1
00:00:06,420 --> 00:00:21,349
[Music]

2
00:00:21,359 --> 00:00:25,850
you're watching nasa tv

3
00:00:25,860 --> 00:00:46,950
[Music]

4
00:00:50,470 --> 00:00:48,630
good afternoon i'm nasa's gary jordan

5
00:00:52,709 --> 00:00:50,480
thank you for joining us remotely to

6
00:00:55,110 --> 00:00:52,719
preview a set of upcoming spacewalks

7
00:00:56,790 --> 00:00:55,120
scheduled for sunday february 28th and

8
00:00:58,630 --> 00:00:56,800
friday march 5th aboard the

9
00:01:02,150 --> 00:00:58,640
international space station they will be

10
00:01:03,830 --> 00:01:02,160
the 235th and 236th spacewalks in

11
00:01:06,390 --> 00:01:03,840
support of international space station

12
00:01:08,550 --> 00:01:06,400
assembly maintenance and upgrades nasa

13
00:01:10,789 --> 00:01:08,560

astronauts kate rubins and victor glover

14
00:01:12,550 --> 00:01:10,799
are scheduled to conduct the first eva

15
00:01:14,870 --> 00:01:12,560
and rubens will conduct the second with

16
00:01:17,510 --> 00:01:14,880
japan aerospace exploration agency or

17
00:01:19,190 --> 00:01:17,520
jaxa astronaut suichi naguchi this

18
00:01:20,630 --> 00:01:19,200
briefing will address the programmatic

19
00:01:22,789 --> 00:01:20,640
and operational significance of the

20
00:01:25,590 --> 00:01:22,799
spacewalks as well as the detailed

21
00:01:27,350 --> 00:01:25,600
procedures our briefers today include

22
00:01:29,270 --> 00:01:27,360
kenny todd deputy manager of the

23
00:01:31,830 --> 00:01:29,280
international space station program

24
00:01:34,469 --> 00:01:31,840
marcos flores february 28th spacewalk

25
00:01:36,550 --> 00:01:34,479
flight director chris edelen march 5th

26
00:01:38,789 --> 00:01:36,560
spacewalk flight director and art

27
00:01:41,350 --> 00:01:38,799
thomason spacewalk offer for both of the

28
00:01:42,950 --> 00:01:41,360
upcoming evas we'll first start with

29
00:01:45,350 --> 00:01:42,960
some initial remarks from each of our

30
00:01:46,950 --> 00:01:45,360
briefers before for questions we'll be

31
00:01:49,270 --> 00:01:46,960
taking questions on our phone bridge as

32
00:01:50,870 --> 00:01:49,280
well as on our social media platforms

33
00:01:52,630 --> 00:01:50,880
if you're on the phone please press star

34
00:01:54,710 --> 00:01:52,640
one to add your name to our queue and to

35
00:01:57,590 --> 00:01:54,720
ask a question if you're on social media

36
00:02:02,149 --> 00:01:57,600
use the hashtag asknasa we'll now begin

37
00:02:06,830 --> 00:02:04,870
thank you gary um well first of all i

38
00:02:08,550 --> 00:02:06,840

hope everybody's doing well good

39
00:02:10,469 --> 00:02:08,560
afternoon

40
00:02:13,350 --> 00:02:10,479
and uh it seems like yesterday that i

41
00:02:16,070 --> 00:02:13,360
was in the same spot doing a briefing

42
00:02:17,990 --> 00:02:16,080
but since that time frame we've uh we've

43
00:02:19,270 --> 00:02:18,000
not only done the two spacewalks that we

44
00:02:22,710 --> 00:02:19,280
talked about

45
00:02:25,270 --> 00:02:22,720
a few weeks ago but we've also

46
00:02:27,030 --> 00:02:25,280
welcomed the new uh russian progress

47
00:02:28,550 --> 00:02:27,040
cargo vehicle that stationed in addition

48
00:02:30,470 --> 00:02:28,560
to a northwest grumman's thickness

49
00:02:32,229 --> 00:02:30,480
module bringing about 8 000 pounds of

50
00:02:35,750 --> 00:02:32,239
cargo to the international space station

51
00:02:37,190 --> 00:02:35,760
so it's been been a busy few weeks

52
00:02:39,190 --> 00:02:37,200
but now we turn the corner and we're

53
00:02:41,750 --> 00:02:39,200
back to talking a lot about evas again

54
00:02:43,509 --> 00:02:41,760
on board so anyway we've got a set of

55
00:02:45,030 --> 00:02:43,519
two evas that were that we're going to

56
00:02:47,030 --> 00:02:45,040
do here at the end of the month and

57
00:02:48,390 --> 00:02:47,040
early into next month

58
00:02:51,670 --> 00:02:48,400
we call them

59
00:02:52,869 --> 00:02:51,680
gairosa eva and the iss upgrades through

60
00:02:56,150 --> 00:02:52,879
eda

61
00:02:58,390 --> 00:02:56,160
the irosa eba and primarily focused on

62
00:03:00,470 --> 00:02:58,400
on getting ourselves in a position

63
00:03:02,550 --> 00:03:00,480

to be able to receive the new solar

64
00:03:05,030 --> 00:03:02,560
array that are coming to space stations

65
00:03:07,270 --> 00:03:05,040
later this year so we'll uh we'll we'll

66
00:03:09,270 --> 00:03:07,280
install some structure that will allow

67
00:03:10,390 --> 00:03:09,280
us to uh to put those solar arrays in

68
00:03:13,750 --> 00:03:10,400
place

69
00:03:16,869 --> 00:03:13,760
uh on the upgrade uh three um

70
00:03:18,550 --> 00:03:16,879
dba we'll be uh doing uh we have some

71
00:03:20,229 --> 00:03:18,560
ammonia servicing equipment that's been

72
00:03:22,070 --> 00:03:20,239
out for for quite a while now that we

73
00:03:23,910 --> 00:03:22,080
deployed a while back and we're gonna go

74
00:03:25,990 --> 00:03:23,920
try to get that cleaned up and get it

75
00:03:28,390 --> 00:03:26,000
get it into its home uh a better home

76
00:03:30,789 --> 00:03:28,400
for that equipment uh in addition to

77
00:03:32,710 --> 00:03:30,799
that um you know we'll clean up any any

78
00:03:33,670 --> 00:03:32,720
work that we need to do on the solar

79
00:03:35,830 --> 00:03:33,680
array

80
00:03:37,270 --> 00:03:35,840
mods that we need to do so any of the

81
00:03:39,990 --> 00:03:37,280
structures that we need to put in place

82
00:03:42,710 --> 00:03:40,000
we'll clean that up on that eva as well

83
00:03:45,589 --> 00:03:42,720
in addition uh one other objective that

84
00:03:47,270 --> 00:03:45,599
we just recently added to this eba is

85
00:03:50,229 --> 00:03:47,280
associated with our

86
00:03:51,990 --> 00:03:50,239
bartolomeo platform which is uh attached

87
00:03:54,550 --> 00:03:52,000
to the columbus module the european

88
00:03:55,910 --> 00:03:54,560

space agency columbus module as most of

89
00:03:58,070 --> 00:03:55,920
you might remember

90
00:04:00,710 --> 00:03:58,080
we were out at that work site on one of

91
00:04:03,670 --> 00:04:00,720
these past two evas where we're making

92
00:04:05,990 --> 00:04:03,680
connections um uh to the bartolovio

93
00:04:07,670 --> 00:04:06,000
platform unfortunately we we had some

94
00:04:08,550 --> 00:04:07,680
struggles with some of those connectors

95
00:04:10,630 --> 00:04:08,560
and so

96
00:04:12,949 --> 00:04:10,640
uh the team has put together uh what i

97
00:04:15,030 --> 00:04:12,959
think is a pretty good plan to go out uh

98
00:04:17,030 --> 00:04:15,040
to see if we can't learn some more about

99
00:04:19,110 --> 00:04:17,040
what's going on with those connector uh

100
00:04:20,949 --> 00:04:19,120
do a little troubleshooting and uh you

101
00:04:23,350 --> 00:04:20,959
know if we're able to get one or two of

102
00:04:25,189 --> 00:04:23,360
them connected uh then you know we'll

103
00:04:26,469 --> 00:04:25,199
we'll call that a huge success but at

104
00:04:28,070 --> 00:04:26,479
this point we really want to go back out

105
00:04:29,189 --> 00:04:28,080
to that one site see what we can learn

106
00:04:31,030 --> 00:04:29,199
about what's going on with those

107
00:04:32,710 --> 00:04:31,040
connectors and if we don't get them made

108
00:04:35,110 --> 00:04:32,720
at this time certainly we're gonna we're

109
00:04:37,270 --> 00:04:35,120
gonna be looking to

110
00:04:40,230 --> 00:04:37,280
get some data that allow us to put put

111
00:04:41,510 --> 00:04:40,240
that back on for a future idiot so uh

112
00:04:44,150 --> 00:04:41,520
specifically that's where we're going

113
00:04:46,790 --> 00:04:44,160

with those two evas uh once we get those

114
00:04:48,469 --> 00:04:46,800
in our rearview mirror um at that point

115
00:04:51,189 --> 00:04:48,479
we're looking towards the end of march

116
00:04:53,189 --> 00:04:51,199
time frame uh we are we're gonna be all

117
00:04:55,670 --> 00:04:53,199
about vehicles uh at the end of march

118
00:04:56,710 --> 00:04:55,680
and all the way through april into early

119
00:05:00,230 --> 00:04:56,720
may

120
00:05:03,029 --> 00:05:00,240
at this point uh our plan is to relocate

121
00:05:05,270 --> 00:05:03,039
the crew one dragon that's currently

122
00:05:06,710 --> 00:05:05,280
sitting on the no two forward port and

123
00:05:08,310 --> 00:05:06,720
we're going to move it up to the top up

124
00:05:09,590 --> 00:05:08,320
to the zenith port

125
00:05:10,390 --> 00:05:09,600
and we're doing that so that we have a

126
00:05:12,950 --> 00:05:10,400
home

127
00:05:15,270 --> 00:05:12,960
for uh the bowling star liner uh should

128
00:05:17,590 --> 00:05:15,280
it fly this uh this april as it's

129
00:05:20,150 --> 00:05:17,600
currently scheduled or for the crew 2

130
00:05:22,629 --> 00:05:20,160
vehicle the crew dragon that's going to

131
00:05:24,790 --> 00:05:22,639
be following a little later in the month

132
00:05:26,390 --> 00:05:24,800
so uh anyway we're at this point

133
00:05:28,310 --> 00:05:26,400
thinking about this relocate towards

134
00:05:30,390 --> 00:05:28,320
being the march and

135
00:05:32,070 --> 00:05:30,400
and then and then we'll be in a good

136
00:05:33,590 --> 00:05:32,080
posture to receive either one of those

137
00:05:34,950 --> 00:05:33,600
vehicles

138
00:05:36,550 --> 00:05:34,960

as far as on the other end of the

139
00:05:39,510 --> 00:05:36,560
segment and also in april we'll do a

140
00:05:41,189 --> 00:05:39,520
soyuz exchange and we'll bring home 63s

141
00:05:43,110 --> 00:05:41,199
and and our russian colleagues will

142
00:05:44,870 --> 00:05:43,120
launch 64s

143
00:05:47,670 --> 00:05:44,880
so uh there's a lot going on in this

144
00:05:49,670 --> 00:05:47,680
time frame um

145
00:05:51,350 --> 00:05:49,680
here in the very near future and then

146
00:05:54,469 --> 00:05:51,360
after that we'll start a pretty big ramp

147
00:05:56,150 --> 00:05:54,479
up to a lot of vehicle traffic so

148
00:05:57,270 --> 00:05:56,160
it's that that part of the increment

149
00:05:59,430 --> 00:05:57,280
where it's kind of a sprint to the

150
00:06:01,830 --> 00:05:59,440
finish line but the team's been in

151
00:06:04,550 --> 00:06:01,840
really good shape and doing a nice job

152
00:06:07,270 --> 00:06:04,560
of planning a lot of different variables

153
00:06:09,749 --> 00:06:07,280
at this stage so uh relative to the eba

154
00:06:11,830 --> 00:06:09,759
we'll do our go no go at the mission

155
00:06:13,189 --> 00:06:11,840
management theme this coming friday at

156
00:06:15,189 --> 00:06:13,199
this point i don't see anything standing

157
00:06:17,189 --> 00:06:15,199
in the way of it and so uh jerry i'll

158
00:06:20,950 --> 00:06:17,199
hand it back to you and let

159
00:06:22,629 --> 00:06:20,960
these other folks talk to you about some

160
00:06:25,110 --> 00:06:22,639
thank you kenny uh with that we'll hand

161
00:06:28,550 --> 00:06:25,120
it over to marcos flores for to discuss

162
00:06:30,550 --> 00:06:28,560
the february 28th spacewalk marcos

163
00:06:32,230 --> 00:06:30,560

good afternoon everyone i'm really happy

164
00:06:34,309 --> 00:06:32,240
to be here i'm really happy to be part

165
00:06:35,749 --> 00:06:34,319
of this team um like kenny said we're

166
00:06:38,950 --> 00:06:35,759
really looking forward to wrapping up

167
00:06:40,469 --> 00:06:38,960
the cva series uh we do have the uh

168
00:06:42,790 --> 00:06:40,479
upcoming activities to go ahead and get

169
00:06:44,390 --> 00:06:42,800
ready for those new rollout solar arrays

170
00:06:46,390 --> 00:06:44,400
that we're gonna be deploying uh later

171
00:06:48,550 --> 00:06:46,400
this year uh so for the first

172
00:06:51,430 --> 00:06:48,560
spacewalker this sunday um we're gonna

173
00:06:53,830 --> 00:06:51,440
have both kate rubins and victor glover

174
00:06:56,309 --> 00:06:53,840
go outside and bring with them a couple

175
00:06:58,870 --> 00:06:56,319
of big bags that uh include a lot of the

176
00:07:00,710 --> 00:06:58,880
struts that are part of this assembly of

177
00:07:02,390 --> 00:07:00,720
uh structure if you will that we're

178
00:07:03,510 --> 00:07:02,400
gonna be installing out in the v6

179
00:07:05,510 --> 00:07:03,520
worksite

180
00:07:07,670 --> 00:07:05,520
we're going to go out and

181
00:07:09,589 --> 00:07:07,680
work in the mass canister is basically

182
00:07:12,309 --> 00:07:09,599
the base of the two solar arrays on the

183
00:07:13,990 --> 00:07:12,319
channels 2b and 4b and then it gets

184
00:07:15,749 --> 00:07:14,000
started with that work and our goal for

185
00:07:17,990 --> 00:07:15,759
that first dba is to go ahead and get uh

186
00:07:19,749 --> 00:07:18,000
at least that 2b modification kit

187
00:07:21,909 --> 00:07:19,759
installed and then we'll get started

188
00:07:23,670 --> 00:07:21,919

with the work on the 4d mod

189
00:07:25,270 --> 00:07:23,680
at that point once we wrap up we're

190
00:07:28,710 --> 00:07:25,280
planning to hand over the remaining of

191
00:07:31,749 --> 00:07:28,720
that activity over to the last few games

192
00:07:34,469 --> 00:07:31,759
for isis upgrades to be later next week

193
00:07:36,070 --> 00:07:34,479
uh from our perspective of course um the

194
00:07:38,550 --> 00:07:36,080
ground teams are working the final

195
00:07:39,589 --> 00:07:38,560
preparations this week um as well as

196
00:07:41,110 --> 00:07:39,599
making sure that we have all the

197
00:07:43,589 --> 00:07:41,120
analysis all the procedures and the

198
00:07:46,070 --> 00:07:43,599
configurations already

199
00:07:47,510 --> 00:07:46,080
planned and figured out ahead of the epa

200
00:07:49,749 --> 00:07:47,520
as well as going to support our crew

201
00:07:52,390 --> 00:07:49,759
members once they go out the door to get

202
00:07:54,550 --> 00:07:52,400
all this uh activity done

203
00:07:56,070 --> 00:07:54,560
um and in terms of the enormous crew

204
00:07:58,150 --> 00:07:56,080
this week has been very busy they've

205
00:07:59,510 --> 00:07:58,160
been working a lot on making sure that

206
00:08:01,749 --> 00:07:59,520
uh they have all their procedures

207
00:08:02,710 --> 00:08:01,759
reviewed and all the training completed

208
00:08:04,469 --> 00:08:02,720
they've been working on getting their

209
00:08:05,510 --> 00:08:04,479
suits themselves ready uh making sure

210
00:08:06,710 --> 00:08:05,520
that all the consumables that they're

211
00:08:08,950 --> 00:08:06,720
gonna be using immediately they are

212
00:08:10,869 --> 00:08:08,960
topped off and ready to go and as well

213
00:08:12,390 --> 00:08:10,879

paychecks just to make sure that they're

214
00:08:13,670 --> 00:08:12,400
comfortable in those suits funds that go

215
00:08:16,230 --> 00:08:13,680
out the door everything's looking good

216
00:08:17,909 --> 00:08:16,240
from that perspective um finally they're

217
00:08:19,110 --> 00:08:17,919
getting uh the last set of equipment and

218
00:08:22,629 --> 00:08:19,120
tools they're going to be using who you

219
00:08:24,550 --> 00:08:22,639
get gathered and prepared for that

220
00:08:25,589 --> 00:08:24,560
and making really good progress so we're

221
00:08:28,230 --> 00:08:25,599
really happy where we're at the

222
00:08:29,670 --> 00:08:28,240
preparations for that um and with that

223
00:08:31,749 --> 00:08:29,680
i'm going to be handing it over to our

224
00:08:33,190 --> 00:08:31,759
lead eva officer art thomason he's going

225
00:08:35,110 --> 00:08:33,200
to be walking you through

226
00:08:35,909 --> 00:08:35,120
a bit more on the timeline and some of

227
00:08:39,190 --> 00:08:35,919
the

228
00:08:40,790 --> 00:08:39,200
graphics that will show you what this

229
00:08:42,550 --> 00:08:40,800
structures are going to be that we're

230
00:08:43,829 --> 00:08:42,560
going to be following on sunday and a

231
00:08:45,430 --> 00:08:43,839
little bit more detail about what the

232
00:08:47,829 --> 00:08:45,440
crew is going to be doing so aren't over

233
00:08:53,910 --> 00:08:50,230
hi i'm art thomas and i'll be the eva

234
00:08:56,630 --> 00:08:53,920
officer for us eba 71 and 72 i'd like to

235
00:08:58,949 --> 00:08:56,640
start off by recognizing my team miranda

236
00:09:01,269 --> 00:08:58,959
nelson colin murphy

237
00:09:02,870 --> 00:09:01,279
reagan cheney and tess caswell these

238
00:09:04,150 --> 00:09:02,880

guys have all done a great job in

239
00:09:06,230 --> 00:09:04,160
setting up the plane and getting us

240
00:09:07,590 --> 00:09:06,240
ready to go out there for this eba and i

241
00:09:09,750 --> 00:09:07,600
really look forward to working with them

242
00:09:10,870 --> 00:09:09,760
on console on the reveal day for these

243
00:09:13,190 --> 00:09:10,880
ebas

244
00:09:15,110 --> 00:09:13,200
so as marcos and kenny summarized the

245
00:09:17,590 --> 00:09:15,120
plan for this is to install a new

246
00:09:19,190 --> 00:09:17,600
structure out on p6

247
00:09:20,150 --> 00:09:19,200
so that we can install two new solar

248
00:09:22,230 --> 00:09:20,160
arrays

249
00:09:23,670 --> 00:09:22,240
so we've got the two bravo side and the

250
00:09:25,670 --> 00:09:23,680
four bravo side we'll start with the two

251
00:09:27,829 --> 00:09:25,680
bravo side complete the installation of

252
00:09:29,670 --> 00:09:27,839
that structure and then we'll pick up

253
00:09:32,230 --> 00:09:29,680
with the four bravo side and get as far

254
00:09:35,269 --> 00:09:32,240
as we can on that one uh so here you see

255
00:09:37,430 --> 00:09:35,279
the solar array augmentation plan

256
00:09:39,110 --> 00:09:37,440
so that's showing you what the new solar

257
00:09:40,949 --> 00:09:39,120
arrays are going to look like over on

258
00:09:43,030 --> 00:09:40,959
the right hand side so you can see that

259
00:09:45,829 --> 00:09:43,040
in green that's the new solar ray or the

260
00:09:47,110 --> 00:09:45,839
irosa which is smaller than the original

261
00:09:48,230 --> 00:09:47,120
solar arrays

262
00:09:50,710 --> 00:09:48,240
but it's going to be able to generate

263
00:09:52,710 --> 00:09:50,720

the same amount of power so you can see

264
00:09:55,110 --> 00:09:52,720
this is a as port as you can go on the

265
00:09:58,230 --> 00:09:55,120
station uh the two bravo side is on the

266
00:10:00,310 --> 00:09:58,240
bottom and the four bravo side is on the

267
00:10:02,829 --> 00:10:00,320
zenith portion

268
00:10:06,230 --> 00:10:02,839
now can i get the ipa overview graphic

269
00:10:08,150 --> 00:10:06,240
please so this is just another view

270
00:10:10,069 --> 00:10:08,160
that's showing how the solar arrays are

271
00:10:11,590 --> 00:10:10,079
canted out so the the neat thing about

272
00:10:13,030 --> 00:10:11,600
this is that you'll be able to generate

273
00:10:14,949 --> 00:10:13,040
power from

274
00:10:17,190 --> 00:10:14,959
the new solar arrays and the old solar

275
00:10:18,550 --> 00:10:17,200
arrays as well and then if you see the

276
00:10:20,310 --> 00:10:18,560
zoomed in picture

277
00:10:22,630 --> 00:10:20,320
the irosa mod kit is what we're going to

278
00:10:24,949 --> 00:10:22,640
be installing so it's the support

279
00:10:26,790 --> 00:10:24,959
structure that the solar rays will

280
00:10:28,630 --> 00:10:26,800
eventually mount to

281
00:10:29,670 --> 00:10:28,640
and kind of get the mod kit graphic

282
00:10:31,030 --> 00:10:29,680
there it is

283
00:10:33,269 --> 00:10:31,040
so this shows structure that we're

284
00:10:35,509 --> 00:10:33,279
installing uh the thing in the teal

285
00:10:37,110 --> 00:10:35,519
color is the mass canister

286
00:10:39,590 --> 00:10:37,120
so we're going to be bolting this new

287
00:10:41,350 --> 00:10:39,600
structure onto the mass canister

288
00:10:43,110 --> 00:10:41,360

we've got the different names for these

289
00:10:45,110 --> 00:10:43,120
so i'm sure you'll hear in the video

290
00:10:48,310 --> 00:10:45,120
watch in a moment i'll be referring to

291
00:10:50,310 --> 00:10:48,320
the lower struts the mid strut

292
00:10:51,910 --> 00:10:50,320
the two upper struts and then we've got

293
00:10:54,949 --> 00:10:51,920
the mounting bracket that the solar

294
00:10:57,910 --> 00:10:54,959
array is going to attach to

295
00:11:00,230 --> 00:10:57,920
uh bad graphic please

296
00:11:01,910 --> 00:11:00,240
so unfortunately this mod kit is very

297
00:11:03,670 --> 00:11:01,920
large and it doesn't fit out the door in

298
00:11:05,590 --> 00:11:03,680
its current state so we have to bring it

299
00:11:07,190 --> 00:11:05,600
out in pieces kind of like assembling

300
00:11:08,870 --> 00:11:07,200
furniture

301
00:11:10,790 --> 00:11:08,880
you can see this bag here

302
00:11:13,030 --> 00:11:10,800
has a it's really great design because

303
00:11:14,870 --> 00:11:13,040
it's got straps that hold each component

304
00:11:16,230 --> 00:11:14,880
in its own place so it's going to stay

305
00:11:18,230 --> 00:11:16,240
there until the crew is ready to take it

306
00:11:20,389 --> 00:11:18,240
out and assemble the next piece the one

307
00:11:22,550 --> 00:11:20,399
piece that's missing here is the

308
00:11:24,710 --> 00:11:22,560
mounting bracket it's going to go on top

309
00:11:27,110 --> 00:11:24,720
of this and then the lid will be shut

310
00:11:28,550 --> 00:11:27,120
these bags are eight feet long and over

311
00:11:29,350 --> 00:11:28,560
300 pounds

312
00:11:30,790 --> 00:11:29,360
so

313
00:11:32,389 --> 00:11:30,800

even though we don't have you know

314
00:11:34,870 --> 00:11:32,399
gravity to deal with in space we still

315
00:11:36,389 --> 00:11:34,880
have the inertia and mass and so uh the

316
00:11:37,829 --> 00:11:36,399
crew knows to be careful with this and

317
00:11:39,190 --> 00:11:37,839
as they're translating out there they're

318
00:11:40,389 --> 00:11:39,200
going to take it easy and make sure when

319
00:11:42,389 --> 00:11:40,399
they're turning corners and things like

320
00:11:44,870 --> 00:11:42,399
that they help guide the bag because

321
00:11:48,230 --> 00:11:44,880
this is a larger thing than what they're

322
00:11:50,069 --> 00:11:48,240
used to typically translating with

323
00:11:51,910 --> 00:11:50,079
so i think that covers the general

324
00:11:53,269 --> 00:11:51,920
detail that i wanted to go over but i've

325
00:11:55,110 --> 00:11:53,279
got a video that i'd like to show you

326
00:11:56,310 --> 00:11:55,120
guys now that walks you through step by

327
00:12:00,310 --> 00:11:56,320
step on what we're going to do on the

328
00:12:07,030 --> 00:12:04,310
for us eva 71 ev1 will egress the joint

329
00:12:10,310 --> 00:12:07,040
airlock first you'll see ev1 has the red

330
00:12:12,870 --> 00:12:10,320
stripes and ev2 the white suit ev2 will

331
00:12:15,990 --> 00:12:12,880
pass out the two strut bags containing

332
00:12:19,350 --> 00:12:16,000
structure to support new solar arrays

333
00:12:21,829 --> 00:12:19,360
ev2 will head out to p1

334
00:12:24,150 --> 00:12:21,839
where he will install the anchor hooks

335
00:12:25,990 --> 00:12:24,160
for the cruise safety tether now this is

336
00:12:28,629 --> 00:12:26,000
what we call a slingshot and we'll give

337
00:12:31,910 --> 00:12:28,639
them 170 feet of length that they need

338
00:12:33,829 --> 00:12:31,920

to get all the way out to p6

339
00:12:36,629 --> 00:12:33,839
at that point both crew members will

340
00:12:39,910 --> 00:12:36,639
translate to p6 and install their

341
00:12:41,350 --> 00:12:39,920
respective bags on the four bravo and

342
00:12:44,790 --> 00:12:41,360
two bravo

343
00:12:51,430 --> 00:12:47,990
ev1 will translate back in board

344
00:12:54,470 --> 00:12:51,440
and retrieve a portable foot restraint

345
00:12:57,829 --> 00:12:54,480
with a extension

346
00:12:59,110 --> 00:12:57,839
and head back to join ev2 at the 2 bravo

347
00:13:00,949 --> 00:12:59,120
worksite

348
00:13:04,069 --> 00:13:00,959
ev1 will set up this portable foot

349
00:13:05,190 --> 00:13:04,079
restraint for access to the mod kit

350
00:13:08,150 --> 00:13:05,200
install

351
00:13:09,829 --> 00:13:08,160
and translate over to the bag

352
00:13:12,310 --> 00:13:09,839
where both crew members will begin

353
00:13:15,110 --> 00:13:12,320
building what we call the upper triangle

354
00:13:18,069 --> 00:13:15,120
which includes the mounting bracket

355
00:13:20,069 --> 00:13:18,079
a left strut and a right strut

356
00:13:22,069 --> 00:13:20,079
they'll use their pistol grip tool to

357
00:13:24,870 --> 00:13:22,079
assemble that triangle

358
00:13:27,190 --> 00:13:24,880
once it's complete ev1 will be in the

359
00:13:29,670 --> 00:13:27,200
portable foot restraint and eb2 will

360
00:13:32,069 --> 00:13:29,680
hand it off to ev1

361
00:13:33,750 --> 00:13:32,079
here you see ev1 installing this on the

362
00:13:35,750 --> 00:13:33,760
mass canister

363
00:13:37,829 --> 00:13:35,760

there's a strong soft dock feature that

364
00:13:39,990 --> 00:13:37,839
will hold it in place

365
00:13:41,829 --> 00:13:40,000
once it's positioned in place ev1 will

366
00:13:44,389 --> 00:13:41,839
use the pistol grip tool to drive four

367
00:13:49,509 --> 00:13:46,230
v1 will then reposition the foot

368
00:13:53,350 --> 00:13:49,519
restraint for access to the left side of

369
00:13:57,750 --> 00:13:55,590
here you see the mid-strut on eb-1's

370
00:13:59,509 --> 00:13:57,760
body restraint tether

371
00:14:02,389 --> 00:13:59,519
maybe one will hold the lower strut

372
00:14:04,389 --> 00:14:02,399
while eb2 gets into position

373
00:14:06,870 --> 00:14:04,399
now work together to install the left

374
00:14:09,030 --> 00:14:06,880
lower strut ev2 will start off by

375
00:14:09,990 --> 00:14:09,040
drilling the bolt with his pistol grip

376
00:14:11,750 --> 00:14:10,000
tool

377
00:14:14,389 --> 00:14:11,760
and if you want will

378
00:14:16,790 --> 00:14:14,399
drive the upper bolt that connects it to

379
00:14:18,710 --> 00:14:16,800
the mounting bracket

380
00:14:22,030 --> 00:14:18,720
they'll then work together to install

381
00:14:23,990 --> 00:14:22,040
the mid strut on the left side

382
00:14:26,550 --> 00:14:24,000
[Music]

383
00:14:28,389 --> 00:14:26,560
here you can see ev2 driving four bolts

384
00:14:30,069 --> 00:14:28,399
that hold it to the mass canister

385
00:14:31,750 --> 00:14:30,079
similar to the h fixtures that were

386
00:14:34,150 --> 00:14:31,760
recently removed

387
00:14:38,470 --> 00:14:34,160
and ev1 will drive the bolt to secure it

388
00:14:45,110 --> 00:14:42,470

maybe one will then reposition the apfr

389
00:14:47,430 --> 00:14:45,120
and get back in after getting the

390
00:14:55,350 --> 00:14:47,440
mid-strut on her brt

391
00:14:59,030 --> 00:14:56,949
she'll get back into the portable foot

392
00:15:00,310 --> 00:14:59,040
restraint

393
00:15:03,430 --> 00:15:00,320
receive

394
00:15:05,350 --> 00:15:03,440
the right lower strut

395
00:15:08,069 --> 00:15:05,360
and then ev2 will translate around the

396
00:15:09,829 --> 00:15:08,079
mass canister for access

397
00:15:11,590 --> 00:15:09,839
to the installation point for the right

398
00:15:13,590 --> 00:15:11,600
lower strut

399
00:15:15,110 --> 00:15:13,600
again just like the left side they'll be

400
00:15:17,189 --> 00:15:15,120
working together to drive their

401
00:15:20,050 --> 00:15:17,199
respective bolts with their pistol grip

402
00:15:25,670 --> 00:15:23,189
[Music]

403
00:15:27,920 --> 00:15:25,680
ev2 will translate up for

404
00:15:29,910 --> 00:15:27,930
the mid-strut install

405
00:15:32,629 --> 00:15:29,920
[Music]

406
00:15:34,870 --> 00:15:32,639
or the heel drive four bolts ev-1 will

407
00:15:36,870 --> 00:15:34,880
have a single bolt

408
00:15:39,269 --> 00:15:36,880
and then ev2 will tighten the clamp

409
00:15:41,590 --> 00:15:39,279
bolts on both sides the mid-struts are

410
00:15:43,350 --> 00:15:41,600
telescoping and this clamp bolt prevents

411
00:15:45,220 --> 00:15:43,360
it from telescoping any further once

412
00:15:47,430 --> 00:15:45,230
it's in place

413
00:15:48,870 --> 00:15:47,440

[Music]

414
00:15:51,030 --> 00:15:48,880
the crew will then work together to

415
00:15:52,629 --> 00:15:51,040
secure the thermal blankets

416
00:15:54,710 --> 00:15:52,639
over all of the struts and make sure

417
00:15:57,030 --> 00:15:54,720
they're in place as well as verifying

418
00:15:59,110 --> 00:15:57,040
that the pit pins that provide

419
00:16:02,150 --> 00:15:59,120
grounding paths for the structure are

420
00:16:06,230 --> 00:16:04,230
they'll then grab the necessary tools

421
00:16:07,990 --> 00:16:06,240
and head over to the four bravo work

422
00:16:09,910 --> 00:16:08,000
site

423
00:16:12,550 --> 00:16:09,920
very similar kind of a mirror image to

424
00:16:15,430 --> 00:16:12,560
what they were working on previously

425
00:16:18,710 --> 00:16:15,440
ev1 will install the apfr or the

426
00:16:22,629 --> 00:16:20,710
and they'll work together again to build

427
00:16:24,150 --> 00:16:22,639
the upper triangle

428
00:16:26,150 --> 00:16:24,160
consisting of

429
00:16:27,100 --> 00:16:26,160
the two upper struts and the mounting

430
00:16:30,389 --> 00:16:27,110
bracket

431
00:16:32,550 --> 00:16:30,399
[Music]

432
00:16:34,310 --> 00:16:32,560
ev1 in the in the portable foot

433
00:16:38,629 --> 00:16:34,320
restraint will receive

434
00:16:43,590 --> 00:16:41,030
and then they'll get set up to install

435
00:16:45,509 --> 00:16:43,600
the final piece to get to what we call

436
00:16:47,189 --> 00:16:45,519
the minimum configuration

437
00:16:49,189 --> 00:16:47,199
by installing this

438
00:16:50,629 --> 00:16:49,199

right lower strut

439
00:16:53,030 --> 00:16:50,639
the system is now in a good

440
00:16:55,269 --> 00:16:53,040
configuration to leave it out and

441
00:16:57,350 --> 00:16:55,279
operate space station nominally

442
00:16:59,030 --> 00:16:57,360
if we didn't have this installed then we

443
00:17:00,870 --> 00:16:59,040
would need to perform a tie down to make

444
00:17:03,990 --> 00:17:00,880
sure that everything was structurally

445
00:17:05,990 --> 00:17:04,000
down before heading back in

446
00:17:08,949 --> 00:17:06,000
there is extra time we'll continue to

447
00:17:11,829 --> 00:17:08,959
build the four bravo mod kit on this eva

448
00:17:13,350 --> 00:17:11,839
if not i would we have plans to perform

449
00:17:15,510 --> 00:17:13,360
the rest of the install

450
00:17:17,510 --> 00:17:15,520
on the next dva

451
00:17:19,189 --> 00:17:17,520
the crew will then pack the empty bag

452
00:17:21,189 --> 00:17:19,199
with the tools that they plan to bring

453
00:17:24,470 --> 00:17:21,199
inside

454
00:17:26,789 --> 00:17:24,480
eb2 will carry that back to the airlock

455
00:17:31,350 --> 00:17:26,799
both crew members will translate back to

456
00:17:35,990 --> 00:17:34,310
they'll leave the slingshots out

457
00:17:37,510 --> 00:17:36,000
meaning that the tethers will be strung

458
00:17:39,270 --> 00:17:37,520
out to p1

459
00:17:40,230 --> 00:17:39,280
because we'll use them again on a future

460
00:17:42,789 --> 00:17:40,240
eva

461
00:17:45,590 --> 00:17:42,799
eb2 will put the bag in the airlock and

462
00:17:47,790 --> 00:17:45,600
ingress followed by ev1 we will then

463
00:17:54,870 --> 00:17:47,800

close the hatch

464
00:17:59,909 --> 00:17:56,950
okay i'm back with you and i have with

465
00:18:02,549 --> 00:17:59,919
here with me a upper strut so you can

466
00:18:04,150 --> 00:18:02,559
see that it's covered in multi-layer

467
00:18:05,029 --> 00:18:04,160
insulation or a thermal blanket if you

468
00:18:06,870 --> 00:18:05,039
will

469
00:18:09,190 --> 00:18:06,880
this is the side that's going to attach

470
00:18:11,750 --> 00:18:09,200
to the filter pad i'll get that blanket

471
00:18:13,750 --> 00:18:11,760
out of the way so you can see that and

472
00:18:16,150 --> 00:18:13,760
this is the side that's going to attach

473
00:18:17,590 --> 00:18:16,160
to the mounting bracket so there's two

474
00:18:19,350 --> 00:18:17,600
bolts on this side

475
00:18:20,630 --> 00:18:19,360
one of the neat features about the bolts

476
00:18:22,630 --> 00:18:20,640
is if you can see there's some black

477
00:18:24,070 --> 00:18:22,640
lines there so once the bolt is fully

478
00:18:25,669 --> 00:18:24,080
installed the crew will see that that

479
00:18:27,590 --> 00:18:25,679
black line is flush knowing that they

480
00:18:29,029 --> 00:18:27,600
got it fully installed on the ground

481
00:18:31,430 --> 00:18:29,039
we'll be monitoring the torques and

482
00:18:32,789 --> 00:18:31,440
turns so that we know that it's they got

483
00:18:35,909 --> 00:18:32,799
a good install but it's nice to have

484
00:18:38,070 --> 00:18:35,919
that visual indicator on their side

485
00:18:39,350 --> 00:18:38,080
the blanket on it is kind of unique the

486
00:18:40,950 --> 00:18:39,360
blanket is there to protect it from

487
00:18:42,789 --> 00:18:40,960
thermal extremes

488
00:18:44,310 --> 00:18:42,799

but this one has something that's a

489
00:18:46,710 --> 00:18:44,320
little different we don't have to velcro

490
00:18:48,310 --> 00:18:46,720
it in place or tie it in place

491
00:18:50,230 --> 00:18:48,320
we actually can just put it over the

492
00:18:53,190 --> 00:18:50,240
bolt once that's installed and then it

493
00:18:54,470 --> 00:18:53,200
has integrated wire ties in there so

494
00:18:56,870 --> 00:18:54,480
you're able to just bend it around the

495
00:18:58,470 --> 00:18:56,880
structure and it's it stays in place so

496
00:18:59,909 --> 00:18:58,480
it'll definitely save through some time

497
00:19:02,230 --> 00:18:59,919
and getting this blanket in place so you

498
00:19:03,830 --> 00:19:02,240
can see a few of these uh here now and

499
00:19:06,710 --> 00:19:03,840
how that works so it's just a wire that

500
00:19:08,630 --> 00:19:06,720
you can you can

501
00:19:12,390 --> 00:19:08,640
you'll also notice that there is

502
00:19:14,789 --> 00:19:12,400
a grounding pin so this is used to

503
00:19:16,390 --> 00:19:14,799
provide connectivity uh throughout the

504
00:19:18,150 --> 00:19:16,400
the whole mod kit so that we don't have

505
00:19:20,549 --> 00:19:18,160
a charge build up in one place or

506
00:19:24,150 --> 00:19:22,230
next i'd like to go ahead and introduce

507
00:19:27,350 --> 00:19:24,160
the crew if i could get the crew graphic

508
00:19:29,029 --> 00:19:27,360
i'll show you that uh ev1 will be kate

509
00:19:31,270 --> 00:19:29,039
rubins she'll be wearing the suit with

510
00:19:33,350 --> 00:19:31,280
the red stripes and victor glover will

511
00:19:35,909 --> 00:19:33,360
be ev2 he'll be coming out in the white

512
00:19:37,430 --> 00:19:35,919
suit this will be the third eva for both

513
00:19:39,590 --> 00:19:37,440

of these crew members it'll be their

514
00:19:41,270 --> 00:19:39,600
first time working together but they've

515
00:19:43,590 --> 00:19:41,280
both seen this in the water a number of

516
00:19:45,350 --> 00:19:43,600
times so i know they'll be ready to go

517
00:19:48,390 --> 00:19:45,360
for this and we'll talk to them a few

518
00:19:50,150 --> 00:19:48,400
times they've been studying hard

519
00:19:52,549 --> 00:19:50,160
inside the vehicle we'll have mike

520
00:19:54,950 --> 00:19:52,559
hopkins and suichi naguchi getting them

521
00:19:57,029 --> 00:19:54,960
ready to go outside and suit it up and

522
00:19:59,029 --> 00:19:57,039
then here on the ground we'll have frank

523
00:20:01,029 --> 00:19:59,039
rubio as the ground iv so frank's been

524
00:20:02,710 --> 00:20:01,039
following this with us for quite some

525
00:20:05,270 --> 00:20:02,720
time

526
00:20:07,510 --> 00:20:05,280
he's done this in the water in the suit

527
00:20:09,909 --> 00:20:07,520
he's been the communicator doing a lot

528
00:20:12,070 --> 00:20:09,919
of our neutral buoyancy lab runs

529
00:20:13,590 --> 00:20:12,080
so you know we're happy to have him as

530
00:20:15,029 --> 00:20:13,600
part of the team and he'll be able to

531
00:20:17,350 --> 00:20:15,039
give them some valuable insight as he

532
00:20:18,789 --> 00:20:17,360
walks in through the tasks

533
00:20:20,630 --> 00:20:18,799
so we've done a lot of work here on the

534
00:20:22,470 --> 00:20:20,640
grounds and the crew has done a lot of

535
00:20:25,510 --> 00:20:22,480
preparation to get ready for this so uh

536
00:20:28,630 --> 00:20:25,520
we're ready to go for usc va 71

537
00:20:31,029 --> 00:20:28,640
and i'll turn it back over to you gary

538
00:20:33,510 --> 00:20:31,039

thank you art uh we'll now discuss the

539
00:20:35,590 --> 00:20:33,520
march 5th spacewalk so we'll go to chris

540
00:20:37,909 --> 00:20:35,600
edelen chris

541
00:20:40,630 --> 00:20:37,919
all right thank you gary so uh we have a

542
00:20:43,350 --> 00:20:40,640
variety of tasks planned for the iss

543
00:20:46,070 --> 00:20:43,360
upgrades three eva the top priority will

544
00:20:49,350 --> 00:20:46,080
be to complete the irosa prep work that

545
00:20:52,230 --> 00:20:49,360
art and uh and marcos described we don't

546
00:20:54,310 --> 00:20:52,240
expect that kate and victor will have

547
00:20:56,710 --> 00:20:54,320
sufficient time to complete all of the

548
00:20:58,630 --> 00:20:56,720
irosa prep work so we will flex our

549
00:21:00,549 --> 00:20:58,640
timeline for this eva in order to be

550
00:21:03,909 --> 00:21:00,559
able to complete that work so that we

551
00:21:06,390 --> 00:21:03,919
have a good configuration on the iss

552
00:21:08,470 --> 00:21:06,400
power channels for bravo and to bravo to

553
00:21:10,390 --> 00:21:08,480
receive those advanced rollout solar

554
00:21:13,270 --> 00:21:10,400
arrays later this year

555
00:21:15,510 --> 00:21:13,280
our second task is going to be

556
00:21:17,750 --> 00:21:15,520
venting and relocating to ammonia

557
00:21:19,990 --> 00:21:17,760
jumpers these are out on the port six

558
00:21:21,590 --> 00:21:20,000
truss near where the arosa prep work is

559
00:21:23,590 --> 00:21:21,600
is happening

560
00:21:26,630 --> 00:21:23,600
these jumpers have been used in the past

561
00:21:28,950 --> 00:21:26,640
to uh to transfer ammonia between

562
00:21:30,870 --> 00:21:28,960
separate sections of the iss external

563
00:21:33,830 --> 00:21:30,880

thermal control system they've been used

564
00:21:34,870 --> 00:21:33,840
to troubleshoot leaks out on p6 so what

565
00:21:36,950 --> 00:21:34,880
we'll do

566
00:21:39,510 --> 00:21:36,960
is the crew will vent the ammonia of

567
00:21:41,590 --> 00:21:39,520
these jumpers of hoses essentially so

568
00:21:44,070 --> 00:21:41,600
that they can be safely handled and then

569
00:21:45,990 --> 00:21:44,080
they will leave one on p6 so it's

570
00:21:47,669 --> 00:21:46,000
available for any future leak

571
00:21:50,149 --> 00:21:47,679
troubleshooting and the other will be

572
00:21:52,390 --> 00:21:50,159
coiled up and relocated back to the

573
00:21:54,630 --> 00:21:52,400
airlock and stowed on an

574
00:21:56,789 --> 00:21:54,640
external locker on the airlock so it's

575
00:21:58,470 --> 00:21:56,799
in a convenient location if we ever have

576
00:22:00,710 --> 00:21:58,480
to go out on the starboard side and

577
00:22:02,549 --> 00:22:00,720
troubleshoot any ammonia leaks there of

578
00:22:04,789 --> 00:22:02,559
course uh when dealing with ammonia

579
00:22:07,430 --> 00:22:04,799
extra vigilance is is necessary because

580
00:22:09,430 --> 00:22:07,440
of the concern that uh if we got ammonia

581
00:22:10,950 --> 00:22:09,440
contamination on the suits and then

582
00:22:13,990 --> 00:22:10,960
brought that inside station that could

583
00:22:16,070 --> 00:22:14,000
represent a a potential toxic atmosphere

584
00:22:17,590 --> 00:22:16,080
situation for the crew inside station so

585
00:22:19,430 --> 00:22:17,600
again we'll be paying extra close

586
00:22:21,590 --> 00:22:19,440
attention to make sure that the suits

587
00:22:23,029 --> 00:22:21,600
don't get any contamination with ammonia

588
00:22:24,950 --> 00:22:23,039

or if they do we have contingency

589
00:22:26,710 --> 00:22:24,960
procedures available and the teams are

590
00:22:28,470 --> 00:22:26,720
trained to execute those to make sure

591
00:22:29,510 --> 00:22:28,480
that the crew stays safe with with

592
00:22:32,070 --> 00:22:29,520
ammonia

593
00:22:34,310 --> 00:22:32,080
our next task after this will be to uh

594
00:22:37,510 --> 00:22:34,320
to head back to the airlock and replace

595
00:22:39,990 --> 00:22:37,520
a failed wireless video system external

596
00:22:41,750 --> 00:22:40,000
transceiver assembly or letta this is

597
00:22:44,149 --> 00:22:41,760
one of three lettuce located on the

598
00:22:46,230 --> 00:22:44,159
outside station this uh this is

599
00:22:48,470 --> 00:22:46,240
essentially an antenna that uh that

600
00:22:51,270 --> 00:22:48,480
receives the transmission from the crew

601
00:22:54,310 --> 00:22:51,280
members hellcam their wireless video

602
00:22:56,789 --> 00:22:54,320
cameras on their helmets so uh just like

603
00:22:58,390 --> 00:22:56,799
we love watching this on nasa tv we also

604
00:23:00,470 --> 00:22:58,400
really appreciate having this in mission

605
00:23:02,149 --> 00:23:00,480
control during ebas to be able to have

606
00:23:03,909 --> 00:23:02,159
the crew members perspective to see

607
00:23:05,830 --> 00:23:03,919
exactly what they're working on so we

608
00:23:08,630 --> 00:23:05,840
definitely want to replace this uh this

609
00:23:10,630 --> 00:23:08,640
one letta on node one that failed

610
00:23:13,350 --> 00:23:10,640
towards the end of last year get this

611
00:23:15,669 --> 00:23:13,360
replaced so that we have good coverage

612
00:23:17,669 --> 00:23:15,679
for our wireless video system we're

613
00:23:19,990 --> 00:23:17,679

doing space blocks

614
00:23:21,510 --> 00:23:20,000
another task that we have planned is to

615
00:23:23,830 --> 00:23:21,520
route

616
00:23:27,190 --> 00:23:23,840
two ethernet cables

617
00:23:29,830 --> 00:23:27,200
on the aft port one truss this will be

618
00:23:32,470 --> 00:23:29,840
used to uh for a future wireless access

619
00:23:33,590 --> 00:23:32,480
point upgrades on the outside station to

620
00:23:36,870 --> 00:23:33,600
accommodate

621
00:23:38,549 --> 00:23:36,880
payloads as well as future high def eva

622
00:23:40,870 --> 00:23:38,559
wireless video

623
00:23:43,269 --> 00:23:40,880
so and one other um unique aspect of

624
00:23:45,510 --> 00:23:43,279
this eva is we will have

625
00:23:47,750 --> 00:23:45,520
what's called the iss experiment camera

626
00:23:49,990 --> 00:23:47,760
system mounted to the special purpose

627
00:23:51,750 --> 00:23:50,000
dexterous manipulator or dexter as it's

628
00:23:54,630 --> 00:23:51,760
commonly called that's going to be

629
00:23:58,070 --> 00:23:54,640
mounted on dexter on the station arm and

630
00:23:59,750 --> 00:23:58,080
it will give us a 360 degree view of the

631
00:24:01,830 --> 00:23:59,760
eva now we won't have this video

632
00:24:03,510 --> 00:24:01,840
available in real time but they will be

633
00:24:05,590 --> 00:24:03,520
capturing this video and making that

634
00:24:07,269 --> 00:24:05,600
available later uh

635
00:24:09,029 --> 00:24:07,279
for the public

636
00:24:11,190 --> 00:24:09,039
to see to be able to sort of better

637
00:24:13,269 --> 00:24:11,200
experience what it's like on the outside

638
00:24:15,110 --> 00:24:13,279

station doing an eva so we're really

639
00:24:16,630 --> 00:24:15,120
looking forward to seeing those views

640
00:24:19,590 --> 00:24:16,640
and then finally we have a few other

641
00:24:21,909 --> 00:24:19,600
additional tasks that that will be added

642
00:24:24,070 --> 00:24:21,919
to the eba depending upon how much of

643
00:24:26,070 --> 00:24:24,080
that content from irosa prep

644
00:24:28,710 --> 00:24:26,080
rolls into our epa kenny already

645
00:24:29,750 --> 00:24:28,720
mentioned uh the possibility of doing

646
00:24:31,590 --> 00:24:29,760
the

647
00:24:33,430 --> 00:24:31,600
columbus connector troubleshooting

648
00:24:35,590 --> 00:24:33,440
that's one of the leading candidates so

649
00:24:38,149 --> 00:24:35,600
we'll be paying very close attention to

650
00:24:39,350 --> 00:24:38,159
what happens on rosa prep eva the first

651
00:24:41,750 --> 00:24:39,360
eba

652
00:24:43,830 --> 00:24:41,760
again to see what our final plan will

653
00:24:46,070 --> 00:24:43,840
look like it's going to be a busy five

654
00:24:47,190 --> 00:24:46,080
days in between evas as we finalize our

655
00:24:48,630 --> 00:24:47,200
plan

656
00:24:50,390 --> 00:24:48,640
and as marcos already mentioned the crew

657
00:24:51,590 --> 00:24:50,400
has already been studying preparing

658
00:24:54,789 --> 00:24:51,600
their suits and they're studying the

659
00:24:56,710 --> 00:24:54,799
tasks for both evas in parallel so that

660
00:24:59,590 --> 00:24:56,720
they're ready to go and that we have

661
00:25:01,350 --> 00:24:59,600
both a crew on on orbit as well as the

662
00:25:03,990 --> 00:25:01,360
flight control team here on the ground

663
00:25:07,830 --> 00:25:04,000

ready to execute two safe and efficient

664
00:25:09,269 --> 00:25:07,840
evas next week so gary back to you

665
00:25:11,110 --> 00:25:09,279
thank you chris uh with that we'll go

666
00:25:13,590 --> 00:25:11,120
back to art to walk us through the

667
00:25:15,029 --> 00:25:13,600
preparations and procedures

668
00:25:17,029 --> 00:25:15,039
okay well thanks a lot for the great

669
00:25:18,390 --> 00:25:17,039
summary chris um i don't have too much

670
00:25:20,070 --> 00:25:18,400
to add that but i do have a little extra

671
00:25:21,830 --> 00:25:20,080
detail that i'd like to talk through on

672
00:25:24,070 --> 00:25:21,840
the first task which i think is the most

673
00:25:26,390 --> 00:25:24,080
complex uh that's venting the ammonia

674
00:25:27,909 --> 00:25:26,400
jumpers so if we could have the jumper

675
00:25:29,830 --> 00:25:27,919
graphic

676
00:25:31,669 --> 00:25:29,840
so this shows the initial configuration

677
00:25:34,149 --> 00:25:31,679
of the two jumpers so these jumpers are

678
00:25:36,549 --> 00:25:34,159
used to tie together the early ammonia

679
00:25:37,990 --> 00:25:36,559
system uh out on the port side with the

680
00:25:40,630 --> 00:25:38,000
outboard ammonia system that we

681
00:25:43,909 --> 00:25:40,640
currently use uh some chamfers were used

682
00:25:45,990 --> 00:25:43,919
on usda 33 to do an outboard fill so we

683
00:25:48,310 --> 00:25:46,000
filled that outboard

684
00:25:49,909 --> 00:25:48,320
ammonia system and then the plan here as

685
00:25:51,510 --> 00:25:49,919
chris mentioned is we're going to vent

686
00:25:53,750 --> 00:25:51,520
both of these jumpers

687
00:25:57,590 --> 00:25:53,760
so in order to do that we'll disconnect

688
00:25:59,669 --> 00:25:57,600

the fh01 jumper vent that and we'll stow

689
00:26:01,350 --> 00:25:59,679
it on the vent tool extender bag so this

690
00:26:03,830 --> 00:26:01,360
is a bag that we're going to bring back

691
00:26:06,149 --> 00:26:03,840
to the zenith part of the airlock we'll

692
00:26:08,310 --> 00:26:06,159
have this jumper centrally located in

693
00:26:10,149 --> 00:26:08,320
the event that we need to fill the

694
00:26:11,110 --> 00:26:10,159
outboard ammonia system on the starboard

695
00:26:13,350 --> 00:26:11,120
side

696
00:26:16,710 --> 00:26:13,360
and while we're there we'll vent the ho2

697
00:26:18,390 --> 00:26:16,720
jumper and leave it in place out at p6

698
00:26:20,630 --> 00:26:18,400
in case we need to do a fill on the port

699
00:26:22,070 --> 00:26:20,640
side so kind of as chris mentioned we

700
00:26:23,990 --> 00:26:22,080
want to make sure we vent these jumpers

701
00:26:25,510 --> 00:26:24,000
before we do anything with them because

702
00:26:27,110 --> 00:26:25,520
right now they're tied into the ammonia

703
00:26:30,070 --> 00:26:27,120
system that has an accumulator as part

704
00:26:31,510 --> 00:26:30,080
of the system but when they're isolated

705
00:26:33,750 --> 00:26:31,520
due to thermal expansion we don't want

706
00:26:35,350 --> 00:26:33,760
these to rupture so we get them vented

707
00:26:37,029 --> 00:26:35,360
quickly so that they'll be safe to

708
00:26:41,350 --> 00:26:37,039
handle and move out to the starboard

709
00:26:45,909 --> 00:26:43,350
next slide please uh so yeah this one is

710
00:26:48,230 --> 00:26:45,919
the vent tool hardware so you see the

711
00:26:50,149 --> 00:26:48,240
vent tool and the vent tool extender so

712
00:26:51,350 --> 00:26:50,159
obviously ammonia is something that we

713
00:26:52,390 --> 00:26:51,360

don't want to get on the crew or get

714
00:26:54,549 --> 00:26:52,400
near the crew

715
00:26:56,230 --> 00:26:54,559
and we'll have the tools to help keep

716
00:26:58,710 --> 00:26:56,240
the plumbing ammonia from the jumper

717
00:27:01,510 --> 00:26:58,720
vent well away from the crew so the vent

718
00:27:02,710 --> 00:27:01,520
tool will attach with an adapter to each

719
00:27:04,470 --> 00:27:02,720
jumper

720
00:27:06,630 --> 00:27:04,480
and then the end of the vent tool with

721
00:27:09,190 --> 00:27:06,640
the hook will plug into the vent tool

722
00:27:10,870 --> 00:27:09,200
extender where you see that lever and

723
00:27:12,630 --> 00:27:10,880
then the crew will route the vent tool

724
00:27:15,110 --> 00:27:12,640
extender out to the

725
00:27:17,350 --> 00:27:15,120
the aft side of station

726
00:27:19,269 --> 00:27:17,360
attach that nozzle to a handrail and

727
00:27:21,269 --> 00:27:19,279
then it'll vent station app while the

728
00:27:23,190 --> 00:27:21,279
the crew is on the forward side

729
00:27:25,669 --> 00:27:23,200
of the station keeping them well clear

730
00:27:27,430 --> 00:27:25,679
that vent

731
00:27:28,789 --> 00:27:27,440
so at this point i've got a video i'd

732
00:27:32,389 --> 00:27:28,799
like to show you that walks you through

733
00:27:35,029 --> 00:27:32,399
the the different portions of the eva

734
00:27:37,269 --> 00:27:35,039
for us eva 72

735
00:27:39,990 --> 00:27:37,279
both crew members will egress the joint

736
00:27:43,269 --> 00:27:40,000
airlock ev1 and the red stripes coming

737
00:27:45,190 --> 00:27:43,279
out first followed by ev2 ev1 will

738
00:27:47,669 --> 00:27:45,200

translate to the top of the airlock and

739
00:27:50,549 --> 00:27:47,679
retrieve the vent tool extender bag and

740
00:27:52,549 --> 00:27:50,559
put it on their brt

741
00:27:54,310 --> 00:27:52,559
one will head out to the work site

742
00:27:58,230 --> 00:27:54,320
taking advantage of the tethers that

743
00:28:03,029 --> 00:28:00,310
they will stow the vent tool extender

744
00:28:07,909 --> 00:28:03,039
bag on the truss

745
00:28:12,149 --> 00:28:10,549
ev2 will begin work setting up the vent

746
00:28:14,389 --> 00:28:12,159
tool extender

747
00:28:16,630 --> 00:28:14,399
this will set up a nozzle so that the

748
00:28:19,909 --> 00:28:16,640
ammonia in the jumpers it's vented will

749
00:28:22,950 --> 00:28:19,919
go station aft and clear of the crew

750
00:28:24,310 --> 00:28:22,960
ev1 will start to vent the first jumper

751
00:28:25,830 --> 00:28:24,320
by mating it

752
00:28:27,909 --> 00:28:25,840
and then closing the other end to

753
00:28:30,549 --> 00:28:27,919
isolate the ammonia in the jumper and

754
00:28:32,870 --> 00:28:30,559
then opening it to vent it out of the

755
00:28:35,430 --> 00:28:32,880
nozzle of the vent tool extender

756
00:28:37,590 --> 00:28:35,440
once that's complete ev2 will take the

757
00:28:40,230 --> 00:28:37,600
jumper and coil it up on the vent tool

758
00:28:42,149 --> 00:28:40,240
extender bag so it can be relocated back

759
00:28:44,789 --> 00:28:42,159
to the top of the airlock and used for

760
00:28:46,789 --> 00:28:44,799
outboard ops on the starboard side ev1

761
00:28:48,950 --> 00:28:46,799
will vent the second jumper in a similar

762
00:28:51,190 --> 00:28:48,960
way expelling the ammonia from that

763
00:28:53,350 --> 00:28:51,200

jumper and leaving it in place on the

764
00:28:55,269 --> 00:28:53,360
port side in case it's needed for an

765
00:28:56,630 --> 00:28:55,279
outboard ammonia fill

766
00:28:59,110 --> 00:28:56,640
then both crew members will work

767
00:29:01,590 --> 00:28:59,120
together to stow the vent tool and vent

768
00:29:04,950 --> 00:29:01,600
tool extender back in the bag

769
00:29:07,590 --> 00:29:04,960
ev1 will head out to the four bravo mod

770
00:29:10,149 --> 00:29:07,600
kit worksite to finish completion

771
00:29:12,630 --> 00:29:10,159
of the mod kit on the for bravo solar

772
00:29:15,840 --> 00:29:12,640
array

773
00:29:19,110 --> 00:29:15,850
db2 will hand the mid strut off to ev1

774
00:29:22,789 --> 00:29:21,029
and ev1 will get into the portable foot

775
00:29:24,950 --> 00:29:22,799
restraint and they'll install the right

776
00:29:26,950 --> 00:29:24,960
mid strut together

777
00:29:29,110 --> 00:29:26,960
ev2 working on the mass canister will

778
00:29:31,350 --> 00:29:29,120
have four bolts to drive with their

779
00:29:33,830 --> 00:29:31,360
pistol grip tool will be a single bolt

780
00:29:36,470 --> 00:29:33,840
for eb1

781
00:29:38,470 --> 00:29:36,480
repositioning the foot restraint db1

782
00:29:40,630 --> 00:29:38,480
will retrieve the

783
00:29:42,870 --> 00:29:40,640
mid strut for the left side get into the

784
00:29:44,630 --> 00:29:42,880
foot restraint and then get the left

785
00:29:47,990 --> 00:29:44,640
lower strut this will be the last two

786
00:29:52,310 --> 00:29:49,750
eb2 will translate around the mass

787
00:29:55,350 --> 00:29:52,320
canister and get in position to drive

788
00:29:57,110 --> 00:29:55,360

the lower bolt on that strut this is a

789
00:29:58,870 --> 00:29:57,120
pretty high torque bolt

790
00:30:00,700 --> 00:29:58,880
so we'll need a good body position there

791
00:30:02,470 --> 00:30:00,710
and ev1 will drive the upper bolt

792
00:30:04,549 --> 00:30:02,480
[Music]

793
00:30:06,710 --> 00:30:04,559
b2 will translate up the mass canister

794
00:30:09,909 --> 00:30:06,720
to install the final component for both

795
00:30:15,909 --> 00:30:12,230
ab2 will drive this final bolt to secure

796
00:30:21,110 --> 00:30:17,990
ev2 will drive the clamp bolts to

797
00:30:24,070 --> 00:30:21,120
prevent the mid strut from telescoping

798
00:30:26,149 --> 00:30:24,080
and eb1 will make sure that all of the

799
00:30:28,710 --> 00:30:26,159
blankets are in place to provide thermal

800
00:30:31,029 --> 00:30:28,720
protection and also make sure that pip

801
00:30:33,029 --> 00:30:31,039
pins are in place that provide grounding

802
00:30:35,590 --> 00:30:33,039
for the entire system

803
00:30:39,350 --> 00:30:35,600
once ev2 drives those final two bolts

804
00:30:43,990 --> 00:30:41,830
ev1 will get the foot restraint

805
00:30:46,950 --> 00:30:44,000
and stow that on the zenith portion of

806
00:30:50,149 --> 00:30:46,960
p6 to be in a good location for a later

807
00:30:52,070 --> 00:30:50,159
space walk

808
00:30:54,389 --> 00:30:52,080
will get the bag

809
00:30:56,310 --> 00:30:54,399
and translate back in board to the

810
00:30:58,149 --> 00:30:56,320
airlock

811
00:30:59,430 --> 00:30:58,159
and that bag will be stowed back where

812
00:31:01,269 --> 00:30:59,440
it came from

813
00:31:03,590 --> 00:31:01,279

on the zenith portion of the airlock but

814
00:31:07,190 --> 00:31:03,600
now with a jumper on top that can be

815
00:31:12,230 --> 00:31:10,310
ev2 will retrieve the bag

816
00:31:15,350 --> 00:31:12,240
and the width extender this is an

817
00:31:17,269 --> 00:31:15,360
extension for the foot restraint

818
00:31:18,389 --> 00:31:17,279
that extension will be stowed on the

819
00:31:21,830 --> 00:31:18,399
cedar cart

820
00:31:23,350 --> 00:31:21,840
to be used for a later eba

821
00:31:25,110 --> 00:31:23,360
eb2 will

822
00:31:27,669 --> 00:31:25,120
bring in the two safety tether anchor

823
00:31:29,669 --> 00:31:27,679
points attached to the end of eb-1

824
00:31:31,590 --> 00:31:29,679
safety tether

825
00:31:33,669 --> 00:31:31,600
and come back to the airlock put the

826
00:31:37,830 --> 00:31:33,679
bags in place

827
00:31:41,269 --> 00:31:37,840
db1 will then hand db2 out the weta bag

828
00:31:43,269 --> 00:31:41,279
weta stands for wbs external transceiver

829
00:31:49,190 --> 00:31:43,279
assembly this will be worked on later in

830
00:31:53,590 --> 00:31:51,110
okay we'll back with you um once the

831
00:31:54,710 --> 00:31:53,600
crew stows that bag externally we're

832
00:31:56,149 --> 00:31:54,720
going to send one of the crew members

833
00:31:57,350 --> 00:31:56,159
out to columbus where they're going to

834
00:31:59,029 --> 00:31:57,360
work on

835
00:32:00,710 --> 00:31:59,039
a connector that there are four

836
00:32:05,110 --> 00:32:00,720
connectors actually that they had

837
00:32:06,870 --> 00:32:05,120
trouble with on us eva 69 so on usc va69

838
00:32:08,310 --> 00:32:06,880

there's a power cable that runs from the

839
00:32:10,710 --> 00:32:08,320
bartolomeo

840
00:32:13,190 --> 00:32:10,720
science platform back to columbus they

841
00:32:14,549 --> 00:32:13,200
were able to partially engage two of the

842
00:32:16,470 --> 00:32:14,559
connectors and then they left two of

843
00:32:18,950 --> 00:32:16,480
them capped so now we're gonna go make

844
00:32:21,750 --> 00:32:18,960
an attempt to re-engage two of those

845
00:32:23,990 --> 00:32:21,760
connectors and get them fully mated so

846
00:32:25,750 --> 00:32:24,000
um the connectors uh consist of two

847
00:32:27,669 --> 00:32:25,760
halves so um

848
00:32:28,950 --> 00:32:27,679
i'll show you kind of both sides so one

849
00:32:29,750 --> 00:32:28,960
side

850
00:32:35,590 --> 00:32:29,760
has

851
00:32:37,269 --> 00:32:35,600
plugs that go into those receptacles so

852
00:32:38,310 --> 00:32:37,279
when when you mate the two connectors

853
00:32:39,750 --> 00:32:38,320
together

854
00:32:42,389 --> 00:32:39,760
you've got the two half shells and then

855
00:32:44,230 --> 00:32:42,399
you're able to push this veil forward

856
00:32:46,149 --> 00:32:44,240
that causes them to mate and make good

857
00:32:47,509 --> 00:32:46,159
electrical connection with those pins

858
00:32:49,909 --> 00:32:47,519
and sockets

859
00:32:52,190 --> 00:32:49,919
so what we actually were able to do on

860
00:32:54,950 --> 00:32:52,200
the on the columbus upgrades eva or

861
00:32:56,789 --> 00:32:54,960
uscva69 was get partially mated so we

862
00:32:58,149 --> 00:32:56,799
weren't sure exactly how far those pins

863
00:32:58,950 --> 00:32:58,159

were engaged

864
00:33:00,950 --> 00:32:58,960
so

865
00:33:03,190 --> 00:33:00,960
what we've seen from photos is that it

866
00:33:04,470 --> 00:33:03,200
looks like these sockets here i don't

867
00:33:06,870 --> 00:33:04,480
know how well you can see them but these

868
00:33:08,630 --> 00:33:06,880
sockets here have kind of closed up and

869
00:33:11,190 --> 00:33:08,640
they're not as open as we expected which

870
00:33:14,310 --> 00:33:11,200
we think may be inhibiting the pins from

871
00:33:16,230 --> 00:33:14,320
fully engaging so we've got an eda tool

872
00:33:17,909 --> 00:33:16,240
which is you know similar to a pin in

873
00:33:20,549 --> 00:33:17,919
shape and size that we're going to put

874
00:33:22,710 --> 00:33:20,559
in there in order to spread apart these

875
00:33:24,389 --> 00:33:22,720
tines in case they're stuck together in

876
00:33:26,630 --> 00:33:24,399
any way and so

877
00:33:29,190 --> 00:33:26,640
hopefully with that we'll be able to

878
00:33:31,830 --> 00:33:29,200
mate it again and uh and get a good mate

879
00:33:34,230 --> 00:33:31,840
of the p1 and p2 connector

880
00:33:35,909 --> 00:33:34,240
and um and be successful there so you

881
00:33:37,590 --> 00:33:35,919
know if it's something that we're going

882
00:33:39,269 --> 00:33:37,600
to go out there and try and if not we'll

883
00:33:40,710 --> 00:33:39,279
gather a lot of good information and be

884
00:33:41,590 --> 00:33:40,720
able to go out there again and get it

885
00:33:44,230 --> 00:33:41,600
done

886
00:33:49,110 --> 00:33:44,240
so we'll go back to the video and look

887
00:33:55,430 --> 00:33:52,470
ev1 will retrieve a foot restraint to

888
00:33:58,470 --> 00:33:55,440

help with the installation of the weta

889
00:34:00,870 --> 00:33:58,480
the weta is basically an antenna that

890
00:34:03,350 --> 00:34:00,880
provides coverage for the wireless video

891
00:34:05,430 --> 00:34:03,360
system on the crew members helmets once

892
00:34:08,310 --> 00:34:05,440
that foot restraint is set up ev1 will

893
00:34:10,310 --> 00:34:08,320
grab the bag and ingress there are three

894
00:34:12,700 --> 00:34:10,320
bolts that they need to drive to remove

895
00:34:13,990 --> 00:34:12,710
the failed weta

896
00:34:16,310 --> 00:34:14,000
[Music]

897
00:34:18,790 --> 00:34:16,320
stow that on the bag and install the new

898
00:34:21,750 --> 00:34:18,800
one i'm driving three more bolts to put

899
00:34:23,430 --> 00:34:21,760
it in place and make the connector

900
00:34:25,589 --> 00:34:23,440
once that's done it will be checked out

901
00:34:28,149 --> 00:34:25,599
verified that it works

902
00:34:29,669 --> 00:34:28,159
ev1 will head back to the air lock

903
00:34:34,310 --> 00:34:29,679
stow the bag

904
00:34:38,470 --> 00:34:37,109
eb2 will then head out to the cp9

905
00:34:40,550 --> 00:34:38,480
worksite

906
00:34:42,230 --> 00:34:40,560
where they will be routing an ethernet

907
00:34:43,430 --> 00:34:42,240
cable that runs out to one of our

908
00:34:45,510 --> 00:34:43,440
cameras

909
00:34:47,030 --> 00:34:45,520
once that camera is replaced this cable

910
00:34:50,230 --> 00:34:47,040
will be connected to it so that it can

911
00:34:52,149 --> 00:34:50,240
become a wi-fi hotspot they'll be using

912
00:34:54,310 --> 00:34:52,159
wire ties to hold it in place along

913
00:34:55,990 --> 00:34:54,320

handrail paths

914
00:34:57,589 --> 00:34:56,000
as you see here

915
00:35:00,230 --> 00:34:57,599
and that cable will be coiled at the

916
00:35:01,990 --> 00:35:00,240
base of the camera again to be connected

917
00:35:03,030 --> 00:35:02,000
once the new camera is installed in that

918
00:35:06,069 --> 00:35:03,040
location

919
00:35:08,790 --> 00:35:06,079
eb-2 will translate back to the airlock

920
00:35:11,920 --> 00:35:08,800
where both crew members will ingress and

921
00:35:15,510 --> 00:35:11,930
complete u.s eba 72.

922
00:35:17,109 --> 00:35:15,520
[Music]

923
00:35:20,550 --> 00:35:17,119
all right uh next i'd like to mention

924
00:35:22,069 --> 00:35:20,560
the crew for these edas uh ev1 will be

925
00:35:25,349 --> 00:35:22,079
kate rubins again

926
00:35:27,829 --> 00:35:25,359
and this time ed2 will be suichi naguchi

927
00:35:29,589 --> 00:35:27,839
uh kate will be ev1 wearing the red

928
00:35:31,750 --> 00:35:29,599
stripes and suicinagucci will have the

929
00:35:33,349 --> 00:35:31,760
suit with the white stripes this will be

930
00:35:35,190 --> 00:35:33,359
the fourth eva for both of these crew

931
00:35:37,349 --> 00:35:35,200
members and their first time working

932
00:35:39,910 --> 00:35:37,359
together outside on an eva

933
00:35:41,589 --> 00:35:39,920
but they have both seen

934
00:35:43,109 --> 00:35:41,599
at least most of these tasks in the

935
00:35:44,630 --> 00:35:43,119
neutral buoyancy lab so they're very

936
00:35:46,230 --> 00:35:44,640
familiar with them and

937
00:35:48,470 --> 00:35:46,240
as we mentioned they've been training

938
00:35:50,069 --> 00:35:48,480

already and are getting familiar with

939
00:35:51,589 --> 00:35:50,079
all the different tasks that that may be

940
00:35:53,829 --> 00:35:51,599
coming their way

941
00:35:55,430 --> 00:35:53,839
inside the vehicle mike hopkins and

942
00:35:57,190 --> 00:35:55,440
victor glover will be the ones getting

943
00:35:59,349 --> 00:35:57,200
them suited up and ready to go out the

944
00:36:02,069 --> 00:35:59,359
door and then again we'll have frank

945
00:36:03,829 --> 00:36:02,079
rubio on the ground as our ground iv

946
00:36:06,630 --> 00:36:03,839
they'll be walking the crew members

947
00:36:08,710 --> 00:36:06,640
through all of these individual tasks so

948
00:36:10,069 --> 00:36:08,720
you know again we we have some

949
00:36:11,589 --> 00:36:10,079
flexibility here as to what's going to

950
00:36:13,190 --> 00:36:11,599
happen with this eba but where we've got

951
00:36:15,349 --> 00:36:13,200
a number of tasks that are potted so

952
00:36:17,430 --> 00:36:15,359
we'll be ready to go see what happens on

953
00:36:18,870 --> 00:36:17,440
the first dva and accommodate with the

954
00:36:20,150 --> 00:36:18,880
second one so

955
00:36:22,150 --> 00:36:20,160
with that i'll turn it back over to you

956
00:36:24,069 --> 00:36:22,160
gary

957
00:36:26,150 --> 00:36:24,079
thank you art and thanks to our briefers

958
00:36:28,470 --> 00:36:26,160
for those initial remarks we'll now open

959
00:36:30,310 --> 00:36:28,480
it up for questions again if you're on

960
00:36:31,990 --> 00:36:30,320
our phone bridge please press star one

961
00:36:34,230 --> 00:36:32,000
to submit a question and once your name

962
00:36:36,150 --> 00:36:34,240
is called please state your name

963
00:36:37,990 --> 00:36:36,160

affiliation and to whom you'd like to

964
00:36:39,510 --> 00:36:38,000
direct your question if you find that

965
00:36:41,990 --> 00:36:39,520
your question has already been answered

966
00:36:45,190 --> 00:36:42,000
press star 2 to withdraw it on social

967
00:36:47,109 --> 00:36:45,200
media please use the hashtag ask nasa

968
00:36:51,589 --> 00:36:47,119
let's start on our phone bridge with

969
00:36:56,550 --> 00:36:54,630
yeah hi there my question is for kenny

970
00:36:59,190 --> 00:36:56,560
or anybody who feels that they can take

971
00:37:01,910 --> 00:36:59,200
it is the placement of the new solar

972
00:37:05,349 --> 00:37:01,920
arrays decided and is that decision set

973
00:37:08,470 --> 00:37:07,750
the placement of this new solar uh yes

974
00:37:17,510 --> 00:37:08,480
we

975
00:37:19,510 --> 00:37:17,520
to

976
00:37:22,150 --> 00:37:19,520
outfit them in certain places on station

977
00:37:24,150 --> 00:37:22,160
so yes at this point um we're putting

978
00:37:26,550 --> 00:37:24,160
them in the places where quite frankly

979
00:37:29,349 --> 00:37:26,560
the older older arrays are the ones that

980
00:37:30,790 --> 00:37:29,359
have been exposed uh the longest and so

981
00:37:31,510 --> 00:37:30,800
uh yes they

982
00:37:35,349 --> 00:37:31,520
the

983
00:37:51,030 --> 00:37:37,510
this next question comes from marsha

984
00:37:53,990 --> 00:37:52,310
marcia if you're asking your question

985
00:37:55,510 --> 00:37:54,000
we're not able to hear you we'll give

986
00:37:58,710 --> 00:37:55,520
you another couple

987
00:38:00,470 --> 00:37:58,720
okay are you army now you are on

988
00:38:01,990 --> 00:38:00,480

oh i'm sorry thank you a couple

989
00:38:03,670 --> 00:38:02,000
questions for kenny

990
00:38:06,230 --> 00:38:03,680
um i'm wondering when are the new solar

991
00:38:08,310 --> 00:38:06,240
panels launching and on what vehicle

992
00:38:10,230 --> 00:38:08,320
um why are you staging this first

993
00:38:12,069 --> 00:38:10,240
spacewalk on a sunday morning and i

994
00:38:14,630 --> 00:38:12,079
think it's even an extra hour earlier

995
00:38:16,390 --> 00:38:14,640
than usual a real early bird special

996
00:38:20,390 --> 00:38:16,400
what's the reasoning behind that is

997
00:38:22,870 --> 00:38:20,400
there any rush and lastly um when does

998
00:38:24,630 --> 00:38:22,880
the current crew one need to come back

999
00:38:26,069 --> 00:38:24,640
down to earth and is it a big deal if

1000
00:38:29,910 --> 00:38:26,079
they're not up there

1001
00:38:33,589 --> 00:38:29,920
to greet the crew to in person thank you

1002
00:38:35,750 --> 00:38:33,599
okay hi marcia um well uh

1003
00:38:37,990 --> 00:38:35,760
first of all um the new arrays will

1004
00:38:40,790 --> 00:38:38,000
start arriving on spacex 22 which is

1005
00:38:42,950 --> 00:38:40,800
coming up in early june um after that

1006
00:38:44,790 --> 00:38:42,960
we'll have a flight spacex 23 that will

1007
00:38:46,710 --> 00:38:44,800
not have any soil arrays and then we'll

1008
00:38:47,670 --> 00:38:46,720
pick up the next set uh after that in

1009
00:38:50,150 --> 00:38:47,680
the fall

1010
00:38:51,430 --> 00:38:50,160
so this year we're we're anticipating uh

1011
00:38:53,829 --> 00:38:51,440
you know starting the deployment of

1012
00:38:55,670 --> 00:38:53,839
these solar rays as early as june so

1013
00:38:57,270 --> 00:38:55,680

again very excited which is one reason

1014
00:38:59,190 --> 00:38:57,280
we want to go ahead and get these evas

1015
00:39:01,430 --> 00:38:59,200
in our rear view mirror and get to get

1016
00:39:03,670 --> 00:39:01,440
all the support structure in place

1017
00:39:05,750 --> 00:39:03,680
to be able to handle that so

1018
00:39:08,550 --> 00:39:05,760
uh as far as uh

1019
00:39:11,430 --> 00:39:08,560
um i don't know the exact date when the

1020
00:39:12,790 --> 00:39:11,440
when the crew needs to come home for uh

1021
00:39:15,589 --> 00:39:12,800
for a

1022
00:39:17,510 --> 00:39:15,599
crew one and and what i'm thinking in my

1023
00:39:19,910 --> 00:39:17,520
mind is when does that vehicle time out

1024
00:39:21,829 --> 00:39:19,920
if you will uh but uh we have we have

1025
00:39:23,349 --> 00:39:21,839
some runway on that uh we're still

1026
00:39:26,069 --> 00:39:23,359
trying to finalize the dates and working

1027
00:39:29,109 --> 00:39:26,079
with commercial crew program on on when

1028
00:39:31,270 --> 00:39:29,119
we uh when we would be ready to to send

1029
00:39:32,630 --> 00:39:31,280
that vehicle home but obviously those

1030
00:39:34,790 --> 00:39:32,640
are all the things that we're keeping in

1031
00:39:37,190 --> 00:39:34,800
mind this is you know what's the right

1032
00:39:39,670 --> 00:39:37,200
way to do a handover do we need to hand

1033
00:39:42,390 --> 00:39:39,680
over um and again trying to be

1034
00:39:45,030 --> 00:39:42,400
respectful of the limits of the vehicle

1035
00:39:48,870 --> 00:39:45,040
itself so anyway at this point uh our

1036
00:39:50,710 --> 00:39:48,880
crew 2 is currently scheduled for before

1037
00:39:52,630 --> 00:39:50,720
you know no earlier than is what we're

1038
00:39:53,670 --> 00:39:52,640

saying but uh

1039
00:39:55,910 --> 00:39:53,680
again

1040
00:39:58,470 --> 00:39:55,920
at this point the crew one day or return

1041
00:39:59,990 --> 00:39:58,480
hasn't been finalized so again those are

1042
00:40:01,829 --> 00:40:00,000
all the students that are that are still

1043
00:40:03,990 --> 00:40:01,839
in work and our friends from the

1044
00:40:05,430 --> 00:40:04,000
commercial crew program will continue to

1045
00:40:08,150 --> 00:40:05,440
evaluate that they're working with the

1046
00:40:09,829 --> 00:40:08,160
iss for both of us in the iss program

1047
00:40:12,230 --> 00:40:09,839
and when the time is right we'll uh

1048
00:40:13,589 --> 00:40:12,240
we'll we'll get those dates out and uh

1049
00:40:15,270 --> 00:40:13,599
once we understand that we've got a good

1050
00:40:18,069 --> 00:40:15,280
supportable plan

1051
00:40:20,069 --> 00:40:18,079
as far as uh the timing of the eva quite

1052
00:40:21,670 --> 00:40:20,079
quite frankly marcia it's not really a

1053
00:40:23,510 --> 00:40:21,680
monday through friday kind of program

1054
00:40:24,950 --> 00:40:23,520
and i think all these guys here with me

1055
00:40:26,630 --> 00:40:24,960
as you see them smiling would agree

1056
00:40:27,589 --> 00:40:26,640
that's the case

1057
00:40:30,069 --> 00:40:27,599
we

1058
00:40:32,309 --> 00:40:30,079
kind of try to do things when when the

1059
00:40:34,470 --> 00:40:32,319
time permits us to do them

1060
00:40:36,309 --> 00:40:34,480
again there's a basically a stack of

1061
00:40:37,270 --> 00:40:36,319
dominoes between now and the end of this

1062
00:40:39,670 --> 00:40:37,280
increment

1063
00:40:41,589 --> 00:40:39,680

and uh i've asked the team to to look at

1064
00:40:43,990 --> 00:40:41,599
it like it's a you know seven day a week

1065
00:40:46,069 --> 00:40:44,000
kind of kind of deal that we're in um

1066
00:40:48,150 --> 00:40:46,079
and and wherever the right time is to do

1067
00:40:49,670 --> 00:40:48,160
an eda we'll go through an eda

1068
00:40:51,349 --> 00:40:49,680
and it puts a little extra burden on the

1069
00:40:54,470 --> 00:40:51,359
planters because we have to continue to

1070
00:40:56,630 --> 00:40:54,480
maintain you know good uh good true work

1071
00:40:58,309 --> 00:40:56,640
rest cycle that's part of our ongoing

1072
00:41:00,230 --> 00:40:58,319
job day in day out make sure we've got a

1073
00:41:02,230 --> 00:41:00,240
good refreshed cruise and ready to

1074
00:41:04,630 --> 00:41:02,240
respond to anything that might go on at

1075
00:41:06,470 --> 00:41:04,640
any particular time of day on station

1076
00:41:08,630 --> 00:41:06,480
and so so that's part of an ongoing

1077
00:41:10,150 --> 00:41:08,640
challenge but uh but really we don't

1078
00:41:11,829 --> 00:41:10,160
constrain ourselves till monday through

1079
00:41:14,230 --> 00:41:11,839
friday operation in fact a lot of our

1080
00:41:17,349 --> 00:41:14,240
science you know it's time

1081
00:41:18,710 --> 00:41:17,359
time constrained science and so uh

1082
00:41:20,790 --> 00:41:18,720
it's not out of the realm for us to be

1083
00:41:23,589 --> 00:41:20,800
working science on on saturday and

1084
00:41:25,270 --> 00:41:23,599
sunday as well so so that's uh

1085
00:41:26,550 --> 00:41:25,280
that's how we got the sunday eva it's

1086
00:41:30,230 --> 00:41:26,560
just basically where it worked out

1087
00:41:35,670 --> 00:41:32,390
next question is from bill harwood from

1088
00:41:38,550 --> 00:41:35,680

cbs news hey thanks just making sure you

1089
00:41:40,470 --> 00:41:38,560
can hear me okay we hear you fine bill

1090
00:41:42,790 --> 00:41:40,480
thanks um i got a couple of questions

1091
00:41:45,109 --> 00:41:42,800
here one one eva related and then the

1092
00:41:46,870 --> 00:41:45,119
others for kenny um

1093
00:41:48,069 --> 00:41:46,880
when do you hope to begin and complete

1094
00:41:50,230 --> 00:41:48,079
the installation in other words when

1095
00:41:51,829 --> 00:41:50,240
would you hope under current schedules

1096
00:41:54,950 --> 00:41:51,839
to finish the last

1097
00:41:56,790 --> 00:41:54,960
actual install of an irosa panel

1098
00:41:57,589 --> 00:41:56,800
i was curious why three and not four i

1099
00:41:59,109 --> 00:41:57,599
mean

1100
00:42:01,190 --> 00:41:59,119
more power is better but then i guess

1101
00:42:03,430 --> 00:42:01,200
that's lifetime of program involved

1102
00:42:04,870 --> 00:42:03,440
there and can somebody compare the power

1103
00:42:06,630 --> 00:42:04,880
before and after

1104
00:42:07,990 --> 00:42:06,640
uh when you add these guys

1105
00:42:17,430 --> 00:42:08,000
and then kenny i got to follow up for

1106
00:42:21,349 --> 00:42:19,589
and kenny i'll let you take those uh

1107
00:42:22,550 --> 00:42:21,359
power questions

1108
00:42:25,109 --> 00:42:22,560
i didn't know if you guys wanted to jump

1109
00:42:27,270 --> 00:42:25,119
on that or not so okay uh yeah we're

1110
00:42:29,510 --> 00:42:27,280
we're gonna be launching solar rays uh

1111
00:42:32,870 --> 00:42:29,520
you know over the end of next year uh

1112
00:42:34,309 --> 00:42:32,880
bill again trying to find out that we'll

1113
00:42:36,470 --> 00:42:34,319

take that we'll take the power i think

1114
00:42:39,349 --> 00:42:36,480
from about 160

1115
00:42:41,670 --> 00:42:39,359
kilowatts up to about 215 kilowatts

1116
00:42:42,710 --> 00:42:41,680
so as we look forward in the program and

1117
00:42:44,470 --> 00:42:42,720
look at

1118
00:42:46,470 --> 00:42:44,480
the amount of users that were they're

1119
00:42:48,470 --> 00:42:46,480
coming on board that quite frankly are

1120
00:42:50,309 --> 00:42:48,480
are uh you know looking for power that

1121
00:42:53,270 --> 00:42:50,319
that we didn't even dream of back in in

1122
00:42:55,270 --> 00:42:53,280
the mid 90s um and and the technology

1123
00:42:57,990 --> 00:42:55,280
really has gotten to the point in the

1124
00:42:59,510 --> 00:42:58,000
power generation that that uh we can do

1125
00:43:01,430 --> 00:42:59,520
something like these these roll out

1126
00:43:03,270 --> 00:43:01,440
solar arrays and uh you know they're not

1127
00:43:05,270 --> 00:43:03,280
as big as the ones that we previously

1128
00:43:07,750 --> 00:43:05,280
deployed and yet we can we can get even

1129
00:43:10,230 --> 00:43:07,760
more power out of them so uh anyway it

1130
00:43:12,470 --> 00:43:10,240
just uh it just made good sense uh with

1131
00:43:14,790 --> 00:43:12,480
regard to the program and and

1132
00:43:16,390 --> 00:43:14,800
trying to be a accommodate as much as we

1133
00:43:18,630 --> 00:43:16,400
can all the different users that are

1134
00:43:20,069 --> 00:43:18,640
coming on board and so so anyway uh

1135
00:43:21,589 --> 00:43:20,079
we'll get started this year deploying

1136
00:43:22,630 --> 00:43:21,599
solar rays and we'll be doing it in the

1137
00:43:25,349 --> 00:43:22,640
next year

1138
00:43:26,870 --> 00:43:25,359

um as uh you know as these as these

1139
00:43:29,510 --> 00:43:26,880
flights are

1140
00:43:31,109 --> 00:43:29,520
you know fill out the manifest um

1141
00:43:33,190 --> 00:43:31,119
next year

1142
00:43:35,589 --> 00:43:33,200
um so anyway that's that's that's the

1143
00:43:39,030 --> 00:43:35,599
thinking that's and that's uh that's the

1144
00:43:40,470 --> 00:43:39,040
increase in power that we're expecting

1145
00:43:43,270 --> 00:43:40,480
kenny if i could just follow up one more

1146
00:43:44,870 --> 00:43:43,280
for you um looking ahead to the the

1147
00:43:47,349 --> 00:43:44,880
soyuz cruise station when do you expect

1148
00:43:49,430 --> 00:43:47,359
decision on a u.s astronaut

1149
00:43:50,630 --> 00:43:49,440
riding up on the soyuz i was wondering

1150
00:43:52,870 --> 00:43:50,640
if you could tell us a little about the

1151
00:43:55,109 --> 00:43:52,880
arrangements they seem a little

1152
00:43:56,550 --> 00:43:55,119
hazy to some of us on the outside and

1153
00:43:58,790 --> 00:43:56,560
and who the candidate is i mean i know

1154
00:43:59,990 --> 00:43:58,800
you guys obviously know who that is but

1155
00:44:02,390 --> 00:44:00,000
uh if you could tell us anything about

1156
00:44:05,030 --> 00:44:02,400
that i'd sure appreciate it thanks

1157
00:44:06,550 --> 00:44:05,040
yeah bill uh unfortunately i'm not in a

1158
00:44:09,670 --> 00:44:06,560
position to be able to clear up your

1159
00:44:11,510 --> 00:44:09,680
haziness um as it relates to the seed

1160
00:44:13,510 --> 00:44:11,520
you know that's a um from our

1161
00:44:16,069 --> 00:44:13,520
perspective that's an active procurement

1162
00:44:17,829 --> 00:44:16,079
right now and and uh really just not in

1163
00:44:19,270 --> 00:44:17,839

a position where we can we can talk

1164
00:44:20,710 --> 00:44:19,280
about it you know there's a synopsis out

1165
00:44:23,510 --> 00:44:20,720
there on the street everybody's seeing

1166
00:44:25,349 --> 00:44:23,520
it and by definition that puts us in

1167
00:44:27,750 --> 00:44:25,359
in the realm of an active procurement

1168
00:44:30,150 --> 00:44:27,760
that quite frankly we just can't you

1169
00:44:31,910 --> 00:44:30,160
know talk about at this point

1170
00:44:33,589 --> 00:44:31,920
for a lot of details

1171
00:44:34,870 --> 00:44:33,599
but but as soon as uh you know as soon

1172
00:44:36,230 --> 00:44:34,880
as we get on the back side of that

1173
00:44:38,390 --> 00:44:36,240
certainly we're going to make that

1174
00:44:41,430 --> 00:44:38,400
information available to

1175
00:44:46,470 --> 00:44:43,829
next question comes from mark caro from

1176
00:44:48,390 --> 00:44:46,480
aviation and space tech

1177
00:44:51,510 --> 00:44:48,400
yes thank you i'm going to follow up on

1178
00:44:52,550 --> 00:44:51,520
bill harwood's question about the roses

1179
00:44:57,270 --> 00:44:52,560
can you

1180
00:44:59,670 --> 00:44:57,280
this point are going to be augmented

1181
00:45:02,470 --> 00:44:59,680
with those and maybe it's just the

1182
00:45:07,030 --> 00:45:02,480
oldest solar panels or solar modules but

1183
00:45:12,150 --> 00:45:09,750
marcos if you're able to answer that one

1184
00:45:13,430 --> 00:45:12,160
all right at least not about six of them

1185
00:45:15,430 --> 00:45:13,440
i think we're planning for six out of

1186
00:45:17,750 --> 00:45:15,440
the total eight arrays i can tell you

1187
00:45:20,390 --> 00:45:17,760
right now at least for the the first tvs

1188
00:45:21,990 --> 00:45:20,400

we're looking at pcb and 4b i do know

1189
00:45:23,349 --> 00:45:22,000
that uh some of the ebook channels are

1190
00:45:25,910 --> 00:45:23,359
going to get some of them as well

1191
00:45:29,430 --> 00:45:25,920
including 3a and 4a

1192
00:45:31,030 --> 00:45:29,440
i'm a little bit hazy on the other two

1193
00:45:32,950 --> 00:45:31,040
but i do know that at least six of the

1194
00:45:34,309 --> 00:45:32,960
eight or eight are going to get the new

1195
00:45:35,510 --> 00:45:34,319
upgrades for sure throughout the next

1196
00:45:37,109 --> 00:45:35,520
year

1197
00:45:38,630 --> 00:45:37,119
that's that's the number that we're on

1198
00:45:40,230 --> 00:45:38,640
right now at six of eight we'll have

1199
00:45:43,109 --> 00:45:40,240
enough that's what we've

1200
00:45:44,150 --> 00:45:43,119
that's what we've procured um and again

1201
00:45:45,589 --> 00:45:44,160
uh

1202
00:45:47,430 --> 00:45:45,599
same thing mark we're going to we're

1203
00:45:49,990 --> 00:45:47,440
going to target the arrays that that

1204
00:45:52,950 --> 00:45:50,000
have been up there the longest and have

1205
00:45:55,349 --> 00:45:52,960
had the most exposure

1206
00:45:58,390 --> 00:45:55,359
will the additional power give you some

1207
00:46:01,190 --> 00:45:58,400
new capability in terms of um

1208
00:46:03,430 --> 00:46:01,200
something specific on the space station

1209
00:46:05,270 --> 00:46:03,440
that's not there now that might be

1210
00:46:07,589 --> 00:46:05,280
oriented towards the

1211
00:46:09,670 --> 00:46:07,599
future deep space or is this kind of

1212
00:46:10,870 --> 00:46:09,680
just going to be a capability you have

1213
00:46:13,430 --> 00:46:10,880

and you can

1214
00:46:15,750 --> 00:46:13,440
uh kind of figure out who gets to use it

1215
00:46:17,829 --> 00:46:15,760
as you go

1216
00:46:19,109 --> 00:46:17,839
that's correct you're right on mark uh

1217
00:46:21,430 --> 00:46:19,119
at this point

1218
00:46:24,470 --> 00:46:21,440
it's more of a robustness

1219
00:46:27,750 --> 00:46:25,829
increase

1220
00:46:29,829 --> 00:46:27,760
again what we're seeing is we're seeing

1221
00:46:31,589 --> 00:46:29,839
more and more requests for power

1222
00:46:33,910 --> 00:46:31,599
especially as we're deploying from the

1223
00:46:36,950 --> 00:46:33,920
internal platform again talking earlier

1224
00:46:38,150 --> 00:46:36,960
about the bartolomeo you know there are

1225
00:46:39,430 --> 00:46:38,160
users that are going to be going on to

1226
00:46:40,950 --> 00:46:39,440
that platform they're going to need

1227
00:46:43,589 --> 00:46:40,960
power these are things that when we

1228
00:46:46,150 --> 00:46:43,599
started station and scoped

1229
00:46:47,510 --> 00:46:46,160
killed the requirements for stations

1230
00:46:49,589 --> 00:46:47,520
that we hadn't necessarily thought about

1231
00:46:51,750 --> 00:46:49,599
at the time so uh

1232
00:46:53,270 --> 00:46:51,760
i think it's more of a robustness

1233
00:46:55,910 --> 00:46:53,280
increase that we're going to experience

1234
00:46:57,030 --> 00:46:55,920
and and again that'll allow us to

1235
00:47:01,750 --> 00:46:57,040
accommodate

1236
00:47:07,349 --> 00:47:04,069
next question is from hanaki waitering

1237
00:47:11,430 --> 00:47:09,270
hi this is monica from space.com thank

1238
00:47:12,950 --> 00:47:11,440

you for taking my questions i think this

1239
00:47:14,550 --> 00:47:12,960
is probably for chris

1240
00:47:17,030 --> 00:47:14,560
um so i read that the astronauts might

1241
00:47:18,870 --> 00:47:17,040
be installing a stiffener on the quest

1242
00:47:20,710 --> 00:47:18,880
airlock thermal cover and i'm wondering

1243
00:47:22,790 --> 00:47:20,720
is that still on the docket for the

1244
00:47:24,710 --> 00:47:22,800
march 5th spacewalk and also can you

1245
00:47:27,030 --> 00:47:24,720
talk a little bit about what exactly the

1246
00:47:29,910 --> 00:47:27,040
problem was there and why this type of a

1247
00:47:32,230 --> 00:47:29,920
fix is necessary thank you

1248
00:47:34,790 --> 00:47:32,240
sure i'll take that question uh we did

1249
00:47:37,109 --> 00:47:34,800
indeed plan to install a stiffener which

1250
00:47:39,910 --> 00:47:37,119
is essentially a metal ring

1251
00:47:41,190 --> 00:47:39,920
on the uh the airlock hatch cover

1252
00:47:42,950 --> 00:47:41,200
actually we have a graphic for that if

1253
00:47:44,870 --> 00:47:42,960
the producer wants to pull that up

1254
00:47:47,670 --> 00:47:44,880
so we have a kevlar you can see in the

1255
00:47:49,910 --> 00:47:47,680
middle of the the graphic there a kevlar

1256
00:47:51,910 --> 00:47:49,920
thermal cover that covers the airlock

1257
00:47:53,750 --> 00:47:51,920
hatch the metal hatch underneath it and

1258
00:47:55,990 --> 00:47:53,760
it's designed to keep the hatch at a

1259
00:47:58,069 --> 00:47:56,000
nice cozy temperature so the mechanism

1260
00:48:00,230 --> 00:47:58,079
works fine but what we've seen over the

1261
00:48:01,510 --> 00:48:00,240
years is the edges of that uh

1262
00:48:03,990 --> 00:48:01,520
flexible

1263
00:48:05,589 --> 00:48:04,000

thermal cover have tended to warp and we

1264
00:48:07,910 --> 00:48:05,599
call it potato chipping because it

1265
00:48:08,630 --> 00:48:07,920
doesn't quite seal well enough so we

1266
00:48:09,990 --> 00:48:08,640
have to

1267
00:48:11,910 --> 00:48:10,000
install the metal ring that's on the

1268
00:48:14,150 --> 00:48:11,920
left side of the graphic there to sort

1269
00:48:16,470 --> 00:48:14,160
of you know force that that thermal

1270
00:48:19,510 --> 00:48:16,480
cover to be a nice flat shape so that it

1271
00:48:21,430 --> 00:48:19,520
does its job better um so but right now

1272
00:48:23,589 --> 00:48:21,440
with the way the timeline is laid out

1273
00:48:25,829 --> 00:48:23,599
for the second eba we will not have time

1274
00:48:29,109 --> 00:48:25,839
to do this task um we're going to go

1275
00:48:30,710 --> 00:48:29,119
ahead and prioritize uh the columbus

1276
00:48:33,510 --> 00:48:30,720
electrical connector troubleshooting

1277
00:48:35,990 --> 00:48:33,520
ahead of this so um we'll just go ahead

1278
00:48:38,870 --> 00:48:36,000
and plan to do this thermal cover uh

1279
00:48:40,950 --> 00:48:38,880
stiffener install on a later dba or if

1280
00:48:43,750 --> 00:48:40,960
we get lucky and get really far ahead on

1281
00:48:45,510 --> 00:48:43,760
on you know the first eva that marcos

1282
00:48:47,190 --> 00:48:45,520
and his team are going to perform then

1283
00:48:49,109 --> 00:48:47,200
uh then then we could potentially see

1284
00:48:51,030 --> 00:48:49,119
this task getting added back onto the

1285
00:48:52,630 --> 00:48:51,040
timeline for the second eva so we'll

1286
00:48:53,829 --> 00:48:52,640
just have to see the crew has already

1287
00:48:55,510 --> 00:48:53,839
the crew's already received their

1288
00:48:57,750 --> 00:48:55,520

training material on this we've got the

1289
00:48:59,109 --> 00:48:57,760
hardware ready to go so uh

1290
00:49:02,549 --> 00:48:59,119
you know we could see this get added to

1291
00:49:05,829 --> 00:49:04,470
we'll now move on to social media

1292
00:49:07,670 --> 00:49:05,839
questions again if you're on our phone

1293
00:49:09,510 --> 00:49:07,680
bridge press star one to add your name

1294
00:49:11,510 --> 00:49:09,520
to our cue back on social media using

1295
00:49:13,990 --> 00:49:11,520
the hashtag ask nasa this one comes from

1296
00:49:16,309 --> 00:49:14,000
isaiah on twitter uh this one's for art

1297
00:49:19,109 --> 00:49:16,319
what types of tools can we expect to see

1298
00:49:21,030 --> 00:49:19,119
on these spacewalks

1299
00:49:23,430 --> 00:49:21,040
okay that's a great question on the

1300
00:49:24,790 --> 00:49:23,440
first spacewalk for building the mod kit

1301
00:49:26,950 --> 00:49:24,800
you're going to see a lot of the pistol

1302
00:49:29,510 --> 00:49:26,960
grip tools so it's essentially a really

1303
00:49:31,430 --> 00:49:29,520
fancy cordless drill it's got a digital

1304
00:49:33,349 --> 00:49:31,440
readout that can tell you the torques

1305
00:49:35,349 --> 00:49:33,359
and turns on each bolt and so there's

1306
00:49:38,710 --> 00:49:35,359
various settings that allow you to

1307
00:49:40,790 --> 00:49:38,720
program it to the desired torque so

1308
00:49:42,870 --> 00:49:40,800
i think that's the big one that you're

1309
00:49:46,390 --> 00:49:42,880
going to see a lot of

1310
00:49:48,390 --> 00:49:46,400
let's see uh so going back to um the

1311
00:49:50,870 --> 00:49:48,400
vent tool and vent tool extender i think

1312
00:49:53,910 --> 00:49:50,880
that's a pretty important tool um we we

1313
00:49:55,910 --> 00:49:53,920

touched on that one earlier

1314
00:49:56,710 --> 00:49:55,920
i think i think those are the main ones

1315
00:49:59,109 --> 00:49:56,720
you know

1316
00:50:00,390 --> 00:49:59,119
not real tool heavy on these ebas uh

1317
00:50:02,069 --> 00:50:00,400
most of these most of things are going

1318
00:50:06,069 --> 00:50:02,079
to be able to be done with the crew's

1319
00:50:07,910 --> 00:50:06,079
hands um before routing the cp8 and cp9

1320
00:50:09,750 --> 00:50:07,920
cables you know we have what's called a

1321
00:50:11,349 --> 00:50:09,760
real bag so this is kind of like a

1322
00:50:13,109 --> 00:50:11,359
garden hose if you will you know you

1323
00:50:14,870 --> 00:50:13,119
have your garden hose that's wrapped up

1324
00:50:16,870 --> 00:50:14,880
on a reel the crew will have that

1325
00:50:18,470 --> 00:50:16,880
attached to them and then that cable

1326
00:50:20,150 --> 00:50:18,480
will deploy out

1327
00:50:21,990 --> 00:50:20,160
as they head out to the work site and

1328
00:50:24,309 --> 00:50:22,000
tie it down with wire ties along the way

1329
00:50:28,390 --> 00:50:24,319
so i think those are the major tools

1330
00:50:33,270 --> 00:50:31,109
next question comes from uh rohan on

1331
00:50:35,589 --> 00:50:33,280
twitter he's asking with one of the

1332
00:50:37,990 --> 00:50:35,599
astronauts performing two of the evas

1333
00:50:41,670 --> 00:50:38,000
how is rest time factored into spacewalk

1334
00:50:42,390 --> 00:50:41,680
planning uh this one could go to chris

1335
00:50:44,870 --> 00:50:42,400
sure

1336
00:50:46,790 --> 00:50:44,880
we actually plan recovery time uh after

1337
00:50:47,990 --> 00:50:46,800
the the eva so that gives the crew a

1338
00:50:49,349 --> 00:50:48,000

little bit of time

1339
00:50:51,589 --> 00:50:49,359
about half a day off to be able to

1340
00:50:53,109 --> 00:50:51,599
recover from the eva and then the day

1341
00:50:54,950 --> 00:50:53,119
before they go out we also plan about

1342
00:50:56,230 --> 00:50:54,960
half a day's worth of work so again it's

1343
00:50:58,069 --> 00:50:56,240
sort of a light day that gives them a

1344
00:50:59,190 --> 00:50:58,079
chance to rest up to make sure they're

1345
00:51:00,549 --> 00:50:59,200
in really good shape before they head

1346
00:51:02,230 --> 00:51:00,559
out the door for the

1347
00:51:05,349 --> 00:51:02,240
very physically intensive task which is

1348
00:51:10,069 --> 00:51:07,349
okay and we have one more on twitter

1349
00:51:12,950 --> 00:51:10,079
this one's from jonathan he's asking uh

1350
00:51:15,349 --> 00:51:12,960
which emu's uh will be used for reuben's

1351
00:51:18,549 --> 00:51:15,359
glover and the gucci respectively art i

1352
00:51:22,790 --> 00:51:20,069
yeah i'd have to go back and look at my

1353
00:51:25,109 --> 00:51:22,800
data i know 3015 is the the emu that

1354
00:51:26,549 --> 00:51:25,119
kate's going to be using and uh i'd have

1355
00:51:27,750 --> 00:51:26,559
to go back and look at the numbers on

1356
00:51:29,190 --> 00:51:27,760
the other one i didn't bring that chart

1357
00:51:32,710 --> 00:51:29,200
with me but i i can get you that

1358
00:51:36,390 --> 00:51:34,230
and that wraps up our questions on the

1359
00:51:38,630 --> 00:51:36,400
phone bridge and on social media thanks

1360
00:51:40,069 --> 00:51:38,640
to all who submitted questions today and

1361
00:51:42,309 --> 00:51:40,079
thanks to our briefers for taking the

1362
00:51:44,309 --> 00:51:42,319
time to discuss the upcoming spacewalks

1363
00:51:47,670 --> 00:51:44,319

nasa tv coverage will begin at different

1364
00:51:50,390 --> 00:51:47,680
times for each of the evas on february

1365
00:51:53,030 --> 00:51:50,400
28th coverage will begin at 3 30 a.m

1366
00:51:53,750 --> 00:51:53,040
central 4 30 a.m eastern for an eva

1367
00:51:56,710 --> 00:51:53,760
start

1368
00:51:59,910 --> 00:51:56,720
time at 5 00 a.m central 6 a.m eastern

1369
00:52:02,790 --> 00:51:59,920
on march 5th we'll expect this uh

1370
00:52:05,829 --> 00:52:02,800
coverage to start at 4 30 a.m central 5

1371
00:52:08,790 --> 00:52:05,839
30 a.m eastern for an eva start time at

1372
00:52:10,309 --> 00:52:08,800
6 00 a.m central 7 a.m eastern thanks

1373
00:52:33,300 --> 00:52:10,319
again for joining us that will wrap up