:00:12,160
sts-134 space shuttle mission to the

6
00:00:15,910 --> 00:00:14,240
international space station so for the

7
00:00:18,230 --> 00:00:15,920
briefing we have opening comments from

8
00:00:20,310 --> 00:00:18,240
leroy kane who was the chairman of the m

9
00:00:22,150 --> 00:00:20,320
t meeting and also is the deputy program

10
00:00:24,790 --> 00:00:22,160
manager for the space shuttle and then

11
00:00:26,230 --> 00:00:24,800
we'll take questions leroy thank you

12
00:00:27,349 --> 00:00:26,240
kylie it's good to be back with you

13
00:00:29,349 --> 00:00:27,359

today

14
00:00:32,150 --> 00:00:29,359
we've had another spectacular day on

15
00:00:33,910 --> 00:00:32,160
orbit with the endeavor and crew

16
00:00:35,670 --> 00:00:33,920
i know you've been briefed on the uh on

17
00:00:38,310 --> 00:00:35,680
the rendezvous and docking which was uh

18
00:00:41,110 --> 00:00:38,320
which was flawless and and uh

19
00:00:41,910 --> 00:00:41,120
um and went very well

20
00:00:44,389 --> 00:00:41,920
the

21
00:00:46,869 --> 00:00:44,399
crew got on um

22
00:00:49,350 --> 00:00:46,879
after that with uh with the express

23
00:00:52,310 --> 00:00:49,360
logistics carrier operations and and all

24
00:00:54,389 --> 00:00:52,320
of that went very well also um

25
00:00:56,150 --> 00:00:54,399
and they rounded out their day with uh

26
00:00:59,029 --> 00:00:56,160
with some other activities that were on

27
00:01:01,510 --> 00:00:59,039
the timeline they're sleeping now

28
00:01:02,869 --> 00:01:01,520
on orbit the shuttle crew is sleeping

29
00:01:05,350 --> 00:01:02,879
and

30
00:01:08,469 --> 00:01:05,360
so things have gone really well

31
00:01:10,789 --> 00:01:08,479
since we were last here and

32
00:01:13,429 --> 00:01:10,799
the vehicle continues to perform

33
00:01:15,429 --> 00:01:13,439
very well as well

34
00:01:17,030 --> 00:01:15,439
the in the mmt today we had a couple of

35
00:01:18,870 --> 00:01:17,040
items to talk about

36
00:01:20,950 --> 00:01:18,880
and i'll just briefly mention a few of

37
00:01:21,990 --> 00:01:20,960
those we did get

38
00:01:24,390 --> 00:01:22,000

all of the

39
00:01:26,469 --> 00:01:24,400
rpm photos on the ground and so the team

40
00:01:28,070 --> 00:01:26,479
has been pouring over that data and we

41
00:01:30,390 --> 00:01:28,080
have a good bit of that

42
00:01:32,310 --> 00:01:30,400
assessment to complete yet

43
00:01:34,950 --> 00:01:32,320
but they brought in a status of that and

44
00:01:35,670 --> 00:01:34,960
i'll get to that in a minute

45
00:01:39,590 --> 00:01:35,680
the

46
00:01:41,429 --> 00:01:39,600
you're aware of that we use primarily

47
00:01:44,149 --> 00:01:41,439
for ascent

48
00:01:47,429 --> 00:01:44,159
to give us any indications of impacts

49
00:01:48,630 --> 00:01:47,439
we turned that on periodically on orbit

50
00:01:50,630 --> 00:01:48,640
and

51
00:01:52,310 --> 00:01:50,640
the team reported we didn't have any

52
00:01:53,990 --> 00:01:52,320
reportable items from any of the

53
00:01:55,749 --> 00:01:54,000
on-orbit monitoring periods that it's

54
00:01:58,149 --> 00:01:55,759
been on so far so

55
00:01:59,510 --> 00:01:58,159
so that was uh that was summarized today

56
00:02:01,910 --> 00:01:59,520
as well

57
00:02:05,270 --> 00:02:01,920
the next time that that system will be

58
00:02:07,590 --> 00:02:05,280
active will be during the soyuz undock

59
00:02:09,910 --> 00:02:07,600
activity on monday currently scheduled

60
00:02:14,869 --> 00:02:12,710
the the leading edge support system um

61
00:02:17,110 --> 00:02:14,879
the reinforced carbon carbon team

62
00:02:19,589 --> 00:02:17,120
um looked at all of their data from the

63
00:02:23,350 --> 00:02:19,599

flight day 2 inspections

64
00:02:24,710 --> 00:02:23,360
and all of the other imagery and and

65
00:02:26,390 --> 00:02:24,720
data that they have to look at and

66
00:02:28,309 --> 00:02:26,400
analyze and they've determined that they

67
00:02:30,869 --> 00:02:28,319
don't have any regions of interest where

68
00:02:33,030 --> 00:02:30,879
we need to go look at any more detail

69
00:02:35,110 --> 00:02:33,040
and so we've essentially cleared the

70
00:02:36,790 --> 00:02:35,120
wing leading edge

71
00:02:38,070 --> 00:02:36,800
and they were able to brief us on that

72
00:02:39,430 --> 00:02:38,080
today as well

73
00:02:40,790 --> 00:02:39,440
um

74
00:02:42,869 --> 00:02:40,800
the uh

75
00:02:45,030 --> 00:02:42,879
where other imagery and assets are

76
00:02:47,430 --> 00:02:45,040
concerned we we're making good progress

77
00:02:49,030 --> 00:02:47,440
on the srbs um

78
00:02:51,270 --> 00:02:49,040
and they'll be doing open assessment

79
00:02:53,350 --> 00:02:51,280
here in the next uh 24 hours and we

80
00:02:55,589 --> 00:02:53,360
expect to get some video by about this

81
00:02:57,190 --> 00:02:55,599
time tomorrow the if not sooner the the

82
00:02:59,430 --> 00:02:57,200
video will be on the servers for the

83
00:03:00,949 --> 00:02:59,440
solid rocket booster videos and so we

84
00:03:01,910 --> 00:03:00,959
look forward to that

85
00:03:02,949 --> 00:03:01,920
um

86
00:03:05,670 --> 00:03:02,959
the

87
00:03:07,589 --> 00:03:05,680
quick look today you know that's where

88
00:03:09,670 --> 00:03:07,599

we do a very um

89
00:03:11,270 --> 00:03:09,680
high level overview of all of the

90
00:03:12,790 --> 00:03:11,280
various parameters from the from the

91
00:03:14,309 --> 00:03:12,800
launch and the asset and the vehicle

92
00:03:15,750 --> 00:03:14,319
performance

93
00:03:17,430 --> 00:03:15,760
to include the day of launch i load

94
00:03:18,949 --> 00:03:17,440
assessment

95
00:03:20,790 --> 00:03:18,959
guidance navigation and control

96
00:03:22,949 --> 00:03:20,800
performance

97
00:03:25,350 --> 00:03:22,959
the loads the aero the thermal

98
00:03:27,509 --> 00:03:25,360
and and they briefed us on that and

99
00:03:29,190 --> 00:03:27,519
and that quick look assessment

100
00:03:32,710 --> 00:03:29,200
the vehicle performance was very very

101
00:03:34,550 --> 00:03:32,720
good no no issues or concerns

102
00:03:35,589 --> 00:03:34,560
nothing poking out there that that we

103
00:03:37,670 --> 00:03:35,599
have

104
00:03:40,229 --> 00:03:37,680
to talk about so

105
00:03:43,589 --> 00:03:40,239
we got a good summary from from

106
00:03:44,830 --> 00:03:43,599
the rest of the team on a few very minor

107
00:03:46,949 --> 00:03:44,840
systems

108
00:03:48,149 --> 00:03:46,959
issues and

109
00:03:50,789 --> 00:03:48,159
there isn't anything there that's going

110
00:03:52,630 --> 00:03:50,799
to be any impact to the mission

111
00:03:54,949 --> 00:03:52,640
their

112
00:03:56,630 --> 00:03:54,959
very minor problems and and so they'll

113
00:03:58,710 --> 00:03:56,640

continue to work through those if if

114
00:04:00,949 --> 00:03:58,720
necessary

115
00:04:02,630 --> 00:04:00,959
the uh the other status we got today was

116
00:04:04,710 --> 00:04:02,640
from the the tile team the damage

117
00:04:05,750 --> 00:04:04,720
assessment team the dat as we refer to

118
00:04:07,830 --> 00:04:05,760
them

119
00:04:11,429 --> 00:04:07,840
they came in and they gave us their

120
00:04:14,630 --> 00:04:11,439
their uh assessment um of where they are

121
00:04:17,590 --> 00:04:14,640
in looking at all the photo data the

122
00:04:19,349 --> 00:04:17,600
photography data from the rpm

123
00:04:20,310 --> 00:04:19,359
uh really all of the data that we have

124
00:04:21,670 --> 00:04:20,320
in-house

125
00:04:22,790 --> 00:04:21,680
as of now

126
00:04:25,110 --> 00:04:22,800
and

127
00:04:27,350 --> 00:04:25,120
we have a few charts that i can show you

128
00:04:28,950 --> 00:04:27,360
to sort of summarize where we are as of

129
00:04:30,469 --> 00:04:28,960
now

130
00:04:33,430 --> 00:04:30,479
if we have them available kylie we can

131
00:04:35,590 --> 00:04:33,440
show the first chart

132
00:04:38,469 --> 00:04:35,600
this chart just shows the the bottom of

133
00:04:40,830 --> 00:04:38,479
the orbiter obviously in this graphic

134
00:04:43,830 --> 00:04:40,840
there are three boxes that are in

135
00:04:45,670 --> 00:04:43,840
yellow and those are areas that

136
00:04:47,749 --> 00:04:45,680
we need to get all of these areas i

137
00:04:50,710 --> 00:04:47,759
should stay at the front

138
00:04:53,350 --> 00:04:50,720

we're not finished assessing we're in

139
00:04:55,670 --> 00:04:53,360
the process of assessing

140
00:04:57,189 --> 00:04:55,680
these areas as well as some others

141
00:04:58,950 --> 00:04:57,199
but these were ones of interest that the

142
00:05:00,469 --> 00:04:58,960
team wanted to show us today and so we

143
00:05:02,150 --> 00:05:00,479
talked about them

144
00:05:04,310 --> 00:05:02,160
the ones in the yellow box are the ones

145
00:05:06,710 --> 00:05:04,320
that are at least initially of greater

146
00:05:08,150 --> 00:05:06,720
interest to us than the other ones

147
00:05:09,590 --> 00:05:08,160
and so i think we have a couple of

148
00:05:12,390 --> 00:05:09,600
charts to show you some more detail of

149
00:05:14,790 --> 00:05:12,400
the ones in yellow

150
00:05:16,950 --> 00:05:14,800
so we could go to that next first

151
00:05:18,310 --> 00:05:16,960
chart so in this site here

152
00:05:21,189 --> 00:05:18,320
it's just

153
00:05:23,270 --> 00:05:21,199
a little bit more detailed close-up view

154
00:05:25,830 --> 00:05:23,280
and you can see where

155
00:05:27,110 --> 00:05:25,840
the the white areas where we're missing

156
00:05:43,670 --> 00:05:27,120
the

157
00:05:45,590 --> 00:05:43,680
data that we need

158
00:05:47,830 --> 00:05:45,600
next chart

159
00:05:50,469 --> 00:05:47,840
this is uh the second of the yellow

160
00:05:51,749 --> 00:05:50,479
boxes and and if you can't put both up

161
00:05:53,749 --> 00:05:51,759
at the same time but if you kind of go

162
00:05:55,350 --> 00:05:53,759
back and forth between these detailed

163
00:05:56,870 --> 00:05:55,360

ones in the overall

164
00:05:59,029 --> 00:05:56,880
bottom of the orbiter chart you can sort

165
00:06:01,510 --> 00:05:59,039
of remind yourself the position of these

166
00:06:02,309 --> 00:06:01,520
so the one is kind of an area between

167
00:06:08,550 --> 00:06:02,319
the

168
00:06:10,550 --> 00:06:08,560
um

169
00:06:11,510 --> 00:06:10,560
and then the other one is is actually on

170
00:06:14,309 --> 00:06:11,520
the

171
00:06:16,150 --> 00:06:14,319
main landing gear door and that's this

172
00:06:19,189 --> 00:06:16,160
one here

173
00:06:21,270 --> 00:06:19,199
and then the next chart

174
00:06:23,990 --> 00:06:21,280
this is actually an area that's on the

175
00:06:25,430 --> 00:06:24,000
uh on the elevon itself

176
00:06:27,270 --> 00:06:25,440
um

177
00:06:29,990 --> 00:06:27,280
and so it's it

178
00:06:32,390 --> 00:06:30,000
crosses a couple of different tiles and

179
00:06:34,550 --> 00:06:32,400
then um the very leading edge of it is

180
00:06:36,230 --> 00:06:34,560
actually the tile that's on the on kind

181
00:06:38,950 --> 00:06:36,240
of on what looks like the hinge line if

182
00:06:42,230 --> 00:06:38,960
you look in the bigger picture

183
00:06:44,309 --> 00:06:42,240
so these are three areas that that are

184
00:06:46,070 --> 00:06:44,319
an example of some some areas where the

185
00:06:48,309 --> 00:06:46,080
team wants to do some more work some

186
00:06:49,589 --> 00:06:48,319
more assessment

187
00:06:51,270 --> 00:06:49,599
and

188
00:06:54,790 --> 00:06:51,280

as a normal part of our process they

189
00:06:59,909 --> 00:06:57,830
at this point what we have said is that

190
00:07:01,350 --> 00:06:59,919
we don't have any reason for concern or

191
00:07:05,270 --> 00:07:01,360
alarm

192
00:07:08,870 --> 00:07:07,029
placeholder in the timeline and that

193
00:07:11,270 --> 00:07:08,880
would be on flight day six which is

194
00:07:12,790 --> 00:07:11,280
saturday

195
00:07:13,990 --> 00:07:12,800
so what we've done is we've asked the

196
00:07:16,390 --> 00:07:14,000
ops team

197
00:07:17,589 --> 00:07:16,400
to go to the next level of preparation

198
00:07:19,029 --> 00:07:17,599
in terms of

199
00:07:20,550 --> 00:07:19,039
ensuring that we don't do anything to

200
00:07:22,230 --> 00:07:20,560
preclude being able to do that focus

201
00:07:23,510 --> 00:07:22,240
inspection if in fact the team comes

202
00:07:25,589 --> 00:07:23,520
back and says

203
00:07:27,189 --> 00:07:25,599
our analytical techniques we're not not

204
00:07:28,230 --> 00:07:27,199
able to clear one or more of these sites

205
00:07:29,350 --> 00:07:28,240
then we'll want to go get some more

206
00:07:31,510 --> 00:07:29,360
detailed

207
00:07:33,909 --> 00:07:31,520
photography and imagery of these sites

208
00:07:36,469 --> 00:07:33,919
and then we can go do that

209
00:07:39,350 --> 00:07:36,479
so we're very much in in the middle of

210
00:07:41,510 --> 00:07:39,360
this process i wanted to show you today

211
00:07:43,189 --> 00:07:41,520
kind of the areas that that we're still

212
00:07:45,909 --> 00:07:43,199
working on

213
00:07:47,670 --> 00:07:45,919

overall the the vehicle is pretty clean

214
00:07:50,710 --> 00:07:47,680
in terms of number of total number of

215
00:07:51,990 --> 00:07:50,720
damage sites um and these were a couple

216
00:07:54,150 --> 00:07:52,000
of the ones that we're going to look at

217
00:07:55,029 --> 00:07:54,160
in more detail and going forward

218
00:07:58,469 --> 00:07:55,039
determine whether or not there's

219
00:07:59,270 --> 00:07:58,479
anything else we need to do so

220
00:08:03,430 --> 00:07:59,280
we

221
00:08:06,869 --> 00:08:03,440
about the

222
00:08:08,950 --> 00:08:06,879
the undock the soyuz undock plans

223
00:08:10,950 --> 00:08:08,960
we will talk tomorrow morning in the

224
00:08:12,469 --> 00:08:10,960
space station program mission management

225
00:08:13,830 --> 00:08:12,479
team

226
00:08:15,589 --> 00:08:13,840
about

227
00:08:17,430 --> 00:08:15,599
in some level of detail between the

228
00:08:19,110 --> 00:08:17,440
shuttle and the station programs and the

229
00:08:20,950 --> 00:08:19,120
supporting teams we'll talk about what

230
00:08:23,189 --> 00:08:20,960
the plan is for the undock and and

231
00:08:24,710 --> 00:08:23,199
getting the photography

232
00:08:27,430 --> 00:08:24,720
we will then

233
00:08:29,749 --> 00:08:27,440
carry that discussion forward to the the

234
00:08:31,430 --> 00:08:29,759
shuttle mmt tomorrow afternoon

235
00:08:33,509 --> 00:08:31,440
and give the shuttle the broader shuttle

236
00:08:35,509 --> 00:08:33,519
team the benefit of uh

237
00:08:36,949 --> 00:08:35,519
of weighing in on on

238
00:08:38,709 --> 00:08:36,959

on the plans there

239
00:08:40,630 --> 00:08:38,719
and then we'll be prepared to go into

240
00:08:42,070 --> 00:08:40,640
friday morning to the station program

241
00:08:44,230 --> 00:08:42,080
mmt again

242
00:08:46,150 --> 00:08:44,240
um where i believe that they are

243
00:08:48,310 --> 00:08:46,160
planning on doing the uh

244
00:08:49,829 --> 00:08:48,320
the undock their standard undocked gono

245
00:08:51,990 --> 00:08:49,839
go that they would do for any departing

246
00:08:54,630 --> 00:08:52,000
vehicle um i believe they plan on doing

247
00:08:56,310 --> 00:08:54,640
on that on friday so uh we talked a

248
00:08:58,870 --> 00:08:56,320
little bit yesterday about the timeline

249
00:09:00,710 --> 00:08:58,880
for that with the respective mmts and i

250
00:09:02,790 --> 00:09:00,720
i didn't have enough detail on it yet

251
00:09:03,750 --> 00:09:02,800
and we do today we know that that's the

252
00:09:05,190 --> 00:09:03,760
plan

253
00:09:07,110 --> 00:09:05,200
and uh so we look forward to those

254
00:09:10,070 --> 00:09:07,120
discussions um

255
00:09:12,230 --> 00:09:10,080
so beyond that um the the the team is

256
00:09:13,509 --> 00:09:12,240
doing great the crew on orbit is doing

257
00:09:15,750 --> 00:09:13,519
great you can see that the vehicle

258
00:09:18,150 --> 00:09:15,760
performance is is continuing to be very

259
00:09:19,430 --> 00:09:18,160
very good um which helps us a lot in

260
00:09:21,990 --> 00:09:19,440
terms of being able to execute the

261
00:09:24,710 --> 00:09:22,000
mission um we're looking forward to uh

262
00:09:25,990 --> 00:09:24,720
the ams activities uh tomorrow tonight

263
00:09:27,430 --> 00:09:26,000

when the crew gets up it'll start

264
00:09:29,110 --> 00:09:27,440
tonight actually but

265
00:09:31,110 --> 00:09:29,120
it'll be in earnest in the in the wee

266
00:09:33,030 --> 00:09:31,120
hours of the morning tomorrow so a lot

267
00:09:34,470 --> 00:09:33,040
of folks very excited about that and we

268
00:09:35,829 --> 00:09:34,480
look forward to that

269
00:09:36,790 --> 00:09:35,839
and

270
00:09:41,509 --> 00:09:36,800
another

271
00:09:43,509 --> 00:09:41,519
um very productive day in orbit today as

272
00:09:45,509 --> 00:09:43,519
i said and uh so with that i think

273
00:09:46,790 --> 00:09:45,519
that's all i have gotten okay

274
00:09:57,030 --> 00:09:46,800
we'll start with questions here at the

275
00:10:02,230 --> 00:09:59,030
mark caro for aviation week i just

276
00:10:03,670 --> 00:10:02,240
wanted to ask you about part of the am s

277
00:10:06,069 --> 00:10:03,680
ops tomorrow

278
00:10:07,190 --> 00:10:06,079
is there any sort of thermal clock that

279
00:10:07,990 --> 00:10:07,200
that

280
00:10:10,389 --> 00:10:08,000
is

281
00:10:11,670 --> 00:10:10,399
critical to the transfer on that piece

282
00:10:12,470 --> 00:10:11,680
of hardware

283
00:10:17,030 --> 00:10:12,480
or

284
00:10:19,590 --> 00:10:17,040
some reason

285
00:10:21,670 --> 00:10:19,600
you had a difficulty yeah we have a

286
00:10:24,150 --> 00:10:21,680
clock um

287
00:10:26,790 --> 00:10:24,160
and uh but i don't think that it's a

288
00:10:28,949 --> 00:10:26,800

situation where we have really credible

289
00:10:32,310 --> 00:10:28,959
scenarios that would cause us

290
00:10:33,190 --> 00:10:32,320
any concern with that so um

291
00:10:38,230 --> 00:10:33,200
we

292
00:10:42,550 --> 00:10:38,240
should get into some kind of robotics

293
00:10:44,829 --> 00:10:42,560
contingency but i i think that's

294
00:10:49,910 --> 00:10:46,710
unlikely phillips loss with

295
00:10:51,910 --> 00:10:49,920
nasaspaceflight.com um on the the images

296
00:10:53,670 --> 00:10:51,920
that you showed us um

297
00:10:54,870 --> 00:10:53,680
what makes the three items that you were

298
00:10:56,949 --> 00:10:54,880
highlighting

299
00:10:58,150 --> 00:10:56,959
more of an interest or a priority in

300
00:10:59,430 --> 00:10:58,160
assessment

301
00:11:01,350 --> 00:10:59,440
and then

302
00:11:04,630 --> 00:11:01,360
in the the big picture with of the

303
00:11:07,509 --> 00:11:04,640
orbiter belly is it possible that that

304
00:11:10,790 --> 00:11:07,519
damage track was perhaps a common cause

305
00:11:13,509 --> 00:11:10,800
or caused from some common event

306
00:11:14,870 --> 00:11:13,519
yeah so um on your first question

307
00:11:16,949 --> 00:11:14,880
um

308
00:11:18,069 --> 00:11:16,959
the the individual sites course the team

309
00:11:19,910 --> 00:11:18,079
will

310
00:11:22,150 --> 00:11:19,920
um

311
00:11:23,829 --> 00:11:22,160
they're very good at this as you know

312
00:11:25,750 --> 00:11:23,839
and they're very thorough and they're

313
00:11:28,389 --> 00:11:25,760

very disciplined and and we will stay

314
00:11:29,670 --> 00:11:28,399
very much within our processes and

315
00:11:30,870 --> 00:11:29,680
within ourselves for doing these

316
00:11:33,269 --> 00:11:30,880
assessments so we don't want to get

317
00:11:36,710 --> 00:11:33,279
ahead of ourselves

318
00:11:37,910 --> 00:11:36,720
so each one of these sites is is unique

319
00:11:40,230 --> 00:11:37,920
in that

320
00:11:42,150 --> 00:11:40,240
the tiles are different geometry they're

321
00:11:44,389 --> 00:11:42,160
different thickness they're in different

322
00:11:46,150 --> 00:11:44,399
regions of of you know

323
00:11:48,150 --> 00:11:46,160
heating

324
00:11:51,110 --> 00:11:48,160
and so they're they're each very

325
00:11:53,030 --> 00:11:51,120
specific in terms of their capabilities

326
00:11:56,310 --> 00:11:53,040
and and they're specific in terms of the

327
00:11:58,150 --> 00:11:56,320
function of what it is that they need to

328
00:11:59,509 --> 00:11:58,160
to protect from a thermal protection

329
00:12:00,870 --> 00:11:59,519
system

330
00:12:03,430 --> 00:12:00,880
and so

331
00:12:07,110 --> 00:12:03,440
each damage area is unique also it has

332
00:12:08,629 --> 00:12:07,120
different size different overall

333
00:12:10,710 --> 00:12:08,639
you know length width and depth and

334
00:12:12,949 --> 00:12:10,720
different volume and all of those things

335
00:12:14,550 --> 00:12:12,959
play into

336
00:12:16,550 --> 00:12:14,560
the function of the tile and and if

337
00:12:17,990 --> 00:12:16,560
there's any um

338
00:12:19,110 --> 00:12:18,000

if there's anything to be studied in

339
00:12:21,750 --> 00:12:19,120
terms of

340
00:12:23,509 --> 00:12:21,760
you know whether there's a

341
00:12:25,990 --> 00:12:23,519
something of greater interest in one

342
00:12:27,509 --> 00:12:26,000
area than the next so

343
00:12:29,190 --> 00:12:27,519
it it

344
00:12:30,629 --> 00:12:29,200
involves looking at

345
00:12:32,470 --> 00:12:30,639
aerodynamically what we think will

346
00:12:34,870 --> 00:12:32,480
happen at each one of the sites

347
00:12:37,670 --> 00:12:34,880
obviously thermodynamically what will

348
00:12:38,389 --> 00:12:37,680
happen at each one of the sites

349
00:12:41,030 --> 00:12:38,399
and

350
00:12:44,150 --> 00:12:41,040
then the overall interaction of

351
00:12:45,910 --> 00:12:44,160
you know from one site to the next um

352
00:12:47,590 --> 00:12:45,920
you know what happens

353
00:12:49,990 --> 00:12:47,600
uh with the flow

354
00:12:51,590 --> 00:12:50,000
and so it gets pretty involved

355
00:12:53,190 --> 00:12:51,600
there we take them individually and then

356
00:12:54,949 --> 00:12:53,200
you have to take it as an overall system

357
00:12:58,230 --> 00:12:54,959
as well

358
00:13:00,629 --> 00:12:58,240
these three areas are areas where

359
00:13:02,790 --> 00:13:00,639
generally there's a little more depth we

360
00:13:03,990 --> 00:13:02,800
believe preliminarily

361
00:13:07,110 --> 00:13:04,000
there's a little more depth to the

362
00:13:10,710 --> 00:13:07,120
damage areas

363
00:13:11,990 --> 00:13:10,720

and or they're in areas where

364
00:13:12,790 --> 00:13:12,000
you know we have

365
00:13:16,470 --> 00:13:12,800
more

366
00:13:20,069 --> 00:13:16,480
greater interest because of the thermal

367
00:13:22,150 --> 00:13:20,079
effects and so um

368
00:13:26,150 --> 00:13:22,160
you know

369
00:13:28,230 --> 00:13:26,160
frankly until we do some more analysis

370
00:13:30,870 --> 00:13:28,240
and until we get a little bit better

371
00:13:33,910 --> 00:13:30,880
fidelity on the on the photography data

372
00:13:35,590 --> 00:13:33,920
um you know we may change our mind on on

373
00:13:37,110 --> 00:13:35,600
which which site may

374
00:13:38,949 --> 00:13:37,120
may be of greater interest than others

375
00:13:40,949 --> 00:13:38,959
but at least initially these these are

376
00:13:42,949 --> 00:13:40,959
the three areas that we think

377
00:13:45,030 --> 00:13:42,959
we want to go do some more work on

378
00:13:46,550 --> 00:13:45,040
i should mention that work will will be

379
00:13:48,550 --> 00:13:46,560
done um

380
00:13:50,230 --> 00:13:48,560
you know probably in the next 24 48

381
00:13:52,230 --> 00:13:50,240
hours

382
00:13:54,069 --> 00:13:52,240
and and there's a lot of

383
00:13:55,910 --> 00:13:54,079
there's some 3d analysis that will

384
00:13:58,949 --> 00:13:55,920
happen

385
00:14:00,150 --> 00:13:58,959
we have experts in the photo labs

386
00:14:03,990 --> 00:14:00,160
we'll do some

387
00:14:06,069 --> 00:14:04,000
and help us with

388
00:14:08,470 --> 00:14:06,079

um dimensions the dimensional part of

389
00:14:09,910 --> 00:14:08,480
this is pretty important um and then the

390
00:14:12,790 --> 00:14:09,920
aero and thermal folks will do a lot

391
00:14:13,990 --> 00:14:12,800
more work to determine whether or not

392
00:14:15,750 --> 00:14:14,000
you know there's anything that they need

393
00:14:22,550 --> 00:14:15,760
more detail on on any of their

394
00:14:26,949 --> 00:14:24,870
gina cinceri abc news

395
00:14:29,590 --> 00:14:26,959
a couple questions i know you keep a

396
00:14:31,990 --> 00:14:29,600
pretty good database of previous tile

397
00:14:34,389 --> 00:14:32,000
damage in areas like this so have you

398
00:14:36,629 --> 00:14:34,399
can you put in context with

399
00:14:40,550 --> 00:14:36,639
previous damage and then what is the

400
00:14:41,590 --> 00:14:40,560
heating on reentry in that area

401
00:14:44,230 --> 00:14:41,600
um

402
00:14:47,829 --> 00:14:44,240
well your first question we do have a

403
00:14:49,590 --> 00:14:47,839
very thorough and complete database

404
00:14:51,350 --> 00:14:49,600
it'd be premature for me to try to

405
00:14:52,949 --> 00:14:51,360
compare it because i don't think i know

406
00:14:54,629 --> 00:14:52,959
enough about any of these damage sites

407
00:14:57,110 --> 00:14:54,639
to be able to do that

408
00:14:58,870 --> 00:14:57,120
but the experts will do that for us that

409
00:15:01,189 --> 00:14:58,880
that is um

410
00:15:03,269 --> 00:15:01,199
you know one of the the

411
00:15:04,870 --> 00:15:03,279
um the good things about this process is

412
00:15:07,269 --> 00:15:04,880
we we

413
00:15:09,189 --> 00:15:07,279

you know the team will bring in

414
00:15:10,870 --> 00:15:09,199
comparative analyses comparative

415
00:15:12,629 --> 00:15:10,880
assessments and we'll do

416
00:15:14,790 --> 00:15:12,639
you know we will leverage on our

417
00:15:16,069 --> 00:15:14,800
previous experience in in previous areas

418
00:15:18,069 --> 00:15:16,079
that we've looked at

419
00:15:20,949 --> 00:15:18,079
um so i can't tell you sitting here

420
00:15:23,269 --> 00:15:20,959
today oh this was like you know mission

421
00:15:26,310 --> 00:15:23,279
whatever on vehicle whatever i i it

422
00:15:28,790 --> 00:15:26,320
would that would all be guesswork

423
00:15:31,189 --> 00:15:28,800
so and the heating is different too

424
00:15:32,710 --> 00:15:31,199
at different places along the along the

425
00:15:34,310 --> 00:15:32,720
surface of the vehicle at different

426
00:15:35,910 --> 00:15:34,320
points during entry

427
00:15:37,829 --> 00:15:35,920
so um

428
00:15:39,269 --> 00:15:37,839
you know it's it's

429
00:15:41,509 --> 00:15:39,279
it's in the

430
00:15:42,790 --> 00:15:41,519
thousands of degrees

431
00:15:45,269 --> 00:15:42,800
and depending on which site you're

432
00:15:47,910 --> 00:15:45,279
talking about at what point during entry

433
00:15:50,150 --> 00:15:47,920
it's going to change so

434
00:15:51,829 --> 00:15:50,160
we'll talk more about that as well as we

435
00:15:53,829 --> 00:15:51,839
talk through each one of these areas

436
00:15:55,350 --> 00:15:53,839
through the assessments is is what kind

437
00:15:59,509 --> 00:15:55,360
of

438
00:16:01,670 --> 00:15:59,519

different areas

439
00:16:07,509 --> 00:16:01,680
and you know those details will be will

440
00:16:11,990 --> 00:16:09,910
clara moskowitz with space.com and i'm

441
00:16:13,910 --> 00:16:12,000
just wondering um if given the unique

442
00:16:15,749 --> 00:16:13,920
history of the external tank that

443
00:16:17,350 --> 00:16:15,759
endeavor launched with this time if

444
00:16:21,030 --> 00:16:17,360
you're at all surprised that the vehicle

445
00:16:23,910 --> 00:16:22,389
no i'm not surprised

446
00:16:26,069 --> 00:16:23,920
i talked a little bit yesterday about

447
00:16:28,230 --> 00:16:26,079
the performance of the external tank and

448
00:16:30,550 --> 00:16:28,240
uh we did a lot of work on the tank both

449
00:16:32,550 --> 00:16:30,560
uh actual touch labor and and with some

450
00:16:34,470 --> 00:16:32,560
modifications as well as

451
00:16:36,629 --> 00:16:34,480
uh analytically

452
00:16:38,629 --> 00:16:36,639
um and putting it side by side with our

453
00:16:41,670 --> 00:16:38,639
other return to flight tanks

454
00:16:43,749 --> 00:16:41,680
and so um not surprised uh the

455
00:16:46,150 --> 00:16:43,759
performance was was outstanding on this

456
00:16:47,509 --> 00:16:46,160
tank by all accounts

457
00:16:49,509 --> 00:16:47,519
we knew

458
00:16:51,189 --> 00:16:49,519
what areas we could expect in all

459
00:16:52,629 --> 00:16:51,199
likelihood to have some phone losses

460
00:16:55,590 --> 00:16:52,639
from

461
00:16:56,870 --> 00:16:55,600
and that's turning out to be the case

462
00:16:58,870 --> 00:16:56,880
and

463
00:17:03,030 --> 00:16:58,880

so i think it's pretty much

464
00:17:06,309 --> 00:17:04,870
okay i know we have uh

465
00:17:07,909 --> 00:17:06,319
reporters on the phone bridge as well so

466
00:17:12,870 --> 00:17:07,919
we'll go there next with bill harwood

467
00:17:17,350 --> 00:17:15,669
can you hear us bill harwood

468
00:17:18,630 --> 00:17:17,360
yeah hey leroy can y'all hear me okay

469
00:17:19,990 --> 00:17:18,640
yes we can

470
00:17:21,429 --> 00:17:20,000
thanks um

471
00:17:23,429 --> 00:17:21,439
couple of quick ones for me is there any

472
00:17:25,429 --> 00:17:23,439
sense of the timing on these i mean

473
00:17:27,189 --> 00:17:25,439
obviously the the et cam there wasn't

474
00:17:29,190 --> 00:17:27,199
anything like this that was certainly

475
00:17:30,870 --> 00:17:29,200
obvious anyway i'm just wondering if you

476
00:17:32,950 --> 00:17:30,880
had any sense of when in ascent this

477
00:17:35,990 --> 00:17:32,960
might have happened

478
00:17:38,230 --> 00:17:36,000
not yet bill we haven't been able to map

479
00:17:40,150 --> 00:17:38,240
anything that we're seeing in in the

480
00:17:42,390 --> 00:17:40,160
ascent video or imagery

481
00:17:44,789 --> 00:17:42,400
to to damaged sites i mean we'll we'll

482
00:17:46,549 --> 00:17:44,799
work on that as a matter of course

483
00:17:48,549 --> 00:17:46,559
because that's part of what we do in the

484
00:17:50,390 --> 00:17:48,559
process but we don't we haven't been

485
00:17:52,390 --> 00:17:50,400
able to do that yet

486
00:17:54,230 --> 00:17:52,400
thanks and uh in looking at the the ding

487
00:17:56,789 --> 00:17:54,240
on the on the i guess it's the starboard

488
00:17:58,230 --> 00:17:56,799

landing gear door is that right um

489
00:18:00,950 --> 00:17:58,240
it looked awfully similar to the one on

490
00:18:02,630 --> 00:18:00,960
118 that you guys that was near the door

491
00:18:05,190 --> 00:18:02,640
anyway and that i guess coincidentally i

492
00:18:06,789 --> 00:18:05,200
guess scott kelly was the commander of

493
00:18:08,710 --> 00:18:06,799
but you guys decided in that case it was

494
00:18:10,390 --> 00:18:08,720
okay to fly as is i think it was right

495
00:18:12,230 --> 00:18:10,400
over a structural spa or something gave

496
00:18:13,669 --> 00:18:12,240
you a bit of a thermal heat sink is

497
00:18:15,270 --> 00:18:13,679
there any special connection you can

498
00:18:18,070 --> 00:18:15,280
tell us about in terms of something

499
00:18:20,870 --> 00:18:18,080
directly on a landing gear door

500
00:18:23,430 --> 00:18:20,880
thermally thanks

501
00:18:25,750 --> 00:18:23,440
um yeah your your recollection is good

502
00:18:27,430 --> 00:18:25,760
bill we've had a few flights where we've

503
00:18:30,150 --> 00:18:27,440
where we've had some areas that we

504
00:18:32,310 --> 00:18:30,160
looked at more closely sts-118 was one

505
00:18:34,789 --> 00:18:32,320
of those

506
00:18:36,630 --> 00:18:34,799
and in fact one of the tiles it's not

507
00:18:39,270 --> 00:18:36,640
one of the ones that we have

508
00:18:40,870 --> 00:18:39,280
in in the yellow blocks on the

509
00:18:43,350 --> 00:18:40,880
on the graphic that i showed you but one

510
00:18:46,070 --> 00:18:43,360
of the other ones is actually

511
00:18:48,230 --> 00:18:46,080
a tile that was also damaged on sts-118

512
00:18:51,029 --> 00:18:48,240
of course it's a new tile

513
00:18:53,190 --> 00:18:51,039

but it's the same tile location

514
00:18:55,190 --> 00:18:53,200
so there are some similarities and and

515
00:18:58,470 --> 00:18:55,200
we and we do as i was mentioning earlier

516
00:19:00,470 --> 00:18:58,480
we do leverage off of our database

517
00:19:02,470 --> 00:19:00,480
i don't know enough about the

518
00:19:04,870 --> 00:19:02,480
the damage on the landing gear door yet

519
00:19:06,789 --> 00:19:04,880
to be able to talk specifically about

520
00:19:09,350 --> 00:19:06,799
um

521
00:19:10,870 --> 00:19:09,360
about anything beyond

522
00:19:12,470 --> 00:19:10,880
you know what the team has given us so

523
00:19:13,990 --> 00:19:12,480
far bill so i

524
00:19:16,070 --> 00:19:14,000
will have some more detail obviously we

525
00:19:16,950 --> 00:19:16,080
can talk about that as we go forward and

526
00:19:19,110 --> 00:19:16,960
uh

527
00:19:20,070 --> 00:19:19,120
and determine exactly what

528
00:19:21,990 --> 00:19:20,080
um

529
00:19:23,270 --> 00:19:22,000
you know what the magnitude of the

530
00:19:27,830 --> 00:19:23,280
damage is

531
00:19:31,350 --> 00:19:29,590
okay next on the line is irene klotz

532
00:19:33,430 --> 00:19:31,360
please

533
00:19:35,990 --> 00:19:33,440
hi um thank you very much irene klops

534
00:19:38,390 --> 00:19:36,000
with reuters um leroy i had a few

535
00:19:40,390 --> 00:19:38,400
questions uh the first is i hope this

536
00:19:41,909 --> 00:19:40,400
doesn't just show that i'm totally

537
00:19:44,549 --> 00:19:41,919
ignorant and haven't been following

538
00:19:45,990 --> 00:19:44,559

things but i thought that the change of

539
00:19:50,230 --> 00:19:46,000
command

540
00:19:52,710 --> 00:19:50,240
from iss on iss was rotating between

541
00:19:55,270 --> 00:19:52,720
american and russian and i think that

542
00:19:57,270 --> 00:19:55,280
this change of command is going from

543
00:19:59,270 --> 00:19:57,280
russian to russian and i understand this

544
00:20:01,590 --> 00:19:59,280
is probably a question for bill

545
00:20:05,110 --> 00:20:01,600
gerstenmaier but do you have any insight

546
00:20:09,830 --> 00:20:07,029
you're exactly right that's a question

547
00:20:11,750 --> 00:20:09,840
for uh for gerst or for our my friends

548
00:20:13,669 --> 00:20:11,760
in the space station program

549
00:20:22,710 --> 00:20:13,679
uh

550
00:20:25,510 --> 00:20:22,720
answer on that hey thanks um

551
00:20:28,390 --> 00:20:25,520
the other thing is um you know um based

552
00:20:31,110 --> 00:20:28,400
at kennedy there's uh with every with

553
00:20:33,510 --> 00:20:31,120
every last there's a big event you know

554
00:20:35,909 --> 00:20:33,520
last rollover last hoisting left

555
00:20:37,909 --> 00:20:35,919
everything and i'm wondering if um you

556
00:20:40,950 --> 00:20:37,919
all at mission control are getting a

557
00:20:43,590 --> 00:20:40,960
sense of wrapping things up with this

558
00:20:45,669 --> 00:20:43,600
on the shuttle program and and in

559
00:20:48,310 --> 00:20:45,679
conjunction with that if you could maybe

560
00:20:50,470 --> 00:20:48,320
discuss a little bit about how important

561
00:20:53,350 --> 00:20:50,480
this mission is for the overall

562
00:20:57,510 --> 00:20:53,360
long-term viability of space station

563
00:20:57,520 --> 00:21:01,029

okay irene well

564
00:21:01,039 --> 00:21:05,270
you know as far as the last um

565
00:21:10,070 --> 00:21:07,909
what i would say about that is where

566
00:21:11,590 --> 00:21:10,080
where houston and mission control and

567
00:21:13,270 --> 00:21:11,600
and you know that aspect of the shuttle

568
00:21:16,070 --> 00:21:13,280
program is concerned

569
00:21:18,549 --> 00:21:16,080
um if you were to go over there today

570
00:21:20,470 --> 00:21:18,559
and immerse yourself

571
00:21:23,909 --> 00:21:20,480
with those folks and and be part of what

572
00:21:29,190 --> 00:21:27,510
during a mission when we're executing

573
00:21:30,549 --> 00:21:29,200
you wouldn't know

574
00:21:32,149 --> 00:21:30,559
that there was anything like that going

575
00:21:34,230 --> 00:21:32,159
on so

576
00:21:36,230 --> 00:21:34,240
it would be just as if you were

577
00:21:37,270 --> 00:21:36,240
going and sitting with them you know 10

578
00:21:39,909 --> 00:21:37,280
years ago

579
00:21:41,350 --> 00:21:39,919
during a shuttle mission

580
00:21:43,669 --> 00:21:41,360
and it's one of the things that really

581
00:21:44,870 --> 00:21:43,679
needs to be heralded i think about this

582
00:21:46,710 --> 00:21:44,880
team

583
00:21:48,710 --> 00:21:46,720
across the entire program is that during

584
00:21:50,549 --> 00:21:48,720
this entire process

585
00:21:53,190 --> 00:21:50,559
they have maintained

586
00:21:55,510 --> 00:21:53,200
a very high level of professionalism

587
00:21:59,669 --> 00:21:55,520
integrity

588
00:22:01,669 --> 00:21:59,679

their dedication to the job has has been

589
00:22:03,110 --> 00:22:01,679
unwavering

590
00:22:05,669 --> 00:22:03,120
and we see this in in all the

591
00:22:08,070 --> 00:22:05,679
organizations now to include

592
00:22:09,830 --> 00:22:08,080
you know the other centers

593
00:22:11,350 --> 00:22:09,840
that in particular at kennedy and

594
00:22:13,029 --> 00:22:11,360
marshall

595
00:22:14,390 --> 00:22:13,039
as well as here

596
00:22:15,750 --> 00:22:14,400
and

597
00:22:17,909 --> 00:22:15,760
so i i

598
00:22:19,750 --> 00:22:17,919
i my sense is you can't really tell a

599
00:22:21,350 --> 00:22:19,760
difference um

600
00:22:23,190 --> 00:22:21,360
you know when we're

601
00:22:25,270 --> 00:22:23,200
when we're going about doing the

602
00:22:26,710 --> 00:22:25,280
execution of the mission and uh in this

603
00:22:29,110 --> 00:22:26,720
case a shuttle dock mission with the

604
00:22:29,909 --> 00:22:29,120
station team

605
00:22:31,669 --> 00:22:29,919
so

606
00:22:33,430 --> 00:22:31,679
you know the mission itself is is very

607
00:22:36,710 --> 00:22:33,440
important as you know as we've i think

608
00:22:37,990 --> 00:22:36,720
chronicled leading up to this point um

609
00:22:40,230 --> 00:22:38,000
it's uh

610
00:22:42,070 --> 00:22:40,240
you know long time coming a lot of folks

611
00:22:43,510 --> 00:22:42,080
are really anticipating

612
00:22:45,190 --> 00:22:43,520
the activities that we're about to get

613
00:22:47,830 --> 00:22:45,200

into tonight and tomorrow morning with

614
00:22:50,630 --> 00:22:47,840
with ams i think that's huge

615
00:22:52,870 --> 00:22:50,640
um and very important for folks and and

616
00:22:54,950 --> 00:22:52,880
and really we all recognize

617
00:22:56,950 --> 00:22:54,960
the significance of that

618
00:22:58,070 --> 00:22:56,960
uh just that part of the mission in and

619
00:23:00,310 --> 00:22:58,080
of itself

620
00:23:01,830 --> 00:23:00,320
and overall obviously from a you know

621
00:23:04,230 --> 00:23:01,840
the other activities that we're doing

622
00:23:06,789 --> 00:23:04,240
with the elc

623
00:23:08,870 --> 00:23:06,799
and in terms of of transfer activities

624
00:23:10,710 --> 00:23:08,880
and the normal

625
00:23:12,549 --> 00:23:10,720
kind of work that we do on shuttle

626
00:23:14,310 --> 00:23:12,559
station dock missions

627
00:23:15,830 --> 00:23:14,320
it is very important at this point in

628
00:23:18,630 --> 00:23:15,840
the station's life

629
00:23:19,990 --> 00:23:18,640
um and uh

630
00:23:23,110 --> 00:23:20,000
and and the next one will be very

631
00:23:25,350 --> 00:23:23,120
important in that regard also so

632
00:23:27,029 --> 00:23:25,360
it's difficult to say you know one is

633
00:23:28,789 --> 00:23:27,039
more important than the other because

634
00:23:31,669 --> 00:23:28,799
they're not created equal

635
00:23:33,430 --> 00:23:31,679
in most in most regards and so i

636
00:23:35,350 --> 00:23:33,440
wouldn't want to get into that realm of

637
00:23:37,190 --> 00:23:35,360
of things but

638
00:23:40,070 --> 00:23:37,200

very important mission

639
00:23:43,269 --> 00:23:40,080
for the for the agency

640
00:23:45,909 --> 00:23:43,279
certainly for us in the shuttle program

641
00:23:48,070 --> 00:23:45,919
and as we've said now for the last

642
00:23:50,070 --> 00:23:48,080
couple years

643
00:23:52,549 --> 00:23:50,080
we're very we're dedicated and

644
00:23:54,390 --> 00:23:52,559
determined to finish strong and and i

645
00:23:55,830 --> 00:23:54,400
think you see us doing that we're doing

646
00:23:57,190 --> 00:23:55,840
everything we can

647
00:24:02,230 --> 00:23:57,200
to uh

648
00:24:04,710 --> 00:24:02,240
think this mission has been

649
00:24:05,669 --> 00:24:04,720
uh consistent with that theme so

650
00:24:07,269 --> 00:24:05,679
um

651
00:24:09,350 --> 00:24:07,279
important mission for us and and it's

652
00:24:11,669 --> 00:24:09,360
going very very well

653
00:24:14,710 --> 00:24:11,679
thankfully right um the last question i

654
00:24:16,630 --> 00:24:14,720
had was about the um 16-day mission is

655
00:24:20,549 --> 00:24:16,640
there any possibility of extending

656
00:24:24,789 --> 00:24:22,870
well you know

657
00:24:27,350 --> 00:24:24,799
there's always a possibility

658
00:24:28,950 --> 00:24:27,360
and you know we know we know that when

659
00:24:31,350 --> 00:24:28,960
we get on orbit we try to take things

660
00:24:33,110 --> 00:24:31,360
from one day to the next and we have a

661
00:24:35,110 --> 00:24:33,120
very good plan the team has worked

662
00:24:36,630 --> 00:24:35,120
really hard on this plan we can sort of

663
00:24:37,909 --> 00:24:36,640

plug and play these days as i talked

664
00:24:39,110 --> 00:24:37,919
about yesterday a little bit and the

665
00:24:41,510 --> 00:24:39,120
flight directors can give you more

666
00:24:42,789 --> 00:24:41,520
detail on that

667
00:24:44,950 --> 00:24:42,799
so far

668
00:24:47,510 --> 00:24:44,960
we're not looking at doing that

669
00:24:49,990 --> 00:24:47,520
irene but you know um we certainly have

670
00:24:52,230 --> 00:24:50,000
the capability to do that uh it's within

671
00:24:54,630 --> 00:24:52,240
our experience base to do that

672
00:24:55,990 --> 00:24:54,640
um so between us and and what the space

673
00:24:57,669 --> 00:24:56,000
station program

674
00:24:59,430 --> 00:24:57,679
uh needs are as we go through the

675
00:25:01,350 --> 00:24:59,440
mission you know we'll take that one day

676
00:25:02,950 --> 00:25:01,360
at a time as we always do

677
00:25:04,470 --> 00:25:02,960
and if we decide we want to talk about

678
00:25:06,149 --> 00:25:04,480
it we'll do our normal assessment we'll

679
00:25:08,230 --> 00:25:06,159
do our normal trades

680
00:25:09,669 --> 00:25:08,240
um you know uh

681
00:25:11,590 --> 00:25:09,679
and depending on what the reason for it

682
00:25:16,230 --> 00:25:11,600
would be you know we'll have those we'll

683
00:25:16,240 --> 00:25:21,510
okay next on the line is todd halverson

684
00:25:25,990 --> 00:25:23,990
thanks todd albertson of florida today

685
00:25:29,190 --> 00:25:26,000
with maybe a couple but

686
00:25:31,430 --> 00:25:29,200
first of all um leroy i was wondering

687
00:25:33,510 --> 00:25:31,440
i'm just kind of trying to gauge the

688
00:25:34,390 --> 00:25:33,520

significance of these towel things i

689
00:25:36,470 --> 00:25:34,400
mean

690
00:25:39,590 --> 00:25:36,480
uh what in

691
00:25:42,669 --> 00:25:39,600
your judgment is a potential that

692
00:25:44,470 --> 00:25:42,679
these might cause the need for focused

693
00:25:47,510 --> 00:25:44,480
inspection

694
00:25:51,190 --> 00:25:47,520
uh and i'm wondering whether this is

695
00:25:54,230 --> 00:25:51,200
something that uh might require repairs

696
00:25:56,950 --> 00:25:54,240
or endanger the crew during re-entry i'm

697
00:25:59,110 --> 00:25:56,960
just trying to get a handle on uh the

698
00:26:03,029 --> 00:25:59,120
overall significance

699
00:26:04,230 --> 00:26:03,039
of uh these tall head stinks

700
00:26:05,909 --> 00:26:04,240
okay

701
00:26:07,590 --> 00:26:05,919
well um

702
00:26:09,510 --> 00:26:07,600
todd what i would say is

703
00:26:13,110 --> 00:26:09,520
you know these are areas that we don't

704
00:26:15,190 --> 00:26:13,120
have enough data or analytical or

705
00:26:17,190 --> 00:26:15,200
photographic or otherwise

706
00:26:18,549 --> 00:26:17,200
yeah we haven't done enough work yet to

707
00:26:19,830 --> 00:26:18,559
be able to determine whether or not

708
00:26:23,110 --> 00:26:19,840
there's

709
00:26:24,470 --> 00:26:23,120
information or assessment that we need

710
00:26:26,870 --> 00:26:24,480
on these areas

711
00:26:28,630 --> 00:26:26,880
to include first of all um

712
00:26:31,029 --> 00:26:28,640
focused inspection

713
00:26:32,710 --> 00:26:31,039

um so that's what we're in the throes of

714
00:26:35,990 --> 00:26:32,720
of doing that work right now and the

715
00:26:38,789 --> 00:26:37,269
we're going to stay within ourselves

716
00:26:42,870 --> 00:26:38,799
we're going to stay within our processes

717
00:26:44,549 --> 00:26:42,880
we have very tried and true and proven

718
00:26:46,870 --> 00:26:44,559
processes and techniques for doing all

719
00:26:48,149 --> 00:26:46,880
this work

720
00:26:49,909 --> 00:26:48,159
i would tell you as i said in the

721
00:26:52,870 --> 00:26:49,919
beginning

722
00:26:55,750 --> 00:26:52,880
this isn't this is not cause for alarm

723
00:26:57,909 --> 00:26:55,760
it's not cause for for any concern

724
00:26:59,190 --> 00:26:57,919
we know how to deal with these things in

725
00:27:01,269 --> 00:26:59,200
terms of

726
00:27:02,789 --> 00:27:01,279
how to assess them

727
00:27:03,669 --> 00:27:02,799
we know that if we get to the point

728
00:27:05,510 --> 00:27:03,679
where

729
00:27:06,630 --> 00:27:05,520
we need some more data for our

730
00:27:08,230 --> 00:27:06,640
assessment

731
00:27:09,750 --> 00:27:08,240
we have a plan for going and doing that

732
00:27:11,029 --> 00:27:09,760
we know how to go and do that it's in

733
00:27:14,070 --> 00:27:11,039
the timeline to be able to go and do

734
00:27:15,029 --> 00:27:14,080
that with focus inspection

735
00:27:16,390 --> 00:27:15,039
and then

736
00:27:17,190 --> 00:27:16,400
to the other part of your question i

737
00:27:17,909 --> 00:27:17,200
guess

738
00:27:24,070 --> 00:27:17,919

i

739
00:27:26,070 --> 00:27:24,080
um

740
00:27:28,230 --> 00:27:26,080
to uh to do that at this point we've got

741
00:27:29,990 --> 00:27:28,240
some more work to do in these areas

742
00:27:31,590 --> 00:27:30,000
uh it wouldn't be fair to the team

743
00:27:34,950 --> 00:27:31,600
that's that's working really hard on

744
00:27:36,149 --> 00:27:34,960
these assessments for me to do that

745
00:27:37,029 --> 00:27:36,159
and i don't think there really be any

746
00:27:39,909 --> 00:27:37,039
value

747
00:27:43,350 --> 00:27:39,919
added in me doing that um i'm i am not

748
00:27:44,950 --> 00:27:43,360
concerned um and and i'm in the in

749
00:27:47,830 --> 00:27:44,960
myself and the team we're certainly not

750
00:27:50,310 --> 00:27:47,840
alarmed by what we're seeing here

751
00:27:52,389 --> 00:27:50,320
my confidence is derived in

752
00:27:55,110 --> 00:27:52,399
in knowing that we have

753
00:27:57,029 --> 00:27:55,120
a highly skilled very professional

754
00:27:58,070 --> 00:27:57,039
very thorough

755
00:27:59,590 --> 00:27:58,080
team

756
00:28:00,950 --> 00:27:59,600
we've been through these kind of things

757
00:28:02,630 --> 00:28:00,960
before

758
00:28:04,230 --> 00:28:02,640
we understand the work that we need to

759
00:28:05,990 --> 00:28:04,240
go do

760
00:28:08,230 --> 00:28:06,000
and and we're very much in the midst of

761
00:28:10,070 --> 00:28:08,240
doing that work and

762
00:28:12,389 --> 00:28:10,080
so we're going to take it one day at a

763
00:28:14,070 --> 00:28:12,399

time we'll bring in the data as we're

764
00:28:16,870 --> 00:28:14,080
able to evaluate it through the mmt

765
00:28:18,710 --> 00:28:16,880
process and share that with you

766
00:28:21,110 --> 00:28:18,720
and so you'll be right there and step

767
00:28:21,990 --> 00:28:21,120
with us in terms of knowing what i know

768
00:28:24,230 --> 00:28:22,000
um

769
00:28:26,789 --> 00:28:24,240
and uh and i i don't wanna

770
00:28:28,389 --> 00:28:26,799
i don't wanna speculate um

771
00:28:31,350 --> 00:28:28,399
on on the other part of your your

772
00:28:33,909 --> 00:28:31,360
question for today

773
00:28:36,230 --> 00:28:33,919
okay i appreciate that um

774
00:28:37,190 --> 00:28:36,240
i just wanted to ask you one other thing

775
00:28:40,870 --> 00:28:37,200
and that

776
00:28:41,669 --> 00:28:40,880
is in regard to the final four evas of

777
00:28:43,669 --> 00:28:41,679
the

778
00:28:44,909 --> 00:28:43,679
shuttle program i can remember back in

779
00:28:48,230 --> 00:28:44,919
the early

780
00:28:52,789 --> 00:28:48,240
1990s to mid 1990s when greg harbaugh

781
00:28:54,789 --> 00:28:52,799
was the uh chief of the eva office we

782
00:28:57,669 --> 00:28:54,799
there there was all this talk about the

783
00:28:59,350 --> 00:28:57,679
the wall of eba and how difficult it was

784
00:29:01,029 --> 00:28:59,360
going to be to

785
00:29:03,430 --> 00:29:01,039
you know assemble the international

786
00:29:05,830 --> 00:29:03,440
space station i was wondering if you

787
00:29:07,590 --> 00:29:05,840
could describe for us um

788
00:29:10,950 --> 00:29:07,600

you know what exactly

789
00:29:12,870 --> 00:29:10,960
that wall looked like then and

790
00:29:14,230 --> 00:29:12,880
whether you have any surprise at all

791
00:29:17,510 --> 00:29:14,240
that um

792
00:29:21,590 --> 00:29:17,520
things have come off as um

793
00:29:23,110 --> 00:29:21,600
well slickly as i have today thanks

794
00:29:24,710 --> 00:29:23,120
yeah that's uh

795
00:29:26,549 --> 00:29:24,720
that's an excellent question and i you

796
00:29:28,470 --> 00:29:26,559
know it's something that i

797
00:29:31,269 --> 00:29:28,480
personally have pondered quite a bit

798
00:29:33,350 --> 00:29:31,279
going back to uh before return to flight

799
00:29:34,549 --> 00:29:33,360
um but just a little story about that

800
00:29:36,710 --> 00:29:34,559
you know i

801
00:29:38,149 --> 00:29:36,720
i was down in florida one time uh during

802
00:29:40,630 --> 00:29:38,159
that return to flight process and we

803
00:29:41,830 --> 00:29:40,640
went over into the sspf where we have

804
00:29:43,669 --> 00:29:41,840
where at the time we had all of the

805
00:29:47,110 --> 00:29:43,679
space station hardware

806
00:29:49,750 --> 00:29:47,120
these various elements and and nodes and

807
00:29:52,710 --> 00:29:49,760
in large pieces of the space station

808
00:29:54,230 --> 00:29:52,720
that today are on orbit

809
00:29:55,750 --> 00:29:54,240
and they have sort of a catwalk area

810
00:29:57,830 --> 00:29:55,760
that you can walk along where you can

811
00:30:00,870 --> 00:29:57,840
have a really good vantage point of the

812
00:30:01,909 --> 00:30:00,880
floor and of the sspf which at the time

813
00:30:03,430 --> 00:30:01,919

was

814
00:30:05,750 --> 00:30:03,440
um

815
00:30:07,990 --> 00:30:05,760
literally full of

816
00:30:09,750 --> 00:30:08,000
space station hardware in in all these

817
00:30:12,149 --> 00:30:09,760
various pieces

818
00:30:13,669 --> 00:30:12,159
and it really gave me pause thinking

819
00:30:15,110 --> 00:30:13,679
about you know because i'd been very

820
00:30:16,950 --> 00:30:15,120
much involved

821
00:30:19,029 --> 00:30:16,960
and in the throes of the return to

822
00:30:20,950 --> 00:30:19,039
flight uh process

823
00:30:23,110 --> 00:30:20,960
um and the things that we were doing

824
00:30:24,549 --> 00:30:23,120
with the shuttle to get ourselves ready

825
00:30:26,630 --> 00:30:24,559
to go fly

826
00:30:30,549 --> 00:30:26,640
and

827
00:30:31,269 --> 00:30:30,559
about the task that we had in front of

828
00:30:35,750 --> 00:30:31,279
us

829
00:30:37,590 --> 00:30:35,760
hardware in most cases almost everyone

830
00:30:39,590 --> 00:30:37,600
several of them anyway we say that way

831
00:30:41,269 --> 00:30:39,600
it's a fair way to say it

832
00:30:44,950 --> 00:30:41,279
involve one or more

833
00:30:46,549 --> 00:30:44,960
spacewalks to be able to assemble

834
00:30:47,990 --> 00:30:46,559
and and check out

835
00:30:49,510 --> 00:30:48,000
and configure

836
00:30:51,430 --> 00:30:49,520
to get to the point with the space

837
00:30:54,789 --> 00:30:51,440
station as we know it today

838
00:30:57,509 --> 00:30:54,799

and it seemed to me at the time to be an

839
00:30:58,549 --> 00:30:57,519
incredibly daunting task

840
00:31:01,110 --> 00:30:58,559
um

841
00:31:02,549 --> 00:31:01,120
and so i thought a lot about that then

842
00:31:05,029 --> 00:31:02,559
and since then

843
00:31:06,870 --> 00:31:05,039
as we've kind of just done one mission

844
00:31:08,789 --> 00:31:06,880
at a time

845
00:31:10,070 --> 00:31:08,799
we've worked through one spacewalk at a

846
00:31:12,149 --> 00:31:10,080
time

847
00:31:14,950 --> 00:31:12,159
our space station friends have have done

848
00:31:17,029 --> 00:31:14,960
an unbelievable job

849
00:31:19,110 --> 00:31:17,039
working with our teams in

850
00:31:21,350 --> 00:31:19,120
choreographing all these things

851
00:31:22,950 --> 00:31:21,360
and and working every

852
00:31:25,669 --> 00:31:22,960
mission every space walk of every

853
00:31:27,350 --> 00:31:25,679
mission every potential contingency to

854
00:31:29,590 --> 00:31:27,360
to the level of detail that just makes

855
00:31:31,669 --> 00:31:29,600
your eyes water

856
00:31:33,669 --> 00:31:31,679
and then they kind of just all for the

857
00:31:34,950 --> 00:31:33,679
most part came off

858
00:31:39,590 --> 00:31:34,960
you know

859
00:31:41,430 --> 00:31:39,600
almost without a hitch and

860
00:31:43,029 --> 00:31:41,440
you know spacewalking is is one of the

861
00:31:44,870 --> 00:31:43,039
most challenging

862
00:31:48,549 --> 00:31:44,880
things that we do and it's one of the

863
00:31:49,430 --> 00:31:48,559

areas that we put a lot of emphasis on

864
00:31:50,470 --> 00:31:49,440
and

865
00:31:52,230 --> 00:31:50,480
so

866
00:31:53,750 --> 00:31:52,240
i had a lot of

867
00:31:55,669 --> 00:31:53,760
a lot of

868
00:31:58,149 --> 00:31:55,679
thoughts about that going into the

869
00:32:00,389 --> 00:31:58,159
return of flight missions leading up to

870
00:32:02,149 --> 00:32:00,399
each one of them as we clicked off each

871
00:32:03,190 --> 00:32:02,159
mission leading up to where we are today

872
00:32:05,350 --> 00:32:03,200
todd

873
00:32:07,830 --> 00:32:05,360
and and um

874
00:32:10,710 --> 00:32:07,840
you know i wouldn't say

875
00:32:13,509 --> 00:32:10,720
um you know surprise is not the word

876
00:32:15,509 --> 00:32:13,519
but um certainly it

877
00:32:17,909 --> 00:32:15,519
it makes you think about

878
00:32:20,310 --> 00:32:17,919
what has been accomplished and

879
00:32:22,310 --> 00:32:20,320
and the potential that was there for us

880
00:32:23,990 --> 00:32:22,320
to have some challenges and some things

881
00:32:27,669 --> 00:32:24,000
to overcome that we were fortunate to

882
00:32:29,669 --> 00:32:27,679
not have and i i say fortunate but

883
00:32:33,509 --> 00:32:29,679
really that's the result in it

884
00:32:35,190 --> 00:32:33,519
of a lot of hard work by a lot of people

885
00:32:37,190 --> 00:32:35,200
in terms of building the hardware

886
00:32:39,029 --> 00:32:37,200
checking it out processing it getting

887
00:32:40,710 --> 00:32:39,039
ready to go

888
00:32:42,230 --> 00:32:40,720

the teams that built the procedures and

889
00:32:43,269 --> 00:32:42,240
the techniques and spent all the time in

890
00:32:45,110 --> 00:32:43,279
the pool

891
00:32:47,750 --> 00:32:45,120
and in the control center and you know

892
00:32:49,350 --> 00:32:47,760
on and on and on and on

893
00:32:51,029 --> 00:32:49,360
so much work

894
00:32:52,149 --> 00:32:51,039
has gone each into each one of those

895
00:32:54,149 --> 00:32:52,159
missions

896
00:32:56,870 --> 00:32:54,159
to make sure that we could handle any

897
00:32:58,389 --> 00:32:56,880
contingencies if they came up and and we

898
00:33:00,549 --> 00:32:58,399
just had a lot of good fortune and the

899
00:33:01,350 --> 00:33:00,559
hardware has really performed well

900
00:33:03,669 --> 00:33:01,360
um

901
00:33:05,909 --> 00:33:03,679
and we've tried to take lessons learned

902
00:33:07,750 --> 00:33:05,919
from you know earlier times in in both

903
00:33:09,830 --> 00:33:07,760
programs really shuttle and station and

904
00:33:10,870 --> 00:33:09,840
implement a lot of those things

905
00:33:15,509 --> 00:33:10,880
as we

906
00:33:17,509 --> 00:33:15,519
station in earnest because these were

907
00:33:20,149 --> 00:33:17,519
some pretty significant significant

908
00:33:21,669 --> 00:33:20,159
tasks that we had to do so

909
00:33:23,110 --> 00:33:21,679
pretty amazing overall

910
00:33:25,350 --> 00:33:23,120
when you look at what we have on orbit

911
00:33:27,990 --> 00:33:25,360
today we've said it over and over again

912
00:33:29,990 --> 00:33:28,000
you kind of have to pinch yourself

913
00:33:31,590 --> 00:33:30,000

and it's something for the team to be

914
00:33:33,750 --> 00:33:31,600
really really proud of

915
00:33:38,470 --> 00:33:33,760
and certainly the station is is a huge

916
00:33:50,789 --> 00:33:40,310
okay i believe that was all online so

917
00:33:53,990 --> 00:33:51,990
mark carow

918
00:33:55,990 --> 00:33:54,000
for aviation week

919
00:33:58,389 --> 00:33:56,000
i just wonder if any thought or

920
00:34:00,470 --> 00:33:58,399
discussion was given to

921
00:34:03,110 --> 00:34:00,480
using any of the

922
00:34:07,029 --> 00:34:03,120
space station spacewalk opportunities to

923
00:34:09,190 --> 00:34:07,039
do any look at the underside tile on

924
00:34:11,750 --> 00:34:09,200
endeavor

925
00:34:13,909 --> 00:34:11,760
yeah we're not there

926
00:34:15,750 --> 00:34:13,919
that's that's uh

927
00:34:17,030 --> 00:34:15,760
way on down the line from where we are

928
00:34:18,550 --> 00:34:17,040
right now

929
00:34:21,030 --> 00:34:18,560
if we had determined that we need to do

930
00:34:21,990 --> 00:34:21,040
anything additional or not

931
00:34:24,550 --> 00:34:22,000
so

932
00:34:26,629 --> 00:34:24,560
that's uh you know if we're on step 10

933
00:34:28,149 --> 00:34:26,639
of a thousand that that's like

934
00:34:29,669 --> 00:34:28,159
700 something

935
00:34:31,190 --> 00:34:29,679
and

936
00:34:33,270 --> 00:34:31,200
so we're just we're just not to that

937
00:34:34,869 --> 00:34:33,280
point quite honestly mark

938
00:34:38,710 --> 00:34:34,879

but the team is you know this team as

939
00:34:39,829 --> 00:34:38,720
well as i do they're very creative

940
00:34:41,750 --> 00:34:39,839
and

941
00:34:43,109 --> 00:34:41,760
we know we have a lot of capability

942
00:34:46,230 --> 00:34:43,119
between

943
00:34:48,069 --> 00:34:46,240
what the shuttle offers to itself

944
00:34:50,790 --> 00:34:48,079
for these kind of things as well as what

945
00:34:52,389 --> 00:34:50,800
we have um at when we're when we're at

946
00:34:55,510 --> 00:34:52,399
space station

947
00:34:57,750 --> 00:34:55,520
and so we enjoy a lot of really uh

948
00:34:59,430 --> 00:34:57,760
great capability in that regard and uh

949
00:35:01,430 --> 00:34:59,440
and we'll leverage whatever

950
00:35:02,710 --> 00:35:01,440
we we would need but i don't anticipate

951
00:35:05,589 --> 00:35:02,720
anything like that

952
00:35:07,030 --> 00:35:05,599
in terms of what we're looking at here

953
00:35:09,750 --> 00:35:07,040
any more follow-ups

954
00:35:13,750 --> 00:35:12,069
clara moskowitz again for space.com and

955
00:35:16,390 --> 00:35:13,760
i'm just wondering about the robotics

956
00:35:18,310 --> 00:35:16,400
work tomorrow to install the ams and if

957
00:35:20,390 --> 00:35:18,320
you could speak to kind of big picture

958
00:35:22,230 --> 00:35:20,400
just how difficult um challenging and

959
00:35:24,069 --> 00:35:22,240
and how much risk is involved in those

960
00:35:25,829 --> 00:35:24,079
robotic operations

961
00:35:27,990 --> 00:35:25,839
okay um

962
00:35:29,670 --> 00:35:28,000
well i i don't know that it's the most

963
00:35:31,910 --> 00:35:29,680

challenging robotics operations we've

964
00:35:33,990 --> 00:35:31,920
ever done you know

965
00:35:36,550 --> 00:35:34,000
the team

966
00:35:38,470 --> 00:35:36,560
goes to a lot of effort to

967
00:35:39,990 --> 00:35:38,480
to make sure that when we choreograph

968
00:35:41,430 --> 00:35:40,000
these things it's done in a way that

969
00:35:42,950 --> 00:35:41,440
that we have off ramps and we have

970
00:35:45,670 --> 00:35:42,960
places where we can

971
00:35:47,589 --> 00:35:45,680
we can stop and evaluate

972
00:35:49,430 --> 00:35:47,599
and so from a contingency standpoint you

973
00:35:52,069 --> 00:35:49,440
know there's

974
00:35:53,910 --> 00:35:52,079
no stone unturned in that regard

975
00:35:56,310 --> 00:35:53,920
it's certainly a challenging operation

976
00:35:58,790 --> 00:35:56,320
anytime you're you're moving around

977
00:36:00,470 --> 00:35:58,800
you know large masses like this that

978
00:36:02,069 --> 00:36:00,480
have the kind of dimensions that the ams

979
00:36:04,230 --> 00:36:02,079
have and you're moving it from the

980
00:36:06,710 --> 00:36:04,240
shuttle payload bay the cargo bay

981
00:36:08,870 --> 00:36:06,720
um to a specific place

982
00:36:10,310 --> 00:36:08,880
um where then you need to hand it off

983
00:36:11,670 --> 00:36:10,320
and then move it to a specific place on

984
00:36:13,430 --> 00:36:11,680
the space station you know that there's

985
00:36:15,349 --> 00:36:13,440
a number of challenges involved with

986
00:36:19,750 --> 00:36:15,359
that

987
00:36:21,270 --> 00:36:19,760
for the robotics operators

988
00:36:24,069 --> 00:36:21,280

both on the shuttle and the station so

989
00:36:26,870 --> 00:36:24,079
it's pretty involved pretty complex

990
00:36:34,230 --> 00:36:26,880
i

991
00:36:37,030 --> 00:36:34,240
they're all

992
00:36:40,550 --> 00:36:37,040
kind of unique in that regard and uh

993
00:36:42,630 --> 00:36:40,560
this one will be uh this one will be um

994
00:36:45,030 --> 00:36:42,640
very exciting for the team to get to get

995
00:36:46,310 --> 00:36:45,040
this work done tomorrow and uh and i

996
00:36:47,750 --> 00:36:46,320
know there's a lot of folks around the

997
00:36:49,349 --> 00:36:47,760
world that are pretty interested in in

998
00:36:52,069 --> 00:36:49,359
what we're doing here so

999
00:36:54,950 --> 00:36:52,079
we're really looking forward to it

1000
00:36:56,630 --> 00:36:54,960
any more paula seeing none we'll go

1001
00:36:58,710 --> 00:36:56,640
ahead and wrap up the briefing for this

1002
00:37:00,470 --> 00:36:58,720
afternoon coming up on nasa television

1003
00:37:02,390 --> 00:37:00,480
we will start airing the flight day

1004
00:37:04,150 --> 00:37:02,400
highlights from flight day three those

1005
00:37:05,670 --> 00:37:04,160
videos will begin at the top of the hour

1006
00:37:07,829 --> 00:37:05,680
during the crew sleep shift starting at

1007
00:37:10,310 --> 00:37:07,839
4 pm central time and then the shuttle

1008
00:37:13,109 --> 00:37:10,320
crew is scheduled to awaken at 101 am

1009
00:37:15,270 --> 00:37:13,119
central time and start that robotic work

1010
00:37:16,870 --> 00:37:15,280
to install the alpha magnetic

1011
00:37:18,790 --> 00:37:16,880
spectrometer 2

1012
00:37:21,910 --> 00:37:18,800
leading up to the station robotic arm

1013
00:37:23,589 --> 00:37:21,920

installing it about 2 41 am central time