
Mission Control Center
NASA
JAXA
esa

1
00:00:04,470 --> 00:00:02,790
good afternoon from the internet excuse

2
00:00:06,230 --> 00:00:04,480
me good afternoon from the johnson space

3
00:00:08,549 --> 00:00:06,240
center in houston and welcome to our

4
00:00:10,310 --> 00:00:08,559
expedition 40 mission overview briefing

5
00:00:11,990 --> 00:00:10,320
i'm dan hewitt

6
00:00:13,190 --> 00:00:12,000
just one week from today three new crew

7
00:00:14,789 --> 00:00:13,200
members will be launching to the

8
00:00:17,349 --> 00:00:14,799
international space station to join

9
00:00:20,310 --> 00:00:17,359
expedition 40 already in progress here

10
00:00:22,150 --> 00:00:20,320
to give us a look at what's ahead for

11
00:00:24,310 --> 00:00:22,160
the crews over the next couple of months

12
00:00:25,670 --> 00:00:24,320
with dan hartman deputy program manager

13
00:00:27,509 --> 00:00:25,680

of the international space station

14
00:00:29,189 --> 00:00:27,519
program and also greg whitney who will

15
00:00:31,269 --> 00:00:29,199
be the lead flight director for

16
00:00:32,870 --> 00:00:31,279
expedition 40. we'll start off with

17
00:00:34,790 --> 00:00:32,880
opening remarks from them and then open

18
00:00:35,990 --> 00:00:34,800
it up for questions dan why don't you go

19
00:00:38,069 --> 00:00:36,000
ahead and start us off thank you very

20
00:00:40,310 --> 00:00:38,079
much dan and good afternoon everybody

21
00:00:42,790 --> 00:00:40,320
let's see we are in the midst of a

22
00:00:44,470 --> 00:00:42,800
of a pretty heavy flight schedule that

23
00:00:47,270 --> 00:00:44,480
we have underway

24
00:00:49,510 --> 00:00:47,280
as you know the 37s crew returned last

25
00:00:50,950 --> 00:00:49,520
week landing in kazakhstan everything

26
00:00:54,549 --> 00:00:50,960
went perfectly

27
00:00:56,630 --> 00:00:54,559
we got the crew back on on 992

28
00:00:58,790 --> 00:00:56,640
and got him safely back in houston rick

29
00:00:59,670 --> 00:00:58,800
koichi and misha are doing outstanding

30
00:01:03,270 --> 00:00:59,680
and

31
00:01:05,270 --> 00:01:03,280
to our russian colleagues for a very

32
00:01:06,310 --> 00:01:05,280
very successful

33
00:01:08,230 --> 00:01:06,320
mission

34
00:01:11,429 --> 00:01:08,240
as you also know spacex 3 landed on

35
00:01:13,109 --> 00:01:11,439
sunday in reachport yesterday

36
00:01:15,270 --> 00:01:13,119
they stayed on board iss for about a

37
00:01:16,230 --> 00:01:15,280
month period a very very successful

38
00:01:17,830 --> 00:01:16,240

mission

39
00:01:20,230 --> 00:01:17,840
we got two major payloads out of the

40
00:01:22,950 --> 00:01:20,240
trunk that we used robotically

41
00:01:25,429 --> 00:01:22,960
fram type devices opals and hdev that

42
00:01:27,190 --> 00:01:25,439
we've put out on the external surfaces

43
00:01:29,670 --> 00:01:27,200
of the of the space station those are

44
00:01:32,870 --> 00:01:29,680
both functioning perfectly uh and then

45
00:01:35,270 --> 00:01:32,880
uh spacex splashed down on sunday and uh

46
00:01:38,149 --> 00:01:35,280
we've been uh the the spacecraft has

47
00:01:39,990 --> 00:01:38,159
been towed back to port and uh yesterday

48
00:01:41,190 --> 00:01:40,000
afternoon we got all the the research

49
00:01:43,429 --> 00:01:41,200
samples off

50
00:01:45,670 --> 00:01:43,439
uh that were that were kind of our early

51
00:01:47,350 --> 00:01:45,680
dsto they were transferred

52
00:01:51,190 --> 00:01:47,360
back to houston last night and turned

53
00:01:55,109 --> 00:01:53,270
and the remaining cargo will be

54
00:01:57,350 --> 00:01:55,119
transferred

55
00:01:58,550 --> 00:01:57,360
to houston and we hope to get it on

56
00:01:59,990 --> 00:01:58,560
friday

57
00:02:02,709 --> 00:02:00,000
spacex did

58
00:02:04,469 --> 00:02:02,719
incur a minor water excursion

59
00:02:05,830 --> 00:02:04,479
that we said that they saw upon opening

60
00:02:08,150 --> 00:02:05,840
the hatch

61
00:02:10,869 --> 00:02:08,160
that has not caused us any impacts that

62
00:02:12,470 --> 00:02:10,879
we know of uh and so we'll obviously

63
00:02:15,910 --> 00:02:12,480

we'll be looking into that further but

64
00:02:17,270 --> 00:02:15,920
uh the dragon will be moving from uh

65
00:02:19,670 --> 00:02:17,280
from the hawthorne area from the long

66
00:02:21,190 --> 00:02:19,680
beach area over to mcgregor where

67
00:02:23,830 --> 00:02:21,200
they'll do some further inspections but

68
00:02:25,830 --> 00:02:23,840
again no impacts that that we're aware

69
00:02:28,390 --> 00:02:25,840
of right now

70
00:02:31,509 --> 00:02:28,400
also on that return we're new as we work

71
00:02:33,509 --> 00:02:31,519
through our eva issues numerous emu

72
00:02:36,470 --> 00:02:33,519
related items were returned

73
00:02:38,550 --> 00:02:36,480
a lot of water samples filters uh two of

74
00:02:40,070 --> 00:02:38,560
the fan pump separators which we believe

75
00:02:42,710 --> 00:02:40,080
is what clogged or we know that's what

76
00:02:44,390 --> 00:02:42,720
clogged uh for the e for the emu suit

77
00:02:45,670 --> 00:02:44,400
where we had water in the helmet so all

78
00:02:48,390 --> 00:02:45,680
that will be brought back home and we'll

79
00:02:51,030 --> 00:02:48,400
do some investigation work and try to to

80
00:02:53,750 --> 00:02:51,040
get to a root cause on that uh we also

81
00:02:55,509 --> 00:02:53,760
brought home the 3015 suit so that was a

82
00:02:57,589 --> 00:02:55,519
major thing for us as well

83
00:03:00,390 --> 00:02:57,599
in addition we brought back three of the

84
00:03:02,630 --> 00:03:00,400
cards that were in the failed external

85
00:03:03,509 --> 00:03:02,640
mdm that we experienced about a month

86
00:03:05,509 --> 00:03:03,519
ago

87
00:03:08,149 --> 00:03:05,519
so we'll bring those back we'll try to

88
00:03:10,470 --> 00:03:08,159

understand the failure mode uh and make

89
00:03:11,830 --> 00:03:10,480
some improvements on some on future cars

90
00:03:14,550 --> 00:03:11,840
if required

91
00:03:16,229 --> 00:03:14,560
the r r of that mdm uh did happen during

92
00:03:19,910 --> 00:03:16,239
the spacex 3 mission was completely

93
00:03:22,229 --> 00:03:19,920
successful successful we are full up on

94
00:03:24,390 --> 00:03:22,239
our redundant capability on the on the

95
00:03:26,710 --> 00:03:24,400
truss segment so that's great news

96
00:03:29,110 --> 00:03:26,720
a couple weeks ago we did experience an

97
00:03:30,949 --> 00:03:29,120
issue with our 3a power string that's a

98
00:03:33,190 --> 00:03:30,959
one of you know one of one of our eight

99
00:03:35,350 --> 00:03:33,200
power buses that we have

100
00:03:37,190 --> 00:03:35,360
you know a couple years ago we we had a

101
00:03:39,589 --> 00:03:37,200
similar failure in the box called a

102
00:03:41,670 --> 00:03:39,599
sequential shunt unit

103
00:03:43,270 --> 00:03:41,680
that we actually tried we reintegrated

104
00:03:44,630 --> 00:03:43,280
at that time a couple years ago although

105
00:03:47,030 --> 00:03:44,640
we knew we probably had caused some

106
00:03:48,309 --> 00:03:47,040
damage inside that box

107
00:03:51,110 --> 00:03:48,319
as we've

108
00:03:52,710 --> 00:03:51,120
suffered this failure a few weeks back

109
00:03:54,630 --> 00:03:52,720
and have done some

110
00:03:57,429 --> 00:03:54,640
investigative work it looks like the box

111
00:03:59,270 --> 00:03:57,439
has incurred additional

112
00:04:01,270 --> 00:03:59,280
power string failures i think each

113
00:04:02,470 --> 00:04:01,280

blanket that comes off one of the solar

114
00:04:04,710 --> 00:04:02,480
ray panels

115
00:04:06,630 --> 00:04:04,720
has 41 circuits that head toward the uh

116
00:04:08,229 --> 00:04:06,640
towards the ssu

117
00:04:09,509 --> 00:04:08,239
just based on some of the current that

118
00:04:12,710 --> 00:04:09,519
we're seeing we think we may have

119
00:04:15,110 --> 00:04:12,720
damaged five or six additional strings

120
00:04:16,789 --> 00:04:15,120
in that ssu

121
00:04:18,469 --> 00:04:16,799
and i'll say on the first failure we

122
00:04:19,990 --> 00:04:18,479
think we incurred maybe one or two so

123
00:04:21,189 --> 00:04:20,000
this was this is a little bit more

124
00:04:22,629 --> 00:04:21,199
damage

125
00:04:24,870 --> 00:04:22,639
right now we've elected not to

126
00:04:28,310 --> 00:04:24,880
reintegrate that the ssu back into the

127
00:04:29,990 --> 00:04:28,320
prime string our ops teams feel very

128
00:04:34,070 --> 00:04:30,000
comfortable with with the seven of eight

129
00:04:36,950 --> 00:04:35,830
and so we'll go look at potentially

130
00:04:38,790 --> 00:04:36,960
performing

131
00:04:40,390 --> 00:04:38,800
an eba

132
00:04:41,909 --> 00:04:40,400
and greg will talk a little bit about

133
00:04:44,790 --> 00:04:41,919
about them later we'll either integrate

134
00:04:47,430 --> 00:04:44,800
it into our august set of evas or if if

135
00:04:48,870 --> 00:04:47,440
we still have to if we have some some

136
00:04:50,550 --> 00:04:48,880
concern where we think we need to go out

137
00:04:53,110 --> 00:04:50,560
a little bit earlier uh we'll plan that

138
00:04:54,629 --> 00:04:53,120

for the for the july time period um but

139
00:04:56,710 --> 00:04:54,639
i don't see us going out the door any

140
00:04:59,350 --> 00:04:56,720
any time before that again it's a

141
00:05:00,950 --> 00:04:59,360
relatively simple eba as far as the box

142
00:05:02,070 --> 00:05:00,960
is concerned there's some choreography

143
00:05:03,990 --> 00:05:02,080
that we need to

144
00:05:05,590 --> 00:05:04,000
to make sure we understand it it is not

145
00:05:07,029 --> 00:05:05,600
one of the big 13s that we've always

146
00:05:09,430 --> 00:05:07,039
talked about so that's why you don't see

147
00:05:11,270 --> 00:05:09,440
us rushing out the door in an immediate

148
00:05:13,830 --> 00:05:11,280
manner but uh it is something that we

149
00:05:15,590 --> 00:05:13,840
have our eyes on and that will go um

150
00:05:16,950 --> 00:05:15,600
we'll take care of

151
00:05:19,749 --> 00:05:16,960
the reason why we want we don't want to

152
00:05:21,990 --> 00:05:19,759
reintegrate the box uh even with you

153
00:05:24,070 --> 00:05:22,000
know i'll say 80 85 of all the channels

154
00:05:25,990 --> 00:05:24,080
working is there is some risk of

155
00:05:28,150 --> 00:05:26,000
collateral damage uh when you try to

156
00:05:29,909 --> 00:05:28,160
power that box on that we could uh

157
00:05:31,430 --> 00:05:29,919
impact some upstream or downstream

158
00:05:33,430 --> 00:05:31,440
components and so we're just going to

159
00:05:36,950 --> 00:05:33,440
set tight and then when the time's right

160
00:05:41,110 --> 00:05:39,110
and as i mentioned uh greg will talk a

161
00:05:42,469 --> 00:05:41,120
little bit more detail about three evas

162
00:05:44,790 --> 00:05:42,479
that are planned in our august time

163
00:05:47,029 --> 00:05:44,800

period obviously we won't go eva until

164
00:05:48,870 --> 00:05:47,039
we fully understand uh the the risk

165
00:05:50,870 --> 00:05:48,880
associated that with that from the from

166
00:05:53,029 --> 00:05:50,880
the again with lucas and the water in

167
00:05:55,590 --> 00:05:53,039
the helmet we're making great strides in

168
00:05:57,510 --> 00:05:55,600
understanding all aspects of that and

169
00:05:59,189 --> 00:05:57,520
have a tremendous team in place that uh

170
00:06:00,150 --> 00:05:59,199
are tackling that problem on a daily

171
00:06:02,950 --> 00:06:00,160
basis

172
00:06:05,029 --> 00:06:02,960
again with the 37s return and the spacex

173
00:06:06,790 --> 00:06:05,039
three return we have a significant

174
00:06:08,629 --> 00:06:06,800
amount of evidence come back to help us

175
00:06:11,430 --> 00:06:08,639
solve that problem

176
00:06:13,029 --> 00:06:11,440
as far as upcoming flights next week 39

177
00:06:14,629 --> 00:06:13,039
essel launch so we're looking forward to

178
00:06:16,950 --> 00:06:14,639
having max

179
00:06:19,110 --> 00:06:16,960
reid and alexander on the station with

180
00:06:20,550 --> 00:06:19,120
us and get back up to a crew size of six

181
00:06:21,830 --> 00:06:20,560
some of our team members will be

182
00:06:23,830 --> 00:06:21,840
departing

183
00:06:25,909 --> 00:06:23,840
for the launch site tomorrow and and

184
00:06:28,870 --> 00:06:25,919
friday so we'll we're in full swing mode

185
00:06:30,790 --> 00:06:28,880
in supporting that 53p will undock on

186
00:06:33,189 --> 00:06:30,800
june 9th

187
00:06:34,870 --> 00:06:33,199
right now orbital orb 2 from orbital

188
00:06:36,550 --> 00:06:34,880

sciences scheduled for june 10th and so

189
00:06:38,790 --> 00:06:36,560
we're looking to looking forward to get

190
00:06:41,270 --> 00:06:38,800
that that set of cargo up to the station

191
00:06:44,230 --> 00:06:41,280
for us the last atv launch is still

192
00:06:46,710 --> 00:06:44,240
slated at the end of july uh and i think

193
00:06:47,430 --> 00:06:46,720
its actual docking date uh is going to

194
00:06:49,270 --> 00:06:47,440
be

195
00:06:50,710 --> 00:06:49,280
around the august 10th august 12th time

196
00:06:54,150 --> 00:06:50,720
period so a little bit of loiter time

197
00:06:55,510 --> 00:06:54,160
with the with the atv and then spacex 4

198
00:06:57,430 --> 00:06:55,520
will be

199
00:06:58,629 --> 00:06:57,440
late august uh the early september time

200
00:07:00,550 --> 00:06:58,639
period

201
00:07:03,189 --> 00:07:00,560
for all the research that are on those

202
00:07:04,550 --> 00:07:03,199
those flights and and it's uh there's a

203
00:07:05,909 --> 00:07:04,560
tremendous amount and it's going to be

204
00:07:07,189 --> 00:07:05,919
exciting uh

205
00:07:08,950 --> 00:07:07,199
though the

206
00:07:10,710 --> 00:07:08,960
there's a presentation or science out

207
00:07:12,870 --> 00:07:10,720
briefing at uh 2 30 that uh we'll

208
00:07:14,070 --> 00:07:12,880
discuss all that and so uh stay tuned

209
00:07:15,589 --> 00:07:14,080
for that

210
00:07:17,589 --> 00:07:15,599
and uh with that i'll turn it over to

211
00:07:19,350 --> 00:07:17,599
greg all right thanks dan

212
00:07:21,350 --> 00:07:19,360
hi i'm craig whitney the lead flight

213
00:07:23,990 --> 00:07:21,360

director for increment 40. uh which

214
00:07:26,150 --> 00:07:24,000
started about a week ago when the 37s

215
00:07:29,029 --> 00:07:26,160
crew undocked from the space station

216
00:07:31,909 --> 00:07:29,039
that was the crew of koichi wakata rick

217
00:07:33,589 --> 00:07:31,919
mastracchio and misha turin

218
00:07:35,350 --> 00:07:33,599
they're going to be uh

219
00:07:37,589 --> 00:07:35,360
let's see the the ignorant 40 crew

220
00:07:40,390 --> 00:07:37,599
that's up there right now steve swanson

221
00:07:44,390 --> 00:07:40,400
oligar timiev and alexander schwarzoff

222
00:07:45,189 --> 00:07:44,400
will be joined on may 28th by the 39s

223
00:07:47,350 --> 00:07:45,199
crew

224
00:07:51,110 --> 00:07:47,360
of reid weissman

225
00:07:52,790 --> 00:07:51,120
max sariev and alexander gerst

226
00:07:54,469 --> 00:07:52,800
reid weissman this is his first space

227
00:07:57,350 --> 00:07:54,479
flight he was selected as a nasa

228
00:07:59,670 --> 00:07:57,360
astronaut in 2009 and he completed

229
00:08:02,950 --> 00:07:59,680
training in 2011.

230
00:08:05,469 --> 00:08:02,960
max arrived who's the soyuz commander he

231
00:08:08,309 --> 00:08:05,479
is a veteran cosmonaut where he spent

232
00:08:11,510 --> 00:08:08,319
169 days in space

233
00:08:13,589 --> 00:08:11,520
as an expedition 2122 flight engineer

234
00:08:14,869 --> 00:08:13,599
and he was also the soyuz 20 commander

235
00:08:16,469 --> 00:08:14,879
at that time

236
00:08:19,510 --> 00:08:16,479
in addition to those

237
00:08:22,150 --> 00:08:19,520
tasks he performed a six hour eva to

238
00:08:23,270 --> 00:08:22,160

complete the integration of the mrm2

239
00:08:25,189 --> 00:08:23,280
module

240
00:08:27,430 --> 00:08:25,199
alexander gerst is also a first time

241
00:08:29,350 --> 00:08:27,440
flyer along with reed he's an issa

242
00:08:31,589 --> 00:08:29,360
astronaut from germany and he was

243
00:08:36,230 --> 00:08:31,599
selected in 2009 and he was assigned to

244
00:08:41,430 --> 00:08:38,949
the 39s crew departed from moscow you

245
00:08:42,469 --> 00:08:41,440
can see them here on the video

246
00:08:46,230 --> 00:08:42,479
for

247
00:08:47,590 --> 00:08:46,240
15th their first soyuz fit check which

248
00:08:49,430 --> 00:08:47,600
you can see there in the video is may

249
00:08:51,990 --> 00:08:49,440
16th and they're going to continue their

250
00:08:55,590 --> 00:08:52,000
preference preparations in kazakhstan

251
00:08:59,030 --> 00:08:55,600
for launch at 2 56 p.m central time on

252
00:09:01,590 --> 00:08:59,040
may 28th and they will be docking to the

253
00:09:03,910 --> 00:09:01,600
mrm1 module which is on the nadir

254
00:09:05,590 --> 00:09:03,920
underside of the iss about six hours

255
00:09:07,750 --> 00:09:05,600
later they'll be doing a four orbit

256
00:09:11,030 --> 00:09:07,760
rendezvous

257
00:09:12,310 --> 00:09:11,040
at the time of the 39 soyuz docking

258
00:09:14,230 --> 00:09:12,320
there's going to be three other vehicles

259
00:09:16,710 --> 00:09:14,240
attached to the iss

260
00:09:20,389 --> 00:09:16,720
39s will be at mrm1 like i said earlier

261
00:09:22,790 --> 00:09:20,399
38s which is the current cruise

262
00:09:27,190 --> 00:09:22,800
vehicle will be on mrm2

263
00:09:29,910 --> 00:09:27,200

progress 55 will be on dc1 and progress

264
00:09:31,190 --> 00:09:29,920
53 will be on the aft end of the service

265
00:09:33,509 --> 00:09:31,200
module

266
00:09:35,430 --> 00:09:33,519
spacex as dan was mentioning

267
00:09:37,829 --> 00:09:35,440
successfully completed their mission

268
00:09:39,110 --> 00:09:37,839
they were birthed to the underside of

269
00:09:41,750 --> 00:09:39,120
node 2

270
00:09:43,430 --> 00:09:41,760
or the harmony module and they did that

271
00:09:45,030 --> 00:09:43,440
on may 18th and successfully splashed

272
00:09:46,310 --> 00:09:45,040
down in the pacific

273
00:09:47,509 --> 00:09:46,320
i'll go over the dates of the other

274
00:09:48,790 --> 00:09:47,519
major

275
00:09:50,470 --> 00:09:48,800
increments

276
00:09:52,550 --> 00:09:50,480
activity and of course this is all

277
00:09:54,310 --> 00:09:52,560
subject to change as our increment

278
00:09:56,150 --> 00:09:54,320
planning progresses

279
00:09:58,870 --> 00:09:56,160
but the the first vehicle to depart

280
00:10:01,030 --> 00:09:58,880
following the arrival of 39s is going to

281
00:10:03,509 --> 00:10:01,040
be progress 53 and that will be

282
00:10:05,269 --> 00:10:03,519
departing on june 9th and then as dan

283
00:10:08,389 --> 00:10:05,279
mentioned june 10th we'll be launching

284
00:10:10,550 --> 00:10:08,399
the orbital 2 vehicle and that will be

285
00:10:12,389 --> 00:10:10,560
launched from wallops flight facility in

286
00:10:13,990 --> 00:10:12,399
virginia and birthing to the harmony

287
00:10:18,870 --> 00:10:14,000
module

288
00:10:21,509 --> 00:10:18,880

and that will be scheduled for june 13th

289
00:10:23,509 --> 00:10:21,519
our first eva of the increment will be

290
00:10:26,870 --> 00:10:23,519
june 19th and the spacewalkers will be

291
00:10:30,069 --> 00:10:26,880
alexander schwartzoff and oleg artemyev

292
00:10:32,470 --> 00:10:30,079
and in that eva they will be

293
00:10:34,630 --> 00:10:32,480
going ahead and putting a new com system

294
00:10:37,030 --> 00:10:34,640
antenna on the sm

295
00:10:39,990 --> 00:10:37,040
and they'll be also deploying a payload

296
00:10:45,350 --> 00:10:40,000
boom performing several experiments and

297
00:10:51,990 --> 00:10:48,949
so going into july on july 11th we are

298
00:10:54,470 --> 00:10:52,000
planning the unbirthing of orbital two

299
00:10:57,030 --> 00:10:54,480
and then on july 22nd we'll be undocking

300
00:11:00,630 --> 00:10:57,040
progress 55 from the piers docking

301
00:11:04,150 --> 00:11:00,640
compartment dc1 and then july 23rd we'll

302
00:11:05,829 --> 00:11:04,160
be launching the 56p or 56 progress from

303
00:11:10,150 --> 00:11:05,839
baikonur and that will be docking to the

304
00:11:12,630 --> 00:11:10,160
iss six hours later to the dc1 module

305
00:11:15,990 --> 00:11:12,640
and then to finish up july we'll be

306
00:11:17,110 --> 00:11:16,000
launching atv 5 which is the final atv

307
00:11:18,069 --> 00:11:17,120
scheduled

308
00:11:20,150 --> 00:11:18,079
and

309
00:11:22,069 --> 00:11:20,160
i would pronounce its name but i think i

310
00:11:24,790 --> 00:11:22,079
would only disappoint my french teacher

311
00:11:27,190 --> 00:11:24,800
and my canadian astronauts if i tried

312
00:11:28,630 --> 00:11:27,200
that so we'll just call it atv5 now but

313
00:11:31,509 --> 00:11:28,640

we'll be

314
00:11:33,509 --> 00:11:31,519
docking atv 5 in august august 12th

315
00:11:34,790 --> 00:11:33,519
right now

316
00:11:36,630 --> 00:11:34,800
august is going to be a really busy

317
00:11:39,030 --> 00:11:36,640
month for us

318
00:11:42,710 --> 00:11:39,040
in addition to atv5 we're also going to

319
00:11:45,110 --> 00:11:42,720
be launching spacex4 at this point we're

320
00:11:47,190 --> 00:11:45,120
we're targeting august 8 at this time

321
00:11:47,990 --> 00:11:47,200
but as we said those dates are scheduled

322
00:11:52,949 --> 00:11:48,000
to

323
00:11:55,670 --> 00:11:52,959
the iss two days later and then on

324
00:11:59,190 --> 00:11:55,680
august 20th we have the second russian

325
00:12:01,269 --> 00:11:59,200
evas russian eva 39 again the

326
00:12:03,670 --> 00:12:01,279
spacewalkers will still be alexander

327
00:12:07,750 --> 00:12:03,680
schwarzoff and oligar timiev and on that

328
00:12:09,990 --> 00:12:07,760
eva we'll be deploying a nano satellite

329
00:12:12,310 --> 00:12:10,000
also an additional antenna a wall

330
00:12:14,069 --> 00:12:12,320
antenna and we'll be performing

331
00:12:17,750 --> 00:12:14,079
additional

332
00:12:19,829 --> 00:12:17,760
payload installations and and retrievals

333
00:12:22,069 --> 00:12:19,839
along with the two russian evas as dan

334
00:12:24,629 --> 00:12:22,079
mentioned we are tentatively planning

335
00:12:26,550 --> 00:12:24,639
three u.s evas to occur in the august

336
00:12:29,350 --> 00:12:26,560
time frame of course it's all dependent

337
00:12:32,069 --> 00:12:29,360
upon our ability to get eva capability

338
00:12:34,230 --> 00:12:32,079

back planned eva capability back and

339
00:12:37,590 --> 00:12:34,240
we're closely following those recovery

340
00:12:39,990 --> 00:12:37,600
efforts but i will go ahead and describe

341
00:12:41,590 --> 00:12:40,000
the content of those evas

342
00:12:44,150 --> 00:12:41,600
at this point

343
00:12:46,069 --> 00:12:44,160
so eva 27

344
00:12:48,710 --> 00:12:46,079
will be conducted by

345
00:12:50,550 --> 00:12:48,720
steve swanson and reid weissman and the

346
00:12:52,389 --> 00:12:50,560
main objective of that eva is to go

347
00:12:55,350 --> 00:12:52,399
ahead and restore the thermal control

348
00:12:58,069 --> 00:12:55,360
system on the port truss the p6 array

349
00:13:00,790 --> 00:12:58,079
back to its original configuration

350
00:13:02,870 --> 00:13:00,800
the second of the three evas will also

351
00:13:04,550 --> 00:13:02,880
be let's see we'll perform by reed

352
00:13:06,550 --> 00:13:04,560
weissman but he'll be joined by

353
00:13:09,190 --> 00:13:06,560
alexander gerst at this time

354
00:13:11,350 --> 00:13:09,200
and they will be stowing the failed pump

355
00:13:12,470 --> 00:13:11,360
module that failed back in december

356
00:13:13,670 --> 00:13:12,480
they're going to be putting that near

357
00:13:15,590 --> 00:13:13,680
the air lock

358
00:13:17,829 --> 00:13:15,600
and then we'll be installing a new set

359
00:13:19,269 --> 00:13:17,839
of power cables on the mobile

360
00:13:22,069 --> 00:13:19,279
transporter

361
00:13:24,870 --> 00:13:22,079
and also improving our lighting and

362
00:13:27,190 --> 00:13:24,880
camera capability outside with putting

363
00:13:29,269 --> 00:13:27,200

additional uh let's see an r of the

364
00:13:32,150 --> 00:13:29,279
light on the lab module and then we'll

365
00:13:34,790 --> 00:13:32,160
be trying to get a lens cover removed

366
00:13:37,190 --> 00:13:34,800
from a camera that's on the mt

367
00:13:38,949 --> 00:13:37,200
in order to improve its visibility

368
00:13:40,790 --> 00:13:38,959
and then the final eva that's planned

369
00:13:43,189 --> 00:13:40,800
will also be performed by reed weissman

370
00:13:46,310 --> 00:13:43,199
and alexander gerst and this is all in

371
00:13:48,069 --> 00:13:46,320
preparation for relocating the pmm and

372
00:13:50,550 --> 00:13:48,079
so we'll be going ahead and removing

373
00:13:53,829 --> 00:13:50,560
some cameras that are in the way of the

374
00:13:55,110 --> 00:13:53,839
pmm's new location and in addition to

375
00:13:59,269 --> 00:13:55,120
some other tools that are stowed

376
00:14:01,110 --> 00:13:59,279
exterior and then we'll be relocating

377
00:14:03,509 --> 00:14:01,120
which is a wireless

378
00:14:05,750 --> 00:14:03,519
camera capability allows us to get the

379
00:14:07,590 --> 00:14:05,760
video from the eva crew members

380
00:14:09,509 --> 00:14:07,600
helmets and

381
00:14:12,150 --> 00:14:09,519
we'll also continue to improve our

382
00:14:13,430 --> 00:14:12,160
camera capability outside as well

383
00:14:15,910 --> 00:14:13,440
so that we'll keep you updated on the

384
00:14:17,350 --> 00:14:15,920
eva statuses and planning throughout the

385
00:14:19,269 --> 00:14:17,360
increment

386
00:14:22,150 --> 00:14:19,279
and that basically conducts the eva part

387
00:14:24,230 --> 00:14:22,160
of the mission and then in september

388
00:14:25,750 --> 00:14:24,240

we'll be looking at the departure of

389
00:14:26,870 --> 00:14:25,760
spacex 4

390
00:14:29,030 --> 00:14:26,880
and that was

391
00:14:31,590 --> 00:14:29,040
will be on september 7th

392
00:14:34,470 --> 00:14:31,600
and then september 10th just a few days

393
00:14:37,509 --> 00:14:34,480
later increment 40 will end and that

394
00:14:40,069 --> 00:14:37,519
will be with the departure of the 38s

395
00:14:44,389 --> 00:14:40,079
crew which is steve swanson alexander

396
00:14:46,949 --> 00:14:44,399
schwarzoff and oleg or timiev reed max

397
00:14:48,550 --> 00:14:46,959
and alex will stay on board through

398
00:14:50,470 --> 00:14:48,560
november and then they'll see the

399
00:14:52,949 --> 00:14:50,480
arrival of their expedition 41 crewmates

400
00:14:55,269 --> 00:14:52,959
which you see on this photo and those

401
00:14:56,949 --> 00:14:55,279
crewmates are butch wilmore

402
00:14:58,949 --> 00:14:56,959
alexander

403
00:15:01,910 --> 00:14:58,959
and elena sorova and they'll be coming

404
00:15:03,829 --> 00:15:01,920
up in late september

405
00:15:05,990 --> 00:15:03,839
so as you can see our key challenges for

406
00:15:08,069 --> 00:15:06,000
this increment are managing

407
00:15:10,829 --> 00:15:08,079
the the slew of vehicle traffic that we

408
00:15:12,949 --> 00:15:10,839
have in addition to the evas that are

409
00:15:14,790 --> 00:15:12,959
planned and

410
00:15:17,590 --> 00:15:14,800
and of course we also have a very

411
00:15:19,590 --> 00:15:17,600
ambitious utilization schedule as well

412
00:15:21,189 --> 00:15:19,600
on top of that and so it's going to be a

413
00:15:23,670 --> 00:15:21,199

challenging time for both the ground and

414
00:15:26,389 --> 00:15:23,680
the onboard crew but we're looking for

415
00:15:28,710 --> 00:15:26,399
it uh forward to it and it'll be it'll

416
00:15:30,230 --> 00:15:28,720
be a great mission and of course

417
00:15:31,990 --> 00:15:30,240
we'll have some more information

418
00:15:35,509 --> 00:15:32,000
regarding the the science that we'll be

419
00:15:37,509 --> 00:15:35,519
conducting in that increment at 2 30. so

420
00:15:39,269 --> 00:15:37,519
uh thank you very much

421
00:15:41,030 --> 00:15:39,279
okay thanks greg i will go ahead and

422
00:15:42,150 --> 00:15:41,040
open it up for questions now we'll start

423
00:15:44,069 --> 00:15:42,160
here in the room and then we'll take

424
00:15:46,389 --> 00:15:44,079
questions via the phone

425
00:15:49,030 --> 00:15:46,399
when we go ahead and start uh mark

426
00:15:50,790 --> 00:15:49,040
uh thank you mark caro for aviation week

427
00:15:53,430 --> 00:15:50,800
i have a couple of questions and the

428
00:15:55,990 --> 00:15:53,440
first one has to do with the power

429
00:15:58,069 --> 00:15:56,000
channel loss i just wondered it has that

430
00:16:00,550 --> 00:15:58,079
impacted at this point

431
00:16:03,030 --> 00:16:00,560
anything uh you know especially looking

432
00:16:05,430 --> 00:16:03,040
at the at the science agenda but

433
00:16:07,509 --> 00:16:05,440
you know it could apply to different

434
00:16:09,350 --> 00:16:07,519
kinds of life support function

435
00:16:10,470 --> 00:16:09,360
or communication

436
00:16:12,710 --> 00:16:10,480
and

437
00:16:15,030 --> 00:16:12,720
i'm sort of wondering

438
00:16:16,710 --> 00:16:15,040

how much kind of margin or time do you

439
00:16:19,269 --> 00:16:16,720
have to address that is that something

440
00:16:20,870 --> 00:16:19,279
you can you can get to when you can or

441
00:16:22,550 --> 00:16:20,880
is it something you would like to do

442
00:16:24,790 --> 00:16:22,560
pretty soon when you can

443
00:16:26,470 --> 00:16:24,800
restore maintenance ebas

444
00:16:27,990 --> 00:16:26,480
sure

445
00:16:30,069 --> 00:16:28,000
so the loads that were on 3a we

446
00:16:32,310 --> 00:16:30,079
transferred over to 3b and so we've got

447
00:16:34,389 --> 00:16:32,320
complete capability of so we didn't lose

448
00:16:36,470 --> 00:16:34,399
any functionality so we all of our regen

449
00:16:38,710 --> 00:16:36,480
system everything in the note 3 lab is

450
00:16:40,150 --> 00:16:38,720
is fully operational

451
00:16:41,590 --> 00:16:40,160
and greg might be able to help me out

452
00:16:44,470 --> 00:16:41,600
but i i don't honestly i don't know of

453
00:16:46,150 --> 00:16:44,480
any restrictions as associated with

454
00:16:47,749 --> 00:16:46,160
the the science campaign that we're

455
00:16:50,310 --> 00:16:47,759
trying to run as well so

456
00:16:51,829 --> 00:16:50,320
of the power channels on station you

457
00:16:54,790 --> 00:16:51,839
know if you go through one a two one

458
00:16:56,310 --> 00:16:54,800
eight one a one b all you know 3a was i

459
00:16:59,430 --> 00:16:56,320
should say probably it was a good one to

460
00:17:00,470 --> 00:16:59,440
fail from an overall criticality aspect

461
00:17:02,069 --> 00:17:00,480
um

462
00:17:04,069 --> 00:17:02,079
the reason why we're kind of hedging our

463
00:17:05,590 --> 00:17:04,079

bets on on the eba is you can get into

464
00:17:07,189 --> 00:17:05,600
the discussion on the next worst failure

465
00:17:10,309 --> 00:17:07,199
and so we've we've done that work as

466
00:17:11,829 --> 00:17:10,319
well there are a couple scenarios where

467
00:17:13,590 --> 00:17:11,839
you certainly would want to go out there

468
00:17:14,630 --> 00:17:13,600
and fix the fix the box pretty quickly

469
00:17:16,069 --> 00:17:14,640
and so

470
00:17:17,510 --> 00:17:16,079
we're working on the procedures to get

471
00:17:20,789 --> 00:17:17,520
the the eva

472
00:17:22,630 --> 00:17:20,799
potted nbl runs procedure work that the

473
00:17:23,510 --> 00:17:22,640
eva teams do so we'll be ready to go

474
00:17:25,110 --> 00:17:23,520
just

475
00:17:26,390 --> 00:17:25,120
we basically asked mod to find a good

476
00:17:29,909 --> 00:17:26,400
home for

477
00:17:31,750 --> 00:17:29,919
fairly comfortable we can get it mix it

478
00:17:33,669 --> 00:17:31,760
in with the august if not we'll go

479
00:17:36,549 --> 00:17:33,679
conduct this and and probably that'll be

480
00:17:40,470 --> 00:17:36,559
uh the thing we go do if we do uh the

481
00:17:42,070 --> 00:17:40,480
the ssu swap on on an upcoming

482
00:17:44,070 --> 00:17:42,080
prior to the august dvas we'll probably

483
00:17:45,990 --> 00:17:44,080
just go do that sole function and take

484
00:17:48,789 --> 00:17:46,000
care of that box and come back in again

485
00:17:51,270 --> 00:17:48,799
we're want to make sure we preserve uh

486
00:17:53,350 --> 00:17:51,280
we want to fully understand before we go

487
00:17:54,630 --> 00:17:53,360
operational evas that we fully

488
00:17:56,310 --> 00:17:54,640

understand our root cause and we're

489
00:17:57,830 --> 00:17:56,320
comfortable in that and so that looks

490
00:18:00,150 --> 00:17:57,840
like that's going to take us

491
00:18:02,950 --> 00:18:00,160
you know into july to go perform to do

492
00:18:04,390 --> 00:18:02,960
that to do to keep on

493
00:18:06,150 --> 00:18:04,400
going through all the the samples that

494
00:18:08,630 --> 00:18:06,160
we got home and then coming up with root

495
00:18:12,870 --> 00:18:08,640
causing and getting uh getting our

496
00:18:19,029 --> 00:18:16,150
on the spacewalk plans and

497
00:18:20,630 --> 00:18:19,039
you mentioned doing some setup work for

498
00:18:23,750 --> 00:18:20,640
moving the

499
00:18:27,190 --> 00:18:23,760
pmm and i'm wondering if you can look

500
00:18:29,430 --> 00:18:27,200
out even on a rough scale

501
00:18:31,669 --> 00:18:29,440
can you sort of explain when that might

502
00:18:33,830 --> 00:18:31,679
happen and then i believe all this is

503
00:18:36,390 --> 00:18:33,840
sort of tied in uh

504
00:18:39,110 --> 00:18:36,400
to develo uh establishing a docking

505
00:18:40,630 --> 00:18:39,120
capability for the commercial crew

506
00:18:43,350 --> 00:18:40,640
and i'm just sort of trying to gather

507
00:18:46,789 --> 00:18:43,360
the the out context on

508
00:18:48,310 --> 00:18:46,799
on what that will be about

509
00:18:50,070 --> 00:18:48,320
i think i'd probably handle that so

510
00:18:51,669 --> 00:18:50,080
we're trying to free up and try to

511
00:18:53,350 --> 00:18:51,679
create two berthing ports and two

512
00:18:55,990 --> 00:18:53,360
docking ports so eventually our docking

513
00:18:58,789 --> 00:18:56,000

ports will be node two forward and node

514
00:19:01,590 --> 00:18:58,799
two zenith we'll maintain a berthing

515
00:19:03,669 --> 00:19:01,600
port on node two nader

516
00:19:05,430 --> 00:19:03,679
and we're we need to move some hardware

517
00:19:06,710 --> 00:19:05,440
around to make sure we have a berthing

518
00:19:09,270 --> 00:19:06,720
port

519
00:19:11,750 --> 00:19:09,280
for cargo vehicles on node three nader

520
00:19:13,190 --> 00:19:11,760
and so that's the that that's right node

521
00:19:14,789 --> 00:19:13,200
three native that's the game plan that

522
00:19:16,710 --> 00:19:14,799
works and that requires the shuffling

523
00:19:18,549 --> 00:19:16,720
that we have to do with the pmm and

524
00:19:21,190 --> 00:19:18,559
things like that so again we're trying

525
00:19:24,230 --> 00:19:21,200
to main a primary done and backup uh for

526
00:19:26,789 --> 00:19:24,240
each both uh our c commercial crew cargo

527
00:19:28,310 --> 00:19:26,799
vehicles as well as our

528
00:19:29,590 --> 00:19:28,320
crude vehicles and our cargo vehicles

529
00:19:31,750 --> 00:19:29,600
primary done at

530
00:19:34,150 --> 00:19:31,760
ports

531
00:19:36,549 --> 00:19:34,160
okay robert

532
00:19:37,750 --> 00:19:36,559
with regards to the upcoming soyuz

533
00:19:42,630 --> 00:19:37,760
launch

534
00:19:44,870 --> 00:19:42,640
resulted in a delayed rendezvous

535
00:19:46,150 --> 00:19:44,880
resulting back to the older two-day

536
00:19:48,230 --> 00:19:46,160
rendezvous

537
00:19:50,070 --> 00:19:48,240
can you just summarize

538
00:19:51,590 --> 00:19:50,080

the understanding of why that occurred

539
00:19:52,870 --> 00:19:51,600
and the confidence that it won't occur

540
00:19:54,710 --> 00:19:52,880
again sure

541
00:19:56,950 --> 00:19:54,720
and greg you'd probably help me out if i

542
00:19:58,549 --> 00:19:56,960
meet some but um there's a timing so

543
00:20:00,150 --> 00:19:58,559
where they're based on where they were

544
00:20:02,549 --> 00:20:00,160
on their trajectory and their attitude

545
00:20:05,590 --> 00:20:02,559
and their rates um they missed i think

546
00:20:07,510 --> 00:20:05,600
the db3 burn you know by about

547
00:20:10,230 --> 00:20:07,520
you know one degree one and a half

548
00:20:11,830 --> 00:20:10,240
degrees they were off in in attitude

549
00:20:13,830 --> 00:20:11,840
uh they've gone back and looked at that

550
00:20:15,830 --> 00:20:13,840
and and have acknowledged that that is

551
00:20:17,510 --> 00:20:15,840
way too tight of a tolerance

552
00:20:18,630 --> 00:20:17,520
for what really needs to be in play when

553
00:20:20,630 --> 00:20:18,640
i say i think they're surprised they

554
00:20:21,750 --> 00:20:20,640
hadn't seen it before

555
00:20:23,590 --> 00:20:21,760
and so they've

556
00:20:25,110 --> 00:20:23,600
you know they've widened that tolerance

557
00:20:28,470 --> 00:20:25,120
banned out a little bit and so don't

558
00:20:33,510 --> 00:20:30,870
and just to follow up on the previous

559
00:20:36,310 --> 00:20:33,520
set of questions about the ebas

560
00:20:38,870 --> 00:20:36,320
the move of the pmm isn't if correct is

561
00:20:40,710 --> 00:20:38,880
in support of adding the beam

562
00:20:43,510 --> 00:20:40,720
to the station

563
00:20:44,870 --> 00:20:43,520

has the delay in

564
00:20:46,710 --> 00:20:44,880
in being able to do maintenance

565
00:20:48,630 --> 00:20:46,720
spacewalks or prepare for that

566
00:20:51,750 --> 00:20:48,640
caused the delay to when you expect the

567
00:20:54,070 --> 00:20:51,760
beam to be launched and added no i think

568
00:20:56,230 --> 00:20:54,080
uh beam is still slated for spacex 10

569
00:20:59,350 --> 00:20:56,240
and we have we need to get all this

570
00:21:01,190 --> 00:20:59,360
commercial crew the c2v2 the docking you

571
00:21:04,789 --> 00:21:01,200
know the ida's in place that's well

572
00:21:06,390 --> 00:21:04,799
before when when beam will show up

573
00:21:07,990 --> 00:21:06,400
so he says it might be

574
00:21:10,070 --> 00:21:08,000
american i didn't go back and look at

575
00:21:12,630 --> 00:21:10,080
that might be spacex eight and so we

576
00:21:15,029 --> 00:21:12,640
just need i need to go follow up on that

577
00:21:16,630 --> 00:21:15,039
on when bean flies

578
00:21:18,789 --> 00:21:16,640
but it's it's not driving anything we're

579
00:21:21,510 --> 00:21:18,799
doing associated with the evas

580
00:21:22,950 --> 00:21:21,520
location of the beam

581
00:21:24,549 --> 00:21:22,960
okay we'll go ahead and go to our phone

582
00:21:26,230 --> 00:21:24,559
bridge now we'll start off with

583
00:21:34,950 --> 00:21:26,240
elizabeth howell with universe today

584
00:21:48,149 --> 00:21:37,270
okay moving on let's try james tutton

585
00:21:51,909 --> 00:21:49,669
okay looks like we might have lost our

586
00:21:53,350 --> 00:21:51,919
phone bridge uh any follow-ups then here

587
00:21:54,310 --> 00:21:53,360
in the room

588
00:21:56,950 --> 00:21:54,320

mark

589
00:22:01,669 --> 00:21:59,590
i'd like to kind of follow up on my own

590
00:22:03,190 --> 00:22:01,679
question about the uh

591
00:22:05,830 --> 00:22:03,200
the docking hardware that will

592
00:22:08,149 --> 00:22:05,840
eventually be placed on for commercial

593
00:22:09,270 --> 00:22:08,159
crew and i wonder if you can tie that a

594
00:22:11,750 --> 00:22:09,280
little bit

595
00:22:15,029 --> 00:22:11,760
more into moving the um

596
00:22:16,470 --> 00:22:15,039
moving the pmm and what happens after

597
00:22:20,230 --> 00:22:16,480
you move it

598
00:22:21,830 --> 00:22:20,240
in order to establish that capability

599
00:22:23,590 --> 00:22:21,840
and i may need to go back and get a get

600
00:22:24,789 --> 00:22:23,600
a refresher honor mark you know i think

601
00:22:26,950 --> 00:22:24,799
there's there's

602
00:22:29,110 --> 00:22:26,960
movement of modules deals with uh

603
00:22:31,270 --> 00:22:29,120
clearance envelopes on visiting vehicles

604
00:22:32,870 --> 00:22:31,280
that come and go certainly the front you

605
00:22:34,390 --> 00:22:32,880
know the node two is pretty clear but i

606
00:22:36,470 --> 00:22:34,400
think associated with where we put that

607
00:22:38,710 --> 00:22:36,480
second birthing part is what's really

608
00:22:41,830 --> 00:22:38,720
causing us to uh to get into the to the

609
00:22:42,950 --> 00:22:41,840
module uh swap around i don't really

610
00:22:44,070 --> 00:22:42,960
have anything else on that but i think

611
00:22:45,430 --> 00:22:44,080
that's

612
00:22:47,029 --> 00:22:45,440
the clearances for these visiting

613
00:22:48,870 --> 00:22:47,039

vehicles that come in i think that's the

614
00:22:50,310 --> 00:22:48,880
prime reason but we we certainly have

615
00:22:52,950 --> 00:22:50,320
that information it's just not top of my

616
00:22:56,630 --> 00:22:55,350
the space suit question

617
00:23:00,149 --> 00:22:56,640
when

618
00:23:03,669 --> 00:23:00,159
point where you're resuming the

619
00:23:06,470 --> 00:23:03,679
so-called maintenance kind of space walk

620
00:23:08,470 --> 00:23:06,480
how how will you be postured in terms of

621
00:23:11,029 --> 00:23:08,480
spacesuits and equipment

622
00:23:13,909 --> 00:23:11,039
on the station

623
00:23:15,990 --> 00:23:13,919
as opposed to sort of where you are

624
00:23:18,310 --> 00:23:16,000
now i guess what i'm looking at you know

625
00:23:20,549 --> 00:23:18,320
is what kind of robustness or redundancy

626
00:23:23,350 --> 00:23:20,559
you'll have and components are you

627
00:23:24,710 --> 00:23:23,360
following some new sort of strategy in

628
00:23:26,630 --> 00:23:24,720
terms of

629
00:23:28,390 --> 00:23:26,640
troubleshooting i know some of that's

630
00:23:31,029 --> 00:23:28,400
still being worked out but i'm just

631
00:23:33,029 --> 00:23:31,039
trying to get a sense of of how you'll

632
00:23:33,990 --> 00:23:33,039
go back into that again because it seems

633
00:23:35,909 --> 00:23:34,000
like there

634
00:23:38,390 --> 00:23:35,919
will be some stuff that's piled up and

635
00:23:40,230 --> 00:23:38,400
maybe somewhat more urgency than there

636
00:23:42,549 --> 00:23:40,240
would have been a year or so ago when

637
00:23:45,029 --> 00:23:42,559
you had to stop

638
00:23:47,110 --> 00:23:45,039

as far as protecting ourselves for the

639
00:23:49,190 --> 00:23:47,120
capability for eva we'll still maintain

640
00:23:50,630 --> 00:23:49,200
four suits on orbit so that that has

641
00:23:52,230 --> 00:23:50,640
that was our plan that will still be our

642
00:23:55,190 --> 00:23:52,240
plan i think we'll end up finding

643
00:23:57,269 --> 00:23:55,200
additional spares to support uh the the

644
00:23:59,590 --> 00:23:57,279
emu suit that might be some additional

645
00:24:02,149 --> 00:23:59,600
fan pump separators that we have

646
00:24:04,390 --> 00:24:02,159
certainly uh filters and stuff like that

647
00:24:06,149 --> 00:24:04,400
um so those are the main that you know

648
00:24:08,950 --> 00:24:06,159
and and i would also say we'll probably

649
00:24:11,669 --> 00:24:08,960
do uh a more aggressive water sampling

650
00:24:13,269 --> 00:24:11,679
and bringing water samples back home

651
00:24:15,430 --> 00:24:13,279
uh until we really can understand the

652
00:24:16,950 --> 00:24:15,440
water chemistry that makes up the

653
00:24:19,350 --> 00:24:16,960
you know the flows in and out of the

654
00:24:20,630 --> 00:24:19,360
suits so we're kind of always on the

655
00:24:21,990 --> 00:24:20,640
learning curve where we're seeing any

656
00:24:23,669 --> 00:24:22,000
kind of trends and so we can

657
00:24:25,430 --> 00:24:23,679
aggressively attack the problem at that

658
00:24:26,310 --> 00:24:25,440
time those are the main the main changes

659
00:24:27,510 --> 00:24:26,320
i think

660
00:24:30,149 --> 00:24:27,520
that we're that we are going to go

661
00:24:35,510 --> 00:24:33,350
okay any more all right short briefing

662
00:24:37,350 --> 00:24:35,520
today that'll wrap it up uh like they

663
00:24:39,830 --> 00:24:37,360

both alluded to we're gonna have a

664
00:24:41,990 --> 00:24:39,840
science forum coming up at 2 30 p.m

665
00:24:44,390 --> 00:24:42,000
central looking at uh science going

666
00:24:46,549 --> 00:24:44,400
going up soon and also all the signs

667
00:24:49,269 --> 00:24:46,559
happening over the next 10 years or so

668
00:24:51,430 --> 00:24:49,279
the international space station so to be

669
00:24:52,870 --> 00:24:51,440
sure to tune in for that and as always

670
00:24:54,070 --> 00:24:52,880
you can get all the latest on the

671
00:24:56,070 --> 00:24:54,080
international space station the

672
00:24:57,510 --> 00:24:56,080
expeditions and the science by going to