
on Space Co
Center

1
00:00:06,630 --> 00:00:04,390
well good afternoon everybody welcome to

2
00:00:08,950 --> 00:00:06,640
nasa's johnson space center for our post

3
00:00:11,430 --> 00:00:08,960
mission management team press briefing

4
00:00:12,870 --> 00:00:11,440
joining us once again is leroy kane he's

5
00:00:14,950 --> 00:00:12,880
the deputy manager of the space shuttle

6
00:00:16,950 --> 00:00:14,960
program and the chairman of the mmt and

7
00:00:18,550 --> 00:00:16,960
he'll have some comments for you and

8
00:00:20,070 --> 00:00:18,560
then of course we'll take questions here

9
00:00:21,750 --> 00:00:20,080
and then out on the phone bridge that

10
00:00:23,029 --> 00:00:21,760
i'll turn it over to leroy

11
00:00:25,109 --> 00:00:23,039
thank you kyle

12
00:00:27,189 --> 00:00:25,119
good afternoon it's very nice to be here

13
00:00:28,710 --> 00:00:27,199

with you again today i'm

14
00:00:30,710 --> 00:00:28,720
pleased to report

15
00:00:32,229 --> 00:00:30,720
that the rendezvous and docking of

16
00:00:33,750 --> 00:00:32,239
atlantis to the international space

17
00:00:35,590 --> 00:00:33,760
station was

18
00:00:37,510 --> 00:00:35,600
absolutely flawless this morning i think

19
00:00:39,350 --> 00:00:37,520
most of you hopefully had a chance to

20
00:00:41,110 --> 00:00:39,360
see it i personally

21
00:00:43,750 --> 00:00:41,120
felt privileged to be part of this team

22
00:00:45,750 --> 00:00:43,760
as i as i watched it from my

23
00:00:47,190 --> 00:00:45,760
from my post in

24
00:00:49,670 --> 00:00:47,200
in the back

25
00:00:51,590 --> 00:00:49,680
halls of mission control today it was uh

26
00:00:54,069 --> 00:00:51,600
it was really

27
00:00:55,990 --> 00:00:54,079
moving to see the final docking of the

28
00:00:58,790 --> 00:00:56,000
shuttle to the space station so

29
00:01:00,310 --> 00:00:58,800
i believe this was the 37th docking of

30
00:01:01,510 --> 00:01:00,320
the shuttle to the international space

31
00:01:04,070 --> 00:01:01,520
station

32
00:01:05,590 --> 00:01:04,080
and for atlantis it would be the 12th

33
00:01:07,109 --> 00:01:05,600
time that atlantis had docked to the

34
00:01:09,030 --> 00:01:07,119
station

35
00:01:10,830 --> 00:01:09,040
and if you're counting over all dockings

36
00:01:13,190 --> 00:01:10,840
for for atlantis

37
00:01:15,190 --> 00:01:13,200
atlantis had the most missions to the

38
00:01:17,429 --> 00:01:15,200

mir station

39
00:01:19,749 --> 00:01:17,439
tallying up seven total mir

40
00:01:22,149 --> 00:01:19,759
mir flights so atlantis i believe is the

41
00:01:25,030 --> 00:01:22,159
orbiter that has the most dockings to

42
00:01:26,789 --> 00:01:25,040
space stations for that matter

43
00:01:29,510 --> 00:01:26,799
things continue to go really well for us

44
00:01:31,510 --> 00:01:29,520
it was a very good day this morning um

45
00:01:33,109 --> 00:01:31,520
the crew's day continues for a couple

46
00:01:34,230 --> 00:01:33,119
more hours here before they go to bed

47
00:01:36,469 --> 00:01:34,240
and so they have a little bit more

48
00:01:38,310 --> 00:01:36,479
activity but it's been a very good day

49
00:01:41,030 --> 00:01:38,320
for us since i was here last to talk to

50
00:01:43,109 --> 00:01:41,040
you it's been a great day for the crew

51
00:01:44,469 --> 00:01:43,119
on orbit for both the shuttle and the

52
00:01:46,630 --> 00:01:44,479
station crew

53
00:01:48,069 --> 00:01:46,640
as well as the entire team on the on the

54
00:01:49,590 --> 00:01:48,079
ground they've just done an outstanding

55
00:01:51,270 --> 00:01:49,600
job so

56
00:01:53,429 --> 00:01:51,280
in the in the mission management team

57
00:01:55,350 --> 00:01:53,439
today we talked only briefly about a few

58
00:01:57,429 --> 00:01:55,360
items we got a very good status overall

59
00:01:59,830 --> 00:01:57,439
of how things are going i talked to you

60
00:02:01,429 --> 00:01:59,840
yesterday about the cryogenics and we're

61
00:02:03,030 --> 00:02:01,439
very interested in that as we always are

62
00:02:05,590 --> 00:02:03,040
but in this case we

63
00:02:06,789 --> 00:02:05,600

we would like as soon as possible to

64
00:02:08,469 --> 00:02:06,799
understand whether or not we might not

65
00:02:10,710 --> 00:02:08,479
have enough margin to

66
00:02:12,150 --> 00:02:10,720
to extend by one day

67
00:02:13,990 --> 00:02:12,160
our friends in the space station program

68
00:02:14,790 --> 00:02:14,000
are very interested in that so

69
00:02:18,390 --> 00:02:14,800
as

70
00:02:20,150 --> 00:02:18,400
day and four hours of margin

71
00:02:23,190 --> 00:02:20,160
approximately

72
00:02:25,830 --> 00:02:23,200
and so tomorrow i believe the uh

73
00:02:27,750 --> 00:02:25,840
and the space station program in the uh

74
00:02:29,430 --> 00:02:27,760
in the space station international space

75
00:02:30,550 --> 00:02:29,440
station program mission management team

76
00:02:31,670 --> 00:02:30,560
in the morning they will begin

77
00:02:33,270 --> 00:02:31,680
discussing

78
00:02:35,910 --> 00:02:33,280
the plus one day and whether or not they

79
00:02:38,470 --> 00:02:35,920
want to officially request that from us

80
00:02:40,550 --> 00:02:38,480
and they'll work on the exact list of uh

81
00:02:42,710 --> 00:02:40,560
tasks and

82
00:02:43,990 --> 00:02:42,720
and job jar items that the crew would

83
00:02:46,150 --> 00:02:44,000
perform

84
00:02:47,430 --> 00:02:46,160
in the event that we were able to extend

85
00:02:49,270 --> 00:02:47,440
the day so they'll be working on that

86
00:02:51,830 --> 00:02:49,280
tomorrow and there's a chance we'll

87
00:02:53,270 --> 00:02:51,840
discuss that in the mmt tomorrow uh it's

88
00:02:54,869 --> 00:02:53,280

a little early for me to know whether or

89
00:02:56,470 --> 00:02:54,879
not it'll be ready

90
00:02:58,309 --> 00:02:56,480
for that discussion but in any case

91
00:03:01,509 --> 00:02:58,319
it'll be the next day or two and we'll

92
00:03:02,949 --> 00:03:01,519
be able to have that discussion

93
00:03:04,869 --> 00:03:02,959
the

94
00:03:07,509 --> 00:03:04,879
it may have been reported to you we had

95
00:03:10,390 --> 00:03:07,519
where systems items are concerned

96
00:03:12,630 --> 00:03:10,400
the crew today when they were doing the

97
00:03:14,630 --> 00:03:12,640
configuration of all the all of the

98
00:03:16,470 --> 00:03:14,640
on-board systems for the rendezvous and

99
00:03:19,270 --> 00:03:16,480
proximity operations

100
00:03:20,790 --> 00:03:19,280
they had a a problem with gpc3 that's

101
00:03:23,030 --> 00:03:20,800
general purpose computer number three

102
00:03:24,790 --> 00:03:23,040
those are the onboard computers

103
00:03:26,470 --> 00:03:24,800
of which we have four for the primary

104
00:03:29,270 --> 00:03:26,480
software system

105
00:03:30,309 --> 00:03:29,280
and so on rendezvous prox ops

106
00:03:32,630 --> 00:03:30,319
day we

107
00:03:35,030 --> 00:03:32,640
we do what's called expand the set and

108
00:03:37,030 --> 00:03:35,040
we bring a third gpc into the set so we

109
00:03:39,750 --> 00:03:37,040
have some more redundancy

110
00:03:41,030 --> 00:03:39,760
for the proximity operations

111
00:03:43,670 --> 00:03:41,040
and

112
00:03:45,509 --> 00:03:43,680
when the crew did that operation today

113
00:03:48,550 --> 00:03:45,519

gpc3

114
00:03:50,229 --> 00:03:48,560
uh had a small hiccup and it decided

115
00:03:51,830 --> 00:03:50,239
that it should be

116
00:03:54,309 --> 00:03:51,840
turned itself off essentially and it

117
00:03:56,470 --> 00:03:54,319
went to what we call halt

118
00:03:57,910 --> 00:03:56,480
and the signature is one whereby we're

119
00:04:00,789 --> 00:03:57,920
pretty certain that this was what we

120
00:04:02,949 --> 00:04:00,799
call a switch tease condition that is to

121
00:04:03,910 --> 00:04:02,959
say that when the crewman moves the

122
00:04:05,670 --> 00:04:03,920
switch

123
00:04:08,149 --> 00:04:05,680
from one position to the next in this

124
00:04:10,149 --> 00:04:08,159
case the what we call the mode switch

125
00:04:11,670 --> 00:04:10,159
it doesn't get quite seated in the

126
00:04:14,070 --> 00:04:11,680
intended

127
00:04:16,390 --> 00:04:14,080
location that it's going to and so the

128
00:04:18,870 --> 00:04:16,400
gpc doesn't understand

129
00:04:21,430 --> 00:04:18,880
an intermittent position between the the

130
00:04:22,950 --> 00:04:21,440
two poles of the switch and so it

131
00:04:24,790 --> 00:04:22,960
it shuts down and

132
00:04:26,390 --> 00:04:24,800
looking at the signature as i said we're

133
00:04:29,110 --> 00:04:26,400
pretty confident that's probably what we

134
00:04:31,990 --> 00:04:29,120
have here we've seen this signature on

135
00:04:34,710 --> 00:04:32,000
this vehicle on this gpc before

136
00:04:36,469 --> 00:04:34,720
and so that's a another indicator that

137
00:04:37,749 --> 00:04:36,479
so we're not overly concerned with that

138
00:04:39,030 --> 00:04:37,759

we're not actually even calling it an

139
00:04:41,030 --> 00:04:39,040
anomaly yet

140
00:04:42,710 --> 00:04:41,040
the team has uh

141
00:04:45,670 --> 00:04:42,720
has scheduled uh

142
00:04:47,270 --> 00:04:45,680
a data dump from that computer tomorrow

143
00:04:48,870 --> 00:04:47,280
during the cruise day

144
00:04:50,629 --> 00:04:48,880
and that dump will give us some more

145
00:04:52,950 --> 00:04:50,639
indications of the internal workings of

146
00:04:54,550 --> 00:04:52,960
the gpc and what it has logged in terms

147
00:04:55,670 --> 00:04:54,560
of any kind of errors and things of that

148
00:04:59,110 --> 00:04:55,680
nature

149
00:05:01,909 --> 00:04:59,120
but overall not a not a concern for us

150
00:05:03,110 --> 00:05:01,919
additionally uh fuel cell three the flow

151
00:05:04,550 --> 00:05:03,120
meter

152
00:05:07,430 --> 00:05:04,560
is uh is

153
00:05:10,629 --> 00:05:07,440
has apparently has an erratic transducer

154
00:05:13,430 --> 00:05:10,639
this is a very minor thing because

155
00:05:16,310 --> 00:05:13,440
this transducer is a secondary cue

156
00:05:18,469 --> 00:05:16,320
to indicate the consumption of the

157
00:05:20,710 --> 00:05:18,479
the cryogenics and the performance

158
00:05:23,189 --> 00:05:20,720
overall of the fuel cell and we have

159
00:05:24,870 --> 00:05:23,199
many other ways of determining both the

160
00:05:26,469 --> 00:05:24,880
performance and the and the cryo

161
00:05:27,830 --> 00:05:26,479
consumption so it's not an issue it's a

162
00:05:30,070 --> 00:05:27,840
nuisance and we've

163
00:05:32,230 --> 00:05:30,080

and the team on the ground as uh

164
00:05:34,390 --> 00:05:32,240
has inhibited that so that we don't get

165
00:05:36,550 --> 00:05:34,400
any nuisance alarms from that

166
00:05:37,350 --> 00:05:36,560
so no issue with that item

167
00:05:39,430 --> 00:05:37,360
the

168
00:05:40,950 --> 00:05:39,440
team reported that we

169
00:05:43,029 --> 00:05:40,960
are following what might be a

170
00:05:45,510 --> 00:05:43,039
conjunction

171
00:05:47,830 --> 00:05:45,520
that is to say a piece of orbital debris

172
00:05:49,590 --> 00:05:47,840
an item that between us and the station

173
00:05:51,510 --> 00:05:49,600
as a docked unit we'll need to watch out

174
00:05:53,990 --> 00:05:51,520
for in the next couple days

175
00:05:56,310 --> 00:05:54,000
it looks right now like our point of

176
00:05:59,029 --> 00:05:56,320
closest approach would occur on the eva

177
00:06:00,870 --> 00:05:59,039
day flight day five

178
00:06:03,350 --> 00:06:00,880
during the eva

179
00:06:06,710 --> 00:06:03,360
however we don't really have a good pc

180
00:06:09,189 --> 00:06:06,720
on it yet and that's the probability of

181
00:06:11,029 --> 00:06:09,199
of collision and so that all needs to be

182
00:06:12,550 --> 00:06:11,039
computed we need to get some updated

183
00:06:15,270 --> 00:06:12,560
state vectors

184
00:06:17,189 --> 00:06:15,280
to give us the the best accurate

185
00:06:19,510 --> 00:06:17,199
information uh the navigation

186
00:06:21,350 --> 00:06:19,520
information about exactly where the

187
00:06:22,710 --> 00:06:21,360
shuttle station combined stack is in

188
00:06:24,950 --> 00:06:22,720

inertial space

189
00:06:25,830 --> 00:06:24,960
a lot of times on rendezvous day when we

190
00:06:27,270 --> 00:06:25,840
dock

191
00:06:29,510 --> 00:06:27,280
there are a number of perturbations in

192
00:06:31,749 --> 00:06:29,520
the trajectory of both vehicles

193
00:06:34,469 --> 00:06:31,759
and so we can't say with any certainty

194
00:06:36,150 --> 00:06:34,479
whether we really have a conjunction

195
00:06:38,070 --> 00:06:36,160
but it's a potential is what i would say

196
00:06:40,150 --> 00:06:38,080
right now that we have a conjunction and

197
00:06:41,670 --> 00:06:40,160
if we do then we'll do our normal we'll

198
00:06:43,830 --> 00:06:41,680
work through our normal

199
00:06:46,309 --> 00:06:43,840
procedures and and processes for dealing

200
00:06:47,590 --> 00:06:46,319
with that and we'll probably know excuse

201
00:06:48,870 --> 00:06:47,600
me quite a bit better by about this time

202
00:06:54,230 --> 00:06:48,880
tomorrow whether that's really going to

203
00:06:58,469 --> 00:06:56,230
the damage assessment team i'll just

204
00:07:00,629 --> 00:06:58,479
give you a brief status there as you

205
00:07:02,870 --> 00:07:00,639
know the flight day 2 inspections were

206
00:07:04,629 --> 00:07:02,880
all completed and preliminarily we

207
00:07:06,150 --> 00:07:04,639
didn't see anything all the data was

208
00:07:08,629 --> 00:07:06,160
downlinked and the team has had an

209
00:07:10,790 --> 00:07:08,639
opportunity to go through all that data

210
00:07:12,950 --> 00:07:10,800
there's uh

211
00:07:15,430 --> 00:07:12,960
perhaps some of the final peer review

212
00:07:17,430 --> 00:07:15,440
remaining on the on the wing leading

213
00:07:18,710 --> 00:07:17,440

edge in the nose cap systems but overall

214
00:07:19,830 --> 00:07:18,720
they look very good and we don't have

215
00:07:21,350 --> 00:07:19,840
any indications that we're going to have

216
00:07:23,749 --> 00:07:21,360
any problems there

217
00:07:25,990 --> 00:07:23,759
we did all but clear the uh the wing

218
00:07:28,309 --> 00:07:26,000
leading edge today in the mmt

219
00:07:30,390 --> 00:07:28,319
we'll do that when we do the

220
00:07:33,270 --> 00:07:30,400
the rest of the tps

221
00:07:35,749 --> 00:07:33,280
in in the next day or two but

222
00:07:37,749 --> 00:07:35,759
looks very good for the rcc

223
00:07:40,469 --> 00:07:37,759
on the rendezvous pitch maneuver the

224
00:07:43,270 --> 00:07:40,479
data from that is nearly all on the

225
00:07:45,749 --> 00:07:43,280
ground now the 400 millimeter data the

226
00:07:47,749 --> 00:07:45,759
800 millimeter data is on the ground and

227
00:07:49,110 --> 00:07:47,759
the team is is reviewing all that data

228
00:07:51,350 --> 00:07:49,120
we still have the thousand millimeter

229
00:07:53,189 --> 00:07:51,360
data that was in the process of being

230
00:07:55,909 --> 00:07:53,199
downlinked when i when i walked over

231
00:07:57,589 --> 00:07:55,919
here this afternoon so i expect that to

232
00:08:00,230 --> 00:07:57,599
to be on the ground here and be assessed

233
00:08:02,469 --> 00:08:00,240
and we may be able to even preliminarily

234
00:08:03,830 --> 00:08:02,479
give the crew some indication before

235
00:08:05,430 --> 00:08:03,840
they go to sleep tonight about six

236
00:08:06,550 --> 00:08:05,440
o'clock in the evening

237
00:08:08,309 --> 00:08:06,560
um

238
00:08:10,710 --> 00:08:08,319

it just depends on if if we get the rest

239
00:08:14,550 --> 00:08:10,720
of the data down and get for at least an

240
00:08:17,029 --> 00:08:15,749
the

241
00:08:18,710 --> 00:08:17,039
i think i may have mentioned yesterday

242
00:08:19,670 --> 00:08:18,720
the focus inspection meeting the meeting

243
00:08:21,990 --> 00:08:19,680
where we

244
00:08:25,430 --> 00:08:22,000
we talk about the the the dat team and

245
00:08:27,029 --> 00:08:25,440
the other engineering and safety experts

246
00:08:30,950 --> 00:08:27,039
around the program get together and talk

247
00:08:33,430 --> 00:08:30,960
about the likelihood or the need

248
00:08:35,909 --> 00:08:33,440
for a focused inspection and so the

249
00:08:38,149 --> 00:08:35,919
first of those is is tonight

250
00:08:40,070 --> 00:08:38,159
at 5 pm local time so

251
00:08:41,909 --> 00:08:40,080
look forward to to the results of that

252
00:08:43,350 --> 00:08:41,919
meeting i don't anticipate that there's

253
00:08:44,949 --> 00:08:43,360
anything we're going to need to look at

254
00:08:47,829 --> 00:08:44,959
based on all the preliminary data we

255
00:08:50,630 --> 00:08:47,839
have but we'll let everybody do our

256
00:08:52,870 --> 00:08:50,640
normal process here as we always do

257
00:08:55,110 --> 00:08:52,880
and then finally the

258
00:08:56,949 --> 00:08:55,120
the the ascent

259
00:08:58,710 --> 00:08:56,959
trajectory and and flight dynamics

260
00:09:01,590 --> 00:08:58,720
experts came in they gave us the ascent

261
00:09:03,430 --> 00:09:01,600
quick look to summary today

262
00:09:05,430 --> 00:09:03,440
and it was very very good the the

263
00:09:07,910 --> 00:09:05,440

vehicle flew um

264
00:09:10,710 --> 00:09:07,920
uh quite well and uh and there were no

265
00:09:13,190 --> 00:09:10,720
issues uh with the ascent

266
00:09:15,190 --> 00:09:13,200
flight dynamics data to include all of

267
00:09:16,710 --> 00:09:15,200
the propulsion elements

268
00:09:18,470 --> 00:09:16,720
and all of the normal things that we

269
00:09:20,310 --> 00:09:18,480
look at in the in the quick look data in

270
00:09:21,829 --> 00:09:20,320
terms of the trajectory parameters and

271
00:09:24,150 --> 00:09:21,839
the winds and all of the things that

272
00:09:25,110 --> 00:09:24,160
affect the vehicle flight path

273
00:09:28,470 --> 00:09:25,120
as we

274
00:09:29,829 --> 00:09:28,480
ascend to orbit and so

275
00:09:31,990 --> 00:09:29,839
all of that looked very good there were

276
00:09:34,150 --> 00:09:32,000
a number of

277
00:09:36,389 --> 00:09:34,160
problems with the

278
00:09:38,870 --> 00:09:36,399
what this with the balloon system

279
00:09:40,870 --> 00:09:38,880
that we use the gym spheres and the

280
00:09:42,230 --> 00:09:40,880
and the balloons that we use to uh to

281
00:09:43,590 --> 00:09:42,240
evaluate the wins in the weather on

282
00:09:47,670 --> 00:09:43,600
launch day

283
00:09:50,470 --> 00:09:47,680
and the team has such a robust set of

284
00:09:53,430 --> 00:09:50,480
backup procedures and down modes

285
00:09:55,509 --> 00:09:53,440
and off ramps for all of those

286
00:09:57,350 --> 00:09:55,519
scenarios that it

287
00:09:59,110 --> 00:09:57,360
barely made it to

288
00:10:00,470 --> 00:09:59,120

management's attention all the things

289
00:10:02,630 --> 00:10:00,480
that they were working on launch day and

290
00:10:03,829 --> 00:10:02,640
they did it quite seamlessly with with

291
00:10:05,670 --> 00:10:03,839
what turns out to be a pretty

292
00:10:07,350 --> 00:10:05,680
challenging day because the balloons

293
00:10:09,190 --> 00:10:07,360
were tending to ice up

294
00:10:10,230 --> 00:10:09,200
at uh at some of the higher altitudes

295
00:10:12,150 --> 00:10:10,240
and so

296
00:10:14,550 --> 00:10:12,160
they did an outstanding job working

297
00:10:16,389 --> 00:10:14,560
through all that and again just another

298
00:10:18,870 --> 00:10:16,399
example of things that were going on

299
00:10:20,310 --> 00:10:18,880
behind the scenes on launch day any one

300
00:10:22,790 --> 00:10:20,320
of which could have prevented us from

301
00:10:23,509 --> 00:10:22,800
being able to actually launch on friday

302
00:10:24,870 --> 00:10:23,519
and

303
00:10:26,949 --> 00:10:24,880
team just did a great job all the way

304
00:10:28,310 --> 00:10:26,959
around so that was a very good status

305
00:10:30,150 --> 00:10:28,320
that they gave us today obviously there

306
00:10:32,310 --> 00:10:30,160
will be more in-depth

307
00:10:34,310 --> 00:10:32,320
review of all of that data but as we

308
00:10:37,670 --> 00:10:34,320
call it it's a quick look and and as a

309
00:10:39,350 --> 00:10:37,680
quick look goes it looked very very good

310
00:10:41,750 --> 00:10:39,360
um

311
00:10:44,389 --> 00:10:41,760
and uh i think

312
00:10:46,949 --> 00:10:44,399
that's about all i have to report

313
00:10:48,150 --> 00:10:46,959

um i i should mention the booster ops we

314
00:10:51,750 --> 00:10:48,160
have the

315
00:10:53,430 --> 00:10:51,760
the port

316
00:10:55,030 --> 00:10:53,440
the left-hand booster will be in the

317
00:10:57,910 --> 00:10:55,040
port tonight

318
00:11:01,110 --> 00:10:57,920
and then slip-ops will occur tomorrow

319
00:11:03,110 --> 00:11:01,120
with open assessment to occur on tuesday

320
00:11:05,190 --> 00:11:03,120
i think i mistakenly mentioned yesterday

321
00:11:06,790 --> 00:11:05,200
i think i was off by a day i was getting

322
00:11:07,670 --> 00:11:06,800
my flight days and calendar days mixed

323
00:11:09,110 --> 00:11:07,680
up

324
00:11:11,269 --> 00:11:09,120
and so

325
00:11:12,150 --> 00:11:11,279
the boosters are again one is in the

326
00:11:13,509 --> 00:11:12,160
port

327
00:11:14,949 --> 00:11:13,519
the left booster will be in tonight

328
00:11:15,990 --> 00:11:14,959
around midnight i think is what they

329
00:11:17,990 --> 00:11:16,000
said

330
00:11:19,910 --> 00:11:18,000
and then we'll do slip ups tomorrow

331
00:11:21,829 --> 00:11:19,920
morning and during the day tomorrow with

332
00:11:22,630 --> 00:11:21,839
open assessment on tuesday

333
00:11:26,829 --> 00:11:22,640
so

334
00:11:28,630 --> 00:11:26,839
able to expect the video from the

335
00:11:30,230 --> 00:11:28,640
boosters

336
00:11:32,230 --> 00:11:30,240
sometime on monday and so we'll look

337
00:11:34,949 --> 00:11:32,240
forward to that as well

338
00:11:36,949 --> 00:11:34,959

so with that again in summary the the

339
00:11:39,509 --> 00:11:36,959
mission is going exceedingly well we're

340
00:11:42,150 --> 00:11:39,519
very much looking forward to our

341
00:11:44,550 --> 00:11:42,160
multi-purpose logistic module operations

342
00:11:46,069 --> 00:11:44,560
tomorrow where we would pull the mplm

343
00:11:47,030 --> 00:11:46,079
out of the payload bay and move it over

344
00:11:48,949 --> 00:11:47,040
on to

345
00:11:51,350 --> 00:11:48,959
on the space station and get on with the

346
00:11:52,470 --> 00:11:51,360
transfer of all this critical cargo in

347
00:11:54,710 --> 00:11:52,480
earnest

348
00:11:56,230 --> 00:11:54,720
and the crew is finishing up with a few

349
00:11:58,949 --> 00:11:56,240
items to prepare for that activity

350
00:12:00,870 --> 00:11:58,959
tomorrow to include handing off the obss

351
00:12:02,790 --> 00:12:00,880
the robotic boom that we use

352
00:12:04,069 --> 00:12:02,800
ultimately tomorrow to

353
00:12:06,870 --> 00:12:04,079
to help us

354
00:12:08,389 --> 00:12:06,880
move the mplm over to the station and so

355
00:12:10,230 --> 00:12:08,399
they're winding up their activities on

356
00:12:11,910 --> 00:12:10,240
board and they're finishing up what has

357
00:12:13,430 --> 00:12:11,920
been a very productive and successful

358
00:12:15,030 --> 00:12:13,440
day on orbit so

359
00:12:17,350 --> 00:12:15,040
with that i'd be happy to answer any

360
00:12:19,430 --> 00:12:17,360
questions you have okay great take them

361
00:12:20,550 --> 00:12:19,440
here and then out on the phone bridge

362
00:12:22,069 --> 00:12:20,560
and of course

363
00:12:24,069 --> 00:12:22,079

as before you have to walk up to the

364
00:12:26,069 --> 00:12:24,079
microphone or nobody on the net is going

365
00:12:28,069 --> 00:12:26,079
to be able to hear you so

366
00:12:30,389 --> 00:12:28,079
spelling bee contestant number one mark

367
00:12:32,710 --> 00:12:30,399
corral hey thanks uh mark crowe for

368
00:12:35,509 --> 00:12:32,720
aviation week uh do you have anything on

369
00:12:37,910 --> 00:12:35,519
the size or origin of the debris that

370
00:12:40,150 --> 00:12:37,920
you're tracking for a potential

371
00:12:42,230 --> 00:12:40,160
conjunction then i had a follow-up i

372
00:12:44,550 --> 00:12:42,240
don't mark what we were told today was

373
00:12:46,069 --> 00:12:44,560
very preliminary so i don't know what

374
00:12:48,310 --> 00:12:46,079
kind of object it is i don't even know

375
00:12:52,150 --> 00:12:48,320
what the object number is most of these

376
00:12:53,030 --> 00:12:52,160
objects are in our quote catalog

377
00:12:54,470 --> 00:12:53,040
and

378
00:12:56,150 --> 00:12:54,480
so no i don't have that information

379
00:12:57,829 --> 00:12:56,160
we'll probably have it later today or

380
00:12:59,190 --> 00:12:57,839
tomorrow

381
00:13:00,790 --> 00:12:59,200
thanks

382
00:13:02,150 --> 00:13:00,800
and i'll acknowledge this may not have

383
00:13:03,910 --> 00:13:02,160
an answer but

384
00:13:05,910 --> 00:13:03,920
it seems good to ask

385
00:13:07,910 --> 00:13:05,920
if you had to maneuver could you do it

386
00:13:10,069 --> 00:13:07,920
without interfering with the timing of

387
00:13:11,829 --> 00:13:10,079
the space walk or with the discussion

388
00:13:13,910 --> 00:13:11,839

about extending the mission if you had

389
00:13:16,389 --> 00:13:13,920
to maneuver include changing the space

390
00:13:17,829 --> 00:13:16,399
walk to accommodate that or am i way

391
00:13:18,550 --> 00:13:17,839
ahead

392
00:13:20,870 --> 00:13:18,560
well

393
00:13:23,350 --> 00:13:20,880
it's okay you're a little ahead and and

394
00:13:25,350 --> 00:13:23,360
that's okay um we um

395
00:13:27,350 --> 00:13:25,360
in all likelihood it would not interfere

396
00:13:29,670 --> 00:13:27,360
with what we're doing on the space walk

397
00:13:32,629 --> 00:13:29,680
if we do what a debris avoidance

398
00:13:35,110 --> 00:13:32,639
maneuver uh um to get away from an

399
00:13:37,829 --> 00:13:35,120
object in this case we would do it using

400
00:13:39,030 --> 00:13:37,839
the shuttle vrcs the small little

401
00:13:41,350 --> 00:13:39,040
thrusters

402
00:13:43,509 --> 00:13:41,360
and so in all likelihood we could do

403
00:13:45,430 --> 00:13:43,519
that in an operation where it's not

404
00:13:47,509 --> 00:13:45,440
going to impact what we're trying to do

405
00:13:49,269 --> 00:13:47,519
in the normally planned

406
00:13:51,509 --> 00:13:49,279
activities of the flight plan on that

407
00:13:53,430 --> 00:13:51,519
day so now having said that

408
00:13:54,870 --> 00:13:53,440
until i know what it is and and what

409
00:13:58,389 --> 00:13:54,880
kind of maneuver

410
00:13:59,430 --> 00:13:58,399
and and we have all of the details

411
00:14:01,350 --> 00:13:59,440
you know

412
00:14:03,189 --> 00:14:01,360
as you said to begin with it's it's a

413
00:14:04,470 --> 00:14:03,199

little ahead in that sense but generally

414
00:14:06,470 --> 00:14:04,480
speaking i don't anticipate that's going

415
00:14:08,629 --> 00:14:06,480
to be any issue at all

416
00:14:09,990 --> 00:14:08,639
bill bill hardwood cbs was just a it's a

417
00:14:11,910 --> 00:14:10,000
related question it's almost what he

418
00:14:13,990 --> 00:14:11,920
answered in a different form the flight

419
00:14:15,430 --> 00:14:14,000
rule with the box that you guys maintain

420
00:14:16,870 --> 00:14:15,440
around the station

421
00:14:18,550 --> 00:14:16,880
is it the same box when the shuttle is

422
00:14:21,350 --> 00:14:18,560
attached to the dimensions different and

423
00:14:22,629 --> 00:14:21,360
and i don't understand um

424
00:14:23,829 --> 00:14:22,639
does the rule change if there's a

425
00:14:25,990 --> 00:14:23,839
spacewalk involved i don't know if

426
00:14:28,310 --> 00:14:26,000
there's i don't know how evas play into

427
00:14:30,310 --> 00:14:28,320
the box and what your rules are about

428
00:14:32,150 --> 00:14:30,320
what you can and can't do it's it's a

429
00:14:34,150 --> 00:14:32,160
good question bill i

430
00:14:36,310 --> 00:14:34,160
if the rule is different

431
00:14:38,389 --> 00:14:36,320
to be specific for

432
00:14:40,310 --> 00:14:38,399
while we're doing a space walk

433
00:14:42,150 --> 00:14:40,320
i'm not aware of that and i'll have to

434
00:14:44,310 --> 00:14:42,160
refresh my memory on the details of it

435
00:14:47,189 --> 00:14:44,320
in that regard and the team will brief

436
00:14:48,629 --> 00:14:47,199
us on on all of those specifics

437
00:14:50,870 --> 00:14:48,639
what they told us today was very

438
00:14:52,150 --> 00:14:50,880

preliminary in terms of

439
00:14:53,829 --> 00:14:52,160
we just found out that we might have a

440
00:14:56,230 --> 00:14:53,839
conjunction so i didn't have a chance to

441
00:14:58,389 --> 00:14:56,240
go back and and review those specifics i

442
00:15:00,470 --> 00:14:58,399
don't think it's different if we've got

443
00:15:02,870 --> 00:15:00,480
folks outside versus not

444
00:15:04,389 --> 00:15:02,880
um but we'll we'll have those details

445
00:15:06,870 --> 00:15:04,399
tomorrow

446
00:15:08,470 --> 00:15:06,880
um genus and sarah abc news could be

447
00:15:10,550 --> 00:15:08,480
could you walk me through the process

448
00:15:12,710 --> 00:15:10,560
that you are going through now that you

449
00:15:14,629 --> 00:15:12,720
know about this conjunction what kind of

450
00:15:16,230 --> 00:15:14,639
teams are working on it what do they do

451
00:15:19,030 --> 00:15:16,240
who's involved i mean kind of would you

452
00:15:20,310 --> 00:15:19,040
paint that picture for me sure gina

453
00:15:25,590 --> 00:15:20,320
the

454
00:15:26,550 --> 00:15:25,600
objects

455
00:15:29,030 --> 00:15:26,560
is

456
00:15:30,069 --> 00:15:29,040
in the mountain the spacecom folks and

457
00:15:30,870 --> 00:15:30,079
and

458
00:15:33,590 --> 00:15:30,880
um

459
00:15:35,750 --> 00:15:33,600
or stratcom i i lose track of their name

460
00:15:37,269 --> 00:15:35,760
and it and it changes so often we can't

461
00:15:38,629 --> 00:15:37,279
even keep it correct in our flight rules

462
00:15:40,470 --> 00:15:38,639
but

463
00:15:42,949 --> 00:15:40,480

at any rate that organization is

464
00:15:44,389 --> 00:15:42,959
responsible for overall keeping track of

465
00:15:45,269 --> 00:15:44,399
all the objects that are that are in

466
00:15:47,350 --> 00:15:45,279
orbit

467
00:15:48,870 --> 00:15:47,360
and so we have a process where there's a

468
00:15:51,269 --> 00:15:48,880
notification

469
00:15:53,590 --> 00:15:51,279
that goes to our flight dynamics and

470
00:15:55,829 --> 00:15:53,600
trajectory experts here

471
00:15:58,310 --> 00:15:55,839
in mission control for space station

472
00:15:59,910 --> 00:15:58,320
operations and first shuttle operations

473
00:16:02,150 --> 00:15:59,920
in the shuttle room that's the flight

474
00:16:04,790 --> 00:16:02,160
dynamics officer or the fido

475
00:16:05,990 --> 00:16:04,800
in the station room that's the

476
00:16:08,230 --> 00:16:06,000
topo

477
00:16:10,710 --> 00:16:08,240
which is trajectory operations and

478
00:16:12,310 --> 00:16:10,720
planning officer i believe at any rate

479
00:16:14,310 --> 00:16:12,320
they perform roughly the same function

480
00:16:17,430 --> 00:16:14,320
for the two different vehicles with some

481
00:16:21,269 --> 00:16:17,440
differences as you can imagine

482
00:16:23,269 --> 00:16:21,279
those folks are notified and they then

483
00:16:24,310 --> 00:16:23,279
notify the next level of management in

484
00:16:25,430 --> 00:16:24,320
this case it would be the flight

485
00:16:28,389 --> 00:16:25,440
director

486
00:16:29,269 --> 00:16:28,399
and then depending on the timing

487
00:16:31,749 --> 00:16:29,279
and

488
00:16:34,150 --> 00:16:31,759

whether or not the event is going to

489
00:16:35,670 --> 00:16:34,160
occur in the next 24 hours or 48 hours

490
00:16:36,470 --> 00:16:35,680
or 72 hours

491
00:16:38,470 --> 00:16:36,480
then

492
00:16:41,030 --> 00:16:38,480
the urgency and the level of

493
00:16:44,230 --> 00:16:41,040
notification goes up

494
00:16:45,189 --> 00:16:44,240
as the reaction time goes down

495
00:16:48,310 --> 00:16:45,199
so

496
00:16:50,790 --> 00:16:48,320
in this case we've got a couple of days

497
00:16:53,189 --> 00:16:50,800
it's a it's a few days away if you will

498
00:16:55,110 --> 00:16:53,199
and so

499
00:16:57,110 --> 00:16:55,120
we just got the notification today in

500
00:16:59,189 --> 00:16:57,120
the mission management team i imagine

501
00:17:01,430 --> 00:16:59,199
the mission ops team found out about it

502
00:17:03,509 --> 00:17:01,440
sometime earlier this morning

503
00:17:05,429 --> 00:17:03,519
and so there's a process of checks and

504
00:17:07,829 --> 00:17:05,439
balances between the flight dynamics

505
00:17:08,949 --> 00:17:07,839
team and the folks in the mountain who

506
00:17:11,750 --> 00:17:08,959
have the

507
00:17:15,270 --> 00:17:13,750
state vector data if you will for all

508
00:17:18,390 --> 00:17:15,280
the objects

509
00:17:20,230 --> 00:17:18,400
and so then they compare their notes and

510
00:17:22,309 --> 00:17:20,240
it's an iterative process from there

511
00:17:24,549 --> 00:17:22,319
until the time of

512
00:17:28,230 --> 00:17:24,559
the day or the hour of the day of

513
00:17:30,630 --> 00:17:28,240

closest approach whereby we then assess

514
00:17:33,029 --> 00:17:30,640
what turns out to be the calculation for

515
00:17:35,590 --> 00:17:33,039
the probability of collision

516
00:17:37,590 --> 00:17:35,600
and then based on what the pc is

517
00:17:39,669 --> 00:17:37,600
and it changes with every new vector

518
00:17:41,350 --> 00:17:39,679
that we get

519
00:17:42,789 --> 00:17:41,360
we'll take action based on what's

520
00:17:44,870 --> 00:17:42,799
outlined in our flight rules and the

521
00:17:46,950 --> 00:17:44,880
guidance that's provided in those rules

522
00:17:49,590 --> 00:17:46,960
so there's a notification process from

523
00:17:51,510 --> 00:17:49,600
the mountain to us and from internal to

524
00:17:53,590 --> 00:17:51,520
the control center then it goes up the

525
00:17:55,590 --> 00:17:53,600
mission ops chain all the way up to

526
00:17:57,430 --> 00:17:55,600
higher management as may be necessary in

527
00:17:58,390 --> 00:17:57,440
the shuttle and or station program

528
00:18:00,390 --> 00:17:58,400
depending on whether or not there's

529
00:18:01,750 --> 00:18:00,400
going to be some action that's required

530
00:18:03,990 --> 00:18:01,760
and then in addition to that of course

531
00:18:04,710 --> 00:18:04,000
the station on their part they talk with

532
00:18:08,390 --> 00:18:04,720
the

533
00:18:10,549 --> 00:18:08,400
station

534
00:18:11,590 --> 00:18:10,559
and then so so the notification just

535
00:18:14,470 --> 00:18:11,600
goes on

536
00:18:16,390 --> 00:18:14,480
um and that's basically how it works for

537
00:18:17,430 --> 00:18:16,400
a given object

538
00:18:22,230 --> 00:18:17,440

robert

539
00:18:24,310 --> 00:18:22,240
um on the subject of uh adding an extra

540
00:18:26,870 --> 00:18:24,320
day to the mission uh given the the

541
00:18:28,470 --> 00:18:26,880
margins that you have now can you just

542
00:18:31,350 --> 00:18:28,480
maybe provide some examples of what

543
00:18:33,029 --> 00:18:31,360
would need to happen for you not to have

544
00:18:34,789 --> 00:18:33,039
that option any longer

545
00:18:37,110 --> 00:18:34,799
when you do consider it like what would

546
00:18:41,190 --> 00:18:37,120
prevent you at this point from

547
00:18:46,230 --> 00:18:43,750
well if we somehow came in and and said

548
00:18:47,909 --> 00:18:46,240
well our our cryo consumable

549
00:18:50,310 --> 00:18:47,919
calculations were wrong there was

550
00:18:52,390 --> 00:18:50,320
something we didn't take into account

551
00:18:54,630 --> 00:18:52,400
in other words we got that number wrong

552
00:18:57,110 --> 00:18:54,640
and we are suddenly something less than

553
00:19:00,549 --> 00:18:57,120
24 hours margin then it's not something

554
00:19:04,390 --> 00:19:01,830
barring that

555
00:19:06,950 --> 00:19:04,400
given that the station has a need

556
00:19:07,909 --> 00:19:06,960
and a very strong desire and a need for

557
00:19:10,230 --> 00:19:07,919
us to

558
00:19:11,990 --> 00:19:10,240
to add a day

559
00:19:15,190 --> 00:19:12,000
if we've got the margin then i'm

560
00:19:17,190 --> 00:19:15,200
probably willing to do it

561
00:19:19,110 --> 00:19:17,200
and there are other factors

562
00:19:22,470 --> 00:19:19,120
of extending the mission

563
00:19:24,070 --> 00:19:22,480

and assuming all things are are

564
00:19:26,150 --> 00:19:24,080
more or less equal with those other

565
00:19:27,430 --> 00:19:26,160
factors to include

566
00:19:28,310 --> 00:19:27,440
the crews

567
00:19:30,789 --> 00:19:28,320
um

568
00:19:32,310 --> 00:19:30,799
schedule the crew's health the the team

569
00:19:33,990 --> 00:19:32,320
on the ground and the activities that

570
00:19:35,909 --> 00:19:34,000
they would like to to complete all of

571
00:19:37,909 --> 00:19:35,919
those things that if they're otherwise

572
00:19:40,950 --> 00:19:37,919
pretty much equal then then that's about

573
00:19:42,230 --> 00:19:40,960
the only thing that would prevent it

574
00:19:44,470 --> 00:19:42,240
yeah

575
00:19:46,630 --> 00:19:44,480
dan vegano with usa today uh leaving

576
00:19:47,990 --> 00:19:46,640
aside the conjunction issue um i was

577
00:19:50,150 --> 00:19:48,000
wondering if you could characterize the

578
00:19:52,549 --> 00:19:50,160
crew's activities in the coming week um

579
00:19:53,909 --> 00:19:52,559
when we write to our readers that uh

580
00:19:55,270 --> 00:19:53,919
they're resupplying the station that

581
00:19:57,029 --> 00:19:55,280
doesn't sound like they're too busy i

582
00:19:58,230 --> 00:19:57,039
was wondering if maybe you would have a

583
00:20:00,310 --> 00:19:58,240
different perspective before you could

584
00:20:02,710 --> 00:20:00,320
share your perspective on that well i'll

585
00:20:05,190 --> 00:20:02,720
certainly try the

586
00:20:06,470 --> 00:20:05,200
they will be busy i promise you that

587
00:20:09,909 --> 00:20:06,480
and

588
00:20:12,710 --> 00:20:09,919

um so tomorrow we do the the actual move

589
00:20:14,950 --> 00:20:12,720
of the large mplm from the payload bay

590
00:20:17,510 --> 00:20:14,960
to the space station and birth it

591
00:20:19,350 --> 00:20:17,520
and then essentially open up the hatch

592
00:20:20,549 --> 00:20:19,360
at the end of at the end of that

593
00:20:22,070 --> 00:20:20,559
activity

594
00:20:24,630 --> 00:20:22,080
and then the crew can begin to get in

595
00:20:27,430 --> 00:20:24,640
there and start to to pull things out

596
00:20:28,870 --> 00:20:27,440
and uh and actually begin the transfer

597
00:20:30,470 --> 00:20:28,880
operations

598
00:20:32,070 --> 00:20:30,480
on flight day five we have our space

599
00:20:35,270 --> 00:20:32,080
walk

600
00:20:37,669 --> 00:20:35,280
and then pretty much subsequent to that

601
00:20:39,430 --> 00:20:37,679
we have a number of significant blocks

602
00:20:40,950 --> 00:20:39,440
of time where we're doing

603
00:20:41,750 --> 00:20:40,960
pretty much

604
00:20:44,950 --> 00:20:41,760
uh

605
00:20:47,830 --> 00:20:44,960
devoting most of our time to the the sto

606
00:20:50,310 --> 00:20:47,840
the transfer stowage on on stowing and

607
00:20:51,830 --> 00:20:50,320
repacking of the of the mplm

608
00:20:53,190 --> 00:20:51,840
for the things that are returning in the

609
00:20:55,909 --> 00:20:53,200
mplm

610
00:20:58,390 --> 00:20:55,919
so i believe it's um

611
00:20:59,750 --> 00:20:58,400
i'll give you the exact number of hours

612
00:21:01,510 --> 00:20:59,760
we've got

613
00:21:02,630 --> 00:21:01,520

about 30 hours

614
00:21:05,190 --> 00:21:02,640
of

615
00:21:06,230 --> 00:21:05,200
transfer for the mid deck

616
00:21:08,630 --> 00:21:06,240
so that's

617
00:21:10,549 --> 00:21:08,640
that's 30 man hours 30 person hours if

618
00:21:12,710 --> 00:21:10,559
you will of of work that has to be done

619
00:21:15,590 --> 00:21:12,720
to transfer items where the mid deck

620
00:21:18,149 --> 00:21:15,600
alone is concerned and we've got some

621
00:21:20,630 --> 00:21:18,159
nearly 130 hours of multi-purpose

622
00:21:21,669 --> 00:21:20,640
logistic module transfer

623
00:21:24,630 --> 00:21:21,679
so

624
00:21:28,710 --> 00:21:24,640
if you play all that out across

625
00:21:30,630 --> 00:21:28,720
an eight or so docked day mission

626
00:21:32,310 --> 00:21:30,640
plus a day or so

627
00:21:33,750 --> 00:21:32,320
and then you divide that up between the

628
00:21:36,230 --> 00:21:33,760
crew members that we have you can see

629
00:21:37,750 --> 00:21:36,240
that in addition to the other normally

630
00:21:39,750 --> 00:21:37,760
scheduled things that we do for any

631
00:21:41,270 --> 00:21:39,760
shuttle station dock mission

632
00:21:42,630 --> 00:21:41,280
we're going to be able to keep them

633
00:21:45,830 --> 00:21:42,640
pretty busy

634
00:21:47,510 --> 00:21:45,840
and so as is per normal

635
00:21:49,110 --> 00:21:47,520
the space station program and again i

636
00:21:50,230 --> 00:21:49,120
mentioned earlier

637
00:21:52,789 --> 00:21:50,240
they will

638
00:21:55,669 --> 00:21:52,799

talk about this a good deal in their

639
00:21:57,590 --> 00:21:55,679
station mmt tomorrow morning i believe

640
00:21:59,110 --> 00:21:57,600
they will as per normal they will have a

641
00:22:02,149 --> 00:21:59,120
couple of

642
00:22:03,750 --> 00:22:02,159
job jar items undoubtedly

643
00:22:06,230 --> 00:22:03,760
on the space station side that they

644
00:22:08,390 --> 00:22:06,240
would ask for our help with in the event

645
00:22:10,870 --> 00:22:08,400
that we're able to extend a day

646
00:22:12,870 --> 00:22:10,880
so it's kind of like your list that you

647
00:22:14,470 --> 00:22:12,880
have at home right there are always

648
00:22:15,669 --> 00:22:14,480
things there's always work to do on the

649
00:22:17,669 --> 00:22:15,679
house

650
00:22:19,270 --> 00:22:17,679
it doesn't matter how much you've done

651
00:22:21,990 --> 00:22:19,280
already or

652
00:22:24,549 --> 00:22:22,000
or how new or how old the house is

653
00:22:26,390 --> 00:22:24,559
there's always a list of things to do

654
00:22:27,990 --> 00:22:26,400
sometimes it

655
00:22:29,669 --> 00:22:28,000
they're wish list items that you may

656
00:22:31,110 --> 00:22:29,679
never do

657
00:22:32,789 --> 00:22:31,120
and other times they're obviously items

658
00:22:34,630 --> 00:22:32,799
that are maintenance items or otherwise

659
00:22:35,909 --> 00:22:34,640
that you're definitely going to do

660
00:22:37,270 --> 00:22:35,919
and they have the same kind of thing on

661
00:22:39,029 --> 00:22:37,280
the space station

662
00:22:40,870 --> 00:22:39,039
and so

663
00:22:42,149 --> 00:22:40,880

i mentioned that just to say that in

664
00:22:43,750 --> 00:22:42,159
addition to

665
00:22:45,350 --> 00:22:43,760
the additional work that we could do in

666
00:22:47,909 --> 00:22:45,360
terms of stowage and then setting up

667
00:22:49,350 --> 00:22:47,919
things on the station side of all of the

668
00:22:51,510 --> 00:22:49,360
of all of the uh

669
00:22:52,830 --> 00:22:51,520
the cargo that we're bringing up

670
00:22:55,029 --> 00:22:52,840
they will have

671
00:22:56,230 --> 00:22:55,039
unrelated job jar items that they will

672
00:22:59,270 --> 00:22:56,240
ask us to do and they will be

673
00:23:03,110 --> 00:22:59,280
prioritized and i'm

674
00:23:06,549 --> 00:23:04,310
to

675
00:23:08,470 --> 00:23:06,559
have very productive work for our

676
00:23:10,710 --> 00:23:08,480
four-person crew to do if we if we

677
00:23:12,149 --> 00:23:10,720
should extend a day

678
00:23:13,430 --> 00:23:12,159
if i could ask a second question i was

679
00:23:14,870 --> 00:23:13,440
wondering if could you put the

680
00:23:16,310 --> 00:23:14,880
conjunction a little bit of perspective

681
00:23:18,950 --> 00:23:16,320
you know there was the

682
00:23:20,789 --> 00:23:18,960
flyby a week or so ago

683
00:23:22,230 --> 00:23:20,799
you know our readers might suddenly

684
00:23:24,070 --> 00:23:22,240
think the thing is being bombarded could

685
00:23:26,310 --> 00:23:24,080
you sort of you know

686
00:23:27,590 --> 00:23:26,320
how often does this come up

687
00:23:29,110 --> 00:23:27,600
well i don't have a number for you in

688
00:23:30,470 --> 00:23:29,120

terms of how often

689
00:23:32,950 --> 00:23:30,480
it's um

690
00:23:36,630 --> 00:23:32,960
it's not uncommon

691
00:23:38,230 --> 00:23:36,640
there's a lot of junk in in orbit and

692
00:23:39,909 --> 00:23:38,240
there are a lot of objects that are

693
00:23:41,590 --> 00:23:39,919
being tracked and we have a very good

694
00:23:42,710 --> 00:23:41,600
process for

695
00:23:47,590 --> 00:23:42,720
for

696
00:23:49,029 --> 00:23:47,600
to avoid them in the in the cases where

697
00:23:51,590 --> 00:23:49,039
we need to avoid them

698
00:23:54,470 --> 00:23:51,600
so it's not uncommon

699
00:23:55,830 --> 00:23:54,480
and and what you see happening is in

700
00:23:58,149 --> 00:23:55,840
part anyway

701
00:24:02,390 --> 00:23:58,159
we have a number of objects that are

702
00:24:05,190 --> 00:24:02,400
essentially spent rocket bodies or other

703
00:24:06,950 --> 00:24:05,200
ranging in size of space debris

704
00:24:08,870 --> 00:24:06,960
and over time these things will drag

705
00:24:10,070 --> 00:24:08,880
down from their from their original

706
00:24:11,669 --> 00:24:10,080
orbits

707
00:24:14,310 --> 00:24:11,679
and so

708
00:24:15,830 --> 00:24:14,320
in some cases um

709
00:24:20,230 --> 00:24:15,840
there's a

710
00:24:22,310 --> 00:24:20,240
debris we see in the orbits that we

711
00:24:24,230 --> 00:24:22,320
worry about over time

712
00:24:26,230 --> 00:24:24,240
and that'll change it's not a constant

713
00:24:27,510 --> 00:24:26,240

it changes because things drag down and

714
00:24:30,630 --> 00:24:27,520
they go away

715
00:24:32,390 --> 00:24:30,640
it changes because new things

716
00:24:33,510 --> 00:24:32,400
are in the orbit

717
00:24:34,310 --> 00:24:33,520
and

718
00:24:36,230 --> 00:24:34,320
so

719
00:24:37,990 --> 00:24:36,240
it's not a a constant that happens once

720
00:24:38,950 --> 00:24:38,000
a day or twice a week or a hundred times

721
00:24:41,269 --> 00:24:38,960
a year

722
00:24:43,110 --> 00:24:41,279
um it's not unusual for us to have to

723
00:24:44,950 --> 00:24:43,120
deal with it we're having to deal with

724
00:24:47,350 --> 00:24:44,960
it more than we did

725
00:24:49,510 --> 00:24:47,360
10 years ago i don't know what it'll be

726
00:24:52,310 --> 00:24:49,520
like 10 years from now but there are a

727
00:24:54,630 --> 00:24:52,320
lot of experts that that could uh

728
00:24:57,430 --> 00:24:54,640
um could give us those prediction and

729
00:24:59,750 --> 00:24:57,440
have given us those us in the larger

730
00:25:01,190 --> 00:24:59,760
sense of a space community given those

731
00:25:03,029 --> 00:25:01,200
predictions to us

732
00:25:06,310 --> 00:25:03,039
and will continue to do so as we go

733
00:25:08,549 --> 00:25:06,320
forward so space debris is an issue and

734
00:25:10,789 --> 00:25:08,559
it's one of the things that as an agency

735
00:25:12,470 --> 00:25:10,799
we have some ideas about

736
00:25:13,830 --> 00:25:12,480
about how we might approach this for

737
00:25:16,149 --> 00:25:13,840
future vehicles

738
00:25:18,310 --> 00:25:16,159

and some ways to to manage things and

739
00:25:22,070 --> 00:25:18,320
it's something that's constantly uh it's

740
00:25:22,080 --> 00:25:25,029
denise

741
00:25:28,549 --> 00:25:27,110
um just a quick clarification and then a

742
00:25:30,710 --> 00:25:28,559
follow-up um

743
00:25:33,190 --> 00:25:30,720
did your team first receive notification

744
00:25:35,669 --> 00:25:33,200
of this potential conjunction this

745
00:25:37,029 --> 00:25:35,679
afternoon or this morning

746
00:25:38,470 --> 00:25:37,039
i believe it was this morning i have to

747
00:25:39,990 --> 00:25:38,480
assume it was this morning i have an

748
00:25:41,350 --> 00:25:40,000
exact time for you because i didn't ask

749
00:25:42,789 --> 00:25:41,360
for the exact time

750
00:25:45,269 --> 00:25:42,799
but i have to assume it was this morning

751
00:25:47,029 --> 00:25:45,279
because i just found out at the mmt and

752
00:25:49,830 --> 00:25:47,039
right after lunchtime

753
00:25:51,029 --> 00:25:49,840
um and then what's the latest time that

754
00:25:52,870 --> 00:25:51,039
you would

755
00:25:55,830 --> 00:25:52,880
want to have a definitive decision about

756
00:25:59,190 --> 00:25:55,840
the adding an extra day

757
00:26:01,909 --> 00:25:59,200
we have a little bit of time to talk the

758
00:26:03,990 --> 00:26:01,919
the team has indicated that if we should

759
00:26:06,070 --> 00:26:04,000
add the plus one day for the doctor

760
00:26:06,870 --> 00:26:06,080
mission they would like to insert it

761
00:26:08,950 --> 00:26:06,880
after

762
00:26:10,870 --> 00:26:08,960
what is today flight day eight in the

763
00:26:13,350 --> 00:26:10,880

nominal timeline

764
00:26:15,190 --> 00:26:13,360
so in order to do that and to do it

765
00:26:16,950 --> 00:26:15,200
efficiently and effectively

766
00:26:19,430 --> 00:26:16,960
you'd really like to start having that

767
00:26:21,669 --> 00:26:19,440
in the new timeline that you published

768
00:26:23,269 --> 00:26:21,679
to the crew on board around about flight

769
00:26:25,029 --> 00:26:23,279
day six

770
00:26:28,630 --> 00:26:25,039
and so if i back up from that it'd be

771
00:26:30,470 --> 00:26:28,640
nice to make a decision by fly day five

772
00:26:32,310 --> 00:26:30,480
it's probably not necessarily required

773
00:26:34,230 --> 00:26:32,320
before flight day six

774
00:26:35,350 --> 00:26:34,240
but i don't see any reason we're not

775
00:26:36,789 --> 00:26:35,360
going to be able to make that decision

776
00:26:39,909 --> 00:26:36,799
in the next day or two so it kind of

777
00:26:45,750 --> 00:26:42,230
okay let's go take a couple of uh phone

778
00:26:51,269 --> 00:26:45,760
bridge call in uh questions marcia dunn

779
00:26:55,430 --> 00:26:53,830
can you hear me there yeah go ahead

780
00:26:58,230 --> 00:26:55,440
yes i'm wondering is there any kind of

781
00:27:00,390 --> 00:26:58,240
early word on just how close that piece

782
00:27:04,549 --> 00:27:00,400
of debris might come to the shuttle

783
00:27:08,470 --> 00:27:06,470
i don't have any information beyond what

784
00:27:10,230 --> 00:27:08,480
i've already told you marcia it was a

785
00:27:12,310 --> 00:27:10,240
preliminary indication that we may have

786
00:27:13,510 --> 00:27:12,320
a conjunction we didn't have an initial

787
00:27:15,029 --> 00:27:13,520
pc

788
00:27:16,390 --> 00:27:15,039

a probability of collision because we

789
00:27:18,470 --> 00:27:16,400
didn't have good enough state vector

790
00:27:21,830 --> 00:27:18,480
information to compute that yet

791
00:27:23,510 --> 00:27:21,840
and so um next time i talk to you we'll

792
00:27:24,549 --> 00:27:23,520
have quite a bit more data on that and

793
00:27:26,630 --> 00:27:24,559
probably

794
00:27:30,470 --> 00:27:26,640
in the interim as well i just don't have

795
00:27:32,310 --> 00:27:30,480
anything uh today in terms of pc

796
00:27:34,070 --> 00:27:32,320
what is the earliest

797
00:27:35,029 --> 00:27:34,080
that the

798
00:27:37,350 --> 00:27:35,039
shuttle

799
00:27:38,950 --> 00:27:37,360
station might perform the avoidance

800
00:27:40,870 --> 00:27:38,960
maneuver might it happen tomorrow would

801
00:27:42,630 --> 00:27:40,880
you tend to wait until uh tuesday

802
00:27:45,990 --> 00:27:42,640
morning

803
00:27:48,710 --> 00:27:46,000
it it it all depends on what the actual

804
00:27:49,909 --> 00:27:48,720
timing of the event is marcia there's a

805
00:27:51,590 --> 00:27:49,919
good chance that

806
00:27:52,950 --> 00:27:51,600
we might do something very late in the

807
00:27:55,430 --> 00:27:52,960
day tomorrow

808
00:27:57,029 --> 00:27:55,440
but that means we'd have to have

809
00:27:58,470 --> 00:27:57,039
a lot of data pretty quickly that we

810
00:27:59,909 --> 00:27:58,480
could iterate on

811
00:28:01,269 --> 00:27:59,919
and i don't know what kind of object it

812
00:28:03,669 --> 00:28:01,279
is i don't know what kind of orbit it's

813
00:28:05,590 --> 00:28:03,679

in whether it's in a circular orbit or

814
00:28:07,590 --> 00:28:05,600
in all likelihood it's it's not circular

815
00:28:10,149 --> 00:28:07,600
it's somewhat elliptical

816
00:28:11,750 --> 00:28:10,159
it depends on the orbit it depends on

817
00:28:15,350 --> 00:28:11,760
which direction it's coming from there

818
00:28:19,430 --> 00:28:17,830
when we would want to do a maneuver

819
00:28:20,710 --> 00:28:19,440
but i would tell you it's possible we

820
00:28:22,630 --> 00:28:20,720
could do something as

821
00:28:25,590 --> 00:28:22,640
as early as late tomorrow

822
00:28:27,430 --> 00:28:25,600
um i just don't have enough data to tell

823
00:28:28,830 --> 00:28:27,440
you any more than that because i i don't

824
00:28:31,830 --> 00:28:28,840
know enough about the object in the

825
00:28:33,750 --> 00:28:31,840
orbit thank you

826
00:28:36,470 --> 00:28:33,760
see todd halverson florida today todd

827
00:28:41,830 --> 00:28:39,190
uh yes i am kyle thanks um

828
00:28:44,630 --> 00:28:41,840
uh leroy i was wondering if you could

829
00:28:46,470 --> 00:28:44,640
elaborate a little bit about the process

830
00:28:48,310 --> 00:28:46,480
you'll go through with the solid rocket

831
00:28:52,789 --> 00:28:48,320
boosters once they

832
00:28:55,830 --> 00:28:52,799
are back in port and over at hanger af

833
00:28:57,909 --> 00:28:55,840
and what ultimately is going to happen

834
00:29:00,789 --> 00:28:57,919
with these two

835
00:29:03,110 --> 00:29:00,799
solid rocket boosters are they going to

836
00:29:06,950 --> 00:29:03,120
stay at ksc are they going to utah could

837
00:29:12,310 --> 00:29:09,909
well the normal process in the slip

838
00:29:14,630 --> 00:29:12,320

operations is to begin to prepare the

839
00:29:16,870 --> 00:29:14,640
boosters so that you can

840
00:29:19,430 --> 00:29:16,880
take them out of the water obviously and

841
00:29:22,149 --> 00:29:19,440
then disassemble them

842
00:29:23,350 --> 00:29:22,159
the what we refer to as the the the

843
00:29:25,350 --> 00:29:23,360
booster

844
00:29:27,430 --> 00:29:25,360
aspects of the overall solid rocket

845
00:29:30,230 --> 00:29:27,440
motor or you know the the

846
00:29:31,830 --> 00:29:30,240
the nose cone and the nozzle and and

847
00:29:33,990 --> 00:29:31,840
things that that you can actually

848
00:29:35,430 --> 00:29:34,000
physically take apart and take off of

849
00:29:36,470 --> 00:29:35,440
the top and the bottom of the rocket if

850
00:29:38,389 --> 00:29:36,480
you will

851
00:29:39,990 --> 00:29:38,399
um and then open assessment gets a

852
00:29:42,870 --> 00:29:40,000
little bit more involved in terms of

853
00:29:44,870 --> 00:29:42,880
actually looking inside the motor

854
00:29:46,389 --> 00:29:44,880
ultimately these motors will

855
00:29:48,870 --> 00:29:46,399
the current plan is that they will go

856
00:29:50,070 --> 00:29:48,880
back to atk

857
00:29:52,070 --> 00:29:50,080
in utah

858
00:29:55,909 --> 00:29:52,080
and i don't know the details of their

859
00:29:59,430 --> 00:29:57,190
okay i think that's awesome thanks

860
00:30:00,630 --> 00:29:59,440
that's all for me kyle okay uh we're

861
00:30:01,750 --> 00:30:00,640
back here and everybody have any

862
00:30:04,470 --> 00:30:01,760
follow-ups

863
00:30:06,310 --> 00:30:04,480

all right a couple of programming notes

864
00:30:08,149 --> 00:30:06,320
uh the crew heads to bed as leroy

865
00:30:09,590 --> 00:30:08,159
mentioned around six o'clock today

866
00:30:11,510 --> 00:30:09,600
central time

867
00:30:13,110 --> 00:30:11,520
flight day three highlights start at

868
00:30:14,950 --> 00:30:13,120
eight o'clock central

869
00:30:17,350 --> 00:30:14,960
and of course that'll be on the hour

870
00:30:19,830 --> 00:30:17,360
every hour except for one hour we'll

871
00:30:21,590 --> 00:30:19,840
play the launching our dream special

872
00:30:23,029 --> 00:30:21,600
space shuttle program video if you

873
00:30:25,990 --> 00:30:23,039
haven't seen that take a look at that

874
00:30:28,389 --> 00:30:26,000
that will be at 10 pm

875
00:30:30,789 --> 00:30:28,399
the next mission status briefing is at 8

876
00:30:32,950 --> 00:30:30,799
30 tomorrow morning so a little earlier

877
00:30:34,389 --> 00:30:32,960
than usual

878
00:30:36,389 --> 00:30:34,399
and

879
00:30:38,470 --> 00:30:36,399
the next mmt briefing we'll have is

880
00:30:39,909 --> 00:30:38,480
tomorrow afternoon at three same time

881
00:30:42,549 --> 00:30:39,919
after the meeting which is at one

882
00:30:44,310 --> 00:30:42,559
o'clock central um it's all out there on

883
00:30:45,830 --> 00:30:44,320
a nasa television schedule we're up to

884
00:30:48,389 --> 00:30:45,840
rev c

885
00:30:51,070 --> 00:30:48,399
right now so be sure to look for that

886
00:30:55,029 --> 00:30:51,080
out on the web at

887
00:30:56,149 --> 00:30:55,039
www.nasa.gov slash shuttle tv

888
00:30:57,990 --> 00:30:56,159

and

889
00:31:00,310 --> 00:30:58,000
we'll again we'll be back here tomorrow

890
00:31:01,750 --> 00:31:00,320
after the mmt so thanks a lot leroy and

891
00:31:10,870 --> 00:31:01,760
thanks everybody we'll head back to

892
00:31:16,230 --> 00:31:13,830
hi i'm michelle savoie lawrence baitland

893
00:31:18,630 --> 00:31:16,240
i'm faith knutson i'm taylor rasca i'm

894
00:31:20,230 --> 00:31:18,640
julie bryce field i'm erica halsey and

895
00:31:22,630 --> 00:31:20,240
we're the biomedical flight controllers