



1
00:00:13,190 --> 00:00:09,310

[Music]

2
00:00:36,530 --> 00:00:14,749

to complete upgrades to the Columbus

3
00:00:40,610 --> 00:00:38,869

you're looking live into the quest

4
00:00:41,569 --> 00:00:40,620

airlock of the International Space

5
00:00:44,450 --> 00:00:41,579

Station

6
00:00:46,190 --> 00:00:44,460

where NASA astronaut Mike Hopkins and

7
00:00:48,770 --> 00:00:46,200

Victor Glover are preparing for today's

8
00:00:50,869 --> 00:00:48,780

spacewalk

9
00:00:59,029 --> 00:00:50,879

the crew is running about 50 minutes

10
00:01:03,349 --> 00:01:02,029

and as you can see here NASA astronaut

11
00:01:06,890 --> 00:01:03,359

in the center of the screen Victor

12
00:01:09,710 --> 00:01:06,900

Glover is getting his safer installed by

13
00:01:11,990 --> 00:01:09,720

NASA astronaut Kate Rubens and jaxa or

14

00:01:14,030 --> 00:01:12,000

Japanese Aerospace Exploration Agency

15

00:01:18,770 --> 00:01:14,040

suichi naguchi

16

00:01:24,230 --> 00:01:21,890

the safer or simplified aid for Eva

17

00:01:25,429 --> 00:01:24,240

rescue is essentially a jet pack that

18

00:01:27,830 --> 00:01:25,439

the astronauts wear when they perform

19

00:01:30,109 --> 00:01:27,840

spacewalks

20

00:01:32,090 --> 00:01:30,119

safer is worn as a precautionary measure

21

00:01:33,950 --> 00:01:32,100

in the unlikely event that an astronaut

22

00:01:40,310 --> 00:01:33,960

were to become untethered from the space

23

00:01:45,350 --> 00:01:42,950

NASA astronaut Mike Hopkins who you can

24

00:01:47,749 --> 00:01:45,360

see above Victor in the suit with the

25

00:01:49,249 --> 00:01:47,759

red stripes already has his safer on and

26
00:02:01,630 --> 00:01:49,259
he's in the second portion of the

27
00:02:05,870 --> 00:02:03,889
this will be Victor Glover's first

28
00:02:08,089 --> 00:02:05,880
spacewalk of his career after arriving

29
00:02:13,809 --> 00:02:08,099
aboard the SpaceX crew Dragon resilience

30
00:02:18,229 --> 00:02:16,369
during today's spacewalk Hopkins and

31
00:02:20,630 --> 00:02:18,239
Glover will focus on completing cable

32
00:02:23,270 --> 00:02:20,640
and antenna rigging for the bartolomeo

33
00:02:26,990 --> 00:02:23,280
science payloads platform outside of the

34
00:02:29,630 --> 00:02:27,000
European space agency Columbus module

35
00:02:31,729 --> 00:02:29,640
the duo will also configure a Ka band

36
00:02:33,830 --> 00:02:31,739
terminal that will enable an independent

37
00:02:37,790 --> 00:02:33,840
high bandwidth communication link to

38
00:02:41,809 --> 00:02:39,830

after completing these upgrades on the

39

00:02:44,330 --> 00:02:41,819

Columbus module Hopkins and Glover will

40

00:02:46,430 --> 00:02:44,340

remove a grapple fixture bracket on the

41

00:02:48,110 --> 00:02:46,440

farport truss of the station in

42

00:03:10,149 --> 00:02:48,120

preparation for future power system

43

00:03:15,530 --> 00:03:13,130

based on updated guidance teams in

44

00:03:17,390 --> 00:03:15,540

Mission Control will now wear masks at

45

00:03:19,670 --> 00:03:17,400

all times while on console and

46

00:03:22,130 --> 00:03:19,680

supporting Mission operations except for

47

00:04:12,890 --> 00:03:22,140

brief periods of time to eat or drink as

48

00:04:18,110 --> 00:04:15,470

in preparation for today's spacewalk

49

00:04:20,749 --> 00:04:18,120

spacewalk officer Sarah Corona narrated

50

00:04:26,050 --> 00:04:20,759

an overview of the spacewalk today let's

51
00:04:32,510 --> 00:04:29,270
two Seva call upgrades is going to begin

52
00:04:33,409 --> 00:04:32,520
with ev1 egressing the quest air lock

53
00:04:35,510 --> 00:04:33,419
first

54
00:04:38,450 --> 00:04:35,520
the crew is going to be bringing out

55
00:04:41,810 --> 00:04:38,460
with them the polka which stands for the

56
00:04:44,450 --> 00:04:41,820
Columbus Ka band antenna this Hardware

57
00:04:46,790 --> 00:04:44,460
is going to be installed on the Columbus

58
00:04:49,370 --> 00:04:46,800
module during its EBA

59
00:04:51,530 --> 00:04:49,380
ev1 is going to translate out to the

60
00:04:54,110 --> 00:04:51,540
Columbus module via the three inflation

61
00:04:56,870 --> 00:04:54,120
path you can see here

62
00:04:59,330 --> 00:04:56,880
and we'll need to set up a few things at

63
00:05:02,450 --> 00:04:59,340

the work site before that installation

64

00:05:05,629 --> 00:05:02,460

eb2 is going to translate to an external

65

00:05:09,050 --> 00:05:05,639

platform called esp2 where he is going

66

00:05:11,450 --> 00:05:09,060

to be ingressing the ssrms the robotic

67

00:05:13,610 --> 00:05:11,460

arm the robotic arm is going to be

68

00:05:16,610 --> 00:05:13,620

taking him over to the Columbus work

69

00:05:18,290 --> 00:05:16,620

site with the Coca

70

00:05:20,930 --> 00:05:18,300

so the crew members are going to meet up

71

00:05:25,430 --> 00:05:20,940

at the work site they need to remove

72

00:05:28,129 --> 00:05:25,440

bolts that are on the Columbus panels

73

00:05:30,770 --> 00:05:28,139

where those bolts are removed is where

74

00:05:33,350 --> 00:05:30,780

the cocoa is going to be installed so

75

00:05:37,850 --> 00:05:33,360

they work together securing coca to the

76
00:05:43,310 --> 00:05:41,870
once it is secure pb2 is going to Route

77
00:05:45,469 --> 00:05:43,320
the cabling

78
00:05:48,230 --> 00:05:45,479
for that Coca

79
00:05:51,529 --> 00:05:48,240
and plug it into the Columbus module

80
00:05:54,050 --> 00:05:51,539
meanwhile ev1 is going to head to the

81
00:05:57,469 --> 00:05:54,060
bartolomeo platform

82
00:06:00,950 --> 00:05:57,479
so bartolomeo is an external platform in

83
00:06:02,930 --> 00:06:00,960
which payloads can be installed

84
00:06:05,270 --> 00:06:02,940
there are clamps

85
00:06:06,830 --> 00:06:05,280
that need to be opened up in order to

86
00:06:09,110 --> 00:06:06,840
remove the cabling

87
00:06:11,870 --> 00:06:09,120
that needs to get routed in order to

88
00:06:13,790 --> 00:06:11,880

activate the Bartle Mayo platform so the

89

00:06:16,370 --> 00:06:13,800

crew works together to get those cables

90

00:06:19,490 --> 00:06:16,380

routed and installed

91

00:06:22,670 --> 00:06:19,500

pv1 also needs to remove another set of

92

00:06:24,529 --> 00:06:22,680

cabling that is going to hook up an

93

00:06:26,270 --> 00:06:24,539

antenna for a bottle of mayo which you

94

00:06:28,969 --> 00:06:26,280

can see here

95

00:06:31,070 --> 00:06:28,979

when Sparta lomeo is complete the crew

96

00:06:33,350 --> 00:06:31,080

members are going to go back to the Coca

97

00:06:35,629 --> 00:06:33,360

and remove a cover

98

00:06:37,990 --> 00:06:35,639

so the cover was installed in order to

99

00:06:39,350 --> 00:06:38,000

protect the antenna during installation

100

00:06:41,930 --> 00:06:39,360

[Music]

101
00:06:45,890 --> 00:06:41,940
since it's no longer needed we are going

102
00:06:47,320 --> 00:06:45,900
to have ev2 jettison back cover while

103
00:06:56,150 --> 00:06:47,330
he's on the ssrms

104
00:06:58,730 --> 00:06:56,160
[Music]

105
00:07:01,010 --> 00:06:58,740
and once the activities are complete

106
00:07:02,330 --> 00:07:01,020
at the Columbus work site both crew

107
00:07:03,529 --> 00:07:02,340
members meet back up at the quest

108
00:07:06,830 --> 00:07:03,539
airlock

109
00:07:09,409 --> 00:07:06,840
they reconfigure some bags

110
00:07:12,110 --> 00:07:09,419
to take out with them for their next

111
00:07:14,510 --> 00:07:12,120
task which is going to be out at the

112
00:07:17,089 --> 00:07:14,520
portmost section of the space station

113
00:07:18,110 --> 00:07:17,099

trust they're going to be heading out to

114

00:07:21,230 --> 00:07:18,120

P6

115

00:07:22,850 --> 00:07:21,240

you can see the translation path here

116

00:07:25,430 --> 00:07:22,860

and the crew members are going to be

117

00:07:28,670 --> 00:07:25,440

removing an H fixture so this each

118

00:07:30,650 --> 00:07:28,680

fixture is not needed on the solar

119

00:07:33,350 --> 00:07:30,660

arrays so we're going to remove that

120

00:07:35,270 --> 00:07:33,360

edge mixture

121

00:07:36,830 --> 00:07:35,280

both of them are going to be removing

122

00:07:39,650 --> 00:07:36,840

one of them

123

00:07:42,589 --> 00:07:39,660

and this plate is going to be removed

124

00:07:45,830 --> 00:07:42,599

because it's going to be where a future

125

00:07:46,600 --> 00:07:45,840

upgrade of the solar rays is going to be

126
00:07:48,110 --> 00:07:46,610
installed

127
00:07:51,110 --> 00:07:48,120
[Music]

128
00:07:55,969 --> 00:07:51,120
so the plates are removed put into a bag

129
00:07:59,809 --> 00:07:57,890
to the Eva

130
00:08:01,730 --> 00:07:59,819
so once both crew members are complete

131
00:08:04,249 --> 00:08:01,740
with that they both head back to the

132
00:08:06,890 --> 00:08:04,259
quest air lock and we have completed the

133
00:08:09,710 --> 00:08:06,900
plant tasks for the UVA if there is some

134
00:08:11,089 --> 00:08:09,720
time at the end of the Eva we will have

135
00:08:11,610 --> 00:08:11,099
some get aheads for their career to

136
00:08:21,670 --> 00:08:11,620
perform

137
00:08:35,649 --> 00:08:24,290
and those are the tasks you can look

138
00:08:40,850 --> 00:08:38,449

both Hopkins and Glover now have their

139

00:08:42,350 --> 00:08:40,860

safer successfully installed and they're

140

00:08:44,329 --> 00:08:42,360

being moved through the equipment log

141

00:08:46,490 --> 00:08:44,339

portion of the airlock as you see on the

142

00:08:49,370 --> 00:08:46,500

top of your screen into the crew lock

143

00:08:54,410 --> 00:08:51,970

hello everybody

144

00:08:59,329 --> 00:08:54,420

in a short while the hatch will then be

145

00:09:03,949 --> 00:09:01,490

and the final preparations will begin to

146

00:09:06,170 --> 00:09:03,959

depressurize that depressurize that

147

00:09:27,230 --> 00:09:06,180

depressurize the crew lock all the way

148

00:09:36,829 --> 00:09:29,810

the spacesuits you see the duo wearing

149

00:09:41,449 --> 00:09:39,350

and verified by both m s but we'll get

150

00:09:43,009 --> 00:09:41,459

it again with Andy and suichi has

151
00:09:46,130 --> 00:09:43,019
checked there is no water in either

152
00:09:46,140 --> 00:09:49,790
copy

153
00:09:55,910 --> 00:09:52,130
you just heard a call from NASA

154
00:09:55,920 --> 00:09:59,690
copy

155
00:10:03,530 --> 00:10:01,850
another call from Kate Rubens down to

156
00:10:08,810 --> 00:10:03,540
the ground she's communicating with

157
00:10:14,030 --> 00:10:10,269
foreign

158
00:10:22,370 --> 00:10:14,040
we see you in Step 63 just to think up

159
00:10:33,769 --> 00:10:27,230
m

160
00:10:35,810 --> 00:10:33,779
the way through depressurization this

161
00:10:37,610 --> 00:10:35,820
morning at which point the ground IV

162
00:10:47,150 --> 00:10:37,620
will take over Communications and we'll

163
00:10:51,769 --> 00:10:49,490

again the spacesuits you see the duo

164

00:10:55,790 --> 00:10:51,779

wearing today are the emu's or extra

165

00:10:55,800 --> 00:11:00,769

copy

166

00:11:05,090 --> 00:11:03,530

the extra vehicular Mobility units which

167

00:11:07,069 --> 00:11:05,100

are essentially a mini life support

168

00:11:09,350 --> 00:11:07,079

system providing Environmental

169

00:11:10,970 --> 00:11:09,360

Protection mobility and communication

170

00:11:13,430 --> 00:11:10,980

for the crew members during their

171

00:11:55,870 --> 00:11:13,440

spacewalk

172

00:12:01,910 --> 00:11:59,629

today's space walk marks the 233rd

173

00:12:04,250 --> 00:12:01,920

spacewalk in support of station assembly

174

00:12:06,230 --> 00:12:04,260

maintenance and upgrades and will again

175

00:12:08,030 --> 00:12:06,240

be the first for NASA astronaut Victor

176
00:12:10,069 --> 00:12:08,040
Glover

177
00:12:12,590 --> 00:12:10,079
this will be the third spacewalk for

178
00:12:14,870 --> 00:12:12,600
NASA astronaut Mike Hopkins his previous

179
00:12:20,030 --> 00:12:14,880
spacewalk experience brings his career

180
00:12:25,250 --> 00:12:22,129
this will be the second spacewalk of

181
00:12:27,530 --> 00:12:25,260
expedition 64.

182
00:12:29,870 --> 00:12:27,540
the primary tasks for these spacewalkers

183
00:12:31,430 --> 00:12:29,880
today is to complete cable and antenna

184
00:12:33,350 --> 00:12:31,440
rigging for the bartolomeo science

185
00:12:36,050 --> 00:12:33,360
platform on the Columbus module of the

186
00:12:38,329 --> 00:12:36,060
space station and configure a Ka band

187
00:12:40,069 --> 00:12:38,339
antenna to enable Independent high

188
00:12:43,430 --> 00:12:40,079

bandwidth communication links to

189

00:12:48,110 --> 00:12:46,009

after completing these upgrades the duo

190

00:12:50,509 --> 00:12:48,120

will remove a grapple fixture on the far

191

00:13:04,370 --> 00:12:50,519

Port truss of the station in preparation

192

00:13:09,829 --> 00:13:07,310

session number one all the tools and the

193

00:13:12,290 --> 00:13:09,839

Coca are safely inside the cook we are

194

00:13:14,150 --> 00:13:12,300

starting a step 65 for preparing for

195

00:13:59,410 --> 00:13:14,160

depress

196

00:14:03,230 --> 00:14:01,610

we'd love to answer some of your

197

00:14:05,329 --> 00:14:03,240

questions on social media today

198

00:14:07,370 --> 00:14:05,339

throughout today's spacewalk you can

199

00:14:08,810 --> 00:14:07,380

submit your questions to ask NASA and

200

00:14:32,530 --> 00:14:08,820

we'll be answering them live throughout

201
00:14:49,269 --> 00:14:36,530
both Hopkins and Glover now in the crew

202
00:15:11,710 --> 00:14:51,650
in a short while the hatch will be

203
00:15:16,069 --> 00:15:14,509
and you can see the hatch being closed

204
00:15:18,949 --> 00:15:16,079
right now

205
00:15:20,569 --> 00:15:18,959
Jack's the astronaut suichi naguchi and

206
00:16:58,069 --> 00:15:20,579
NASA astronaut Kate Rubens working

207
00:17:06,710 --> 00:17:02,990
station space ground One Step 73 is

208
00:17:09,289 --> 00:17:06,720
complete and there is a 72 is completed

209
00:17:09,299 --> 00:17:12,529
and you guys perform

210
00:17:18,829 --> 00:17:16,309
hey good morning ISS uh this is Drew I'm

211
00:17:21,949 --> 00:17:18,839
on Console copy that 73 is complete we

212
00:17:24,829 --> 00:17:21,959
got 74 done as well we're working 75 and

213
00:17:27,289 --> 00:17:24,839

76 and uh if you guys are ready we'll

214

00:17:29,270 --> 00:17:27,299

set up the uh com and you guys will be

215

00:17:34,669 --> 00:17:29,280

hot Mike after these uh next few steps

216

00:17:34,679 --> 00:17:43,850

okay we'll be standing by

217

00:17:58,070 --> 00:17:52,750

e

218

00:18:00,529 --> 00:17:58,080

astronaut suichi naguchi just confirming

219

00:18:02,510 --> 00:18:00,539

that the hatch is now closed

220

00:18:04,310 --> 00:18:02,520

with the hatch clothes isolating Glover

221

00:18:06,289 --> 00:18:04,320

and Hopkins to the crew lock section of

222

00:18:10,390 --> 00:18:06,299

the quest airlock the next Milestone

223

00:18:15,409 --> 00:18:12,350

depressurization will take the crew lock

224

00:18:17,510 --> 00:18:15,419

from its current 14.7 pounds per square

225

00:18:19,370 --> 00:18:17,520

inch of pressure all the way down to

226

00:18:21,529 --> 00:18:19,380

vacuum

227

00:18:23,150 --> 00:18:21,539

final suit checks and calm checks will

228

00:18:25,310 --> 00:18:23,160

occur and then the crew will be given

229

00:18:27,289 --> 00:18:25,320

the go to place their suits on internal

230

00:19:04,370 --> 00:18:27,299

battery power which will Mark the

231

00:19:58,510 --> 00:19:06,830

the crews still running ahead of today's

232

00:20:03,289 --> 00:20:01,370

station Houston Space to ground one just

233

00:20:06,169 --> 00:20:03,299

heads up for the EV crew you are now hot

234

00:20:07,250 --> 00:20:06,179

mic on Space ground one and uh switching

235

00:20:15,770 --> 00:20:07,260

Kate you guys are going to continue

236

00:20:15,780 --> 00:20:20,210

77.

237

00:20:20,220 --> 00:20:31,130

and if you want coffee thought Mike

238

00:20:46,970 --> 00:20:35,630

okay ev2 on the UIA check the difference

239

00:20:46,980 --> 00:20:51,010

is green on

240

00:21:01,810 --> 00:20:55,370

at Houston Station it's from one uh

241

00:21:15,470 --> 00:21:04,789

station Houston Station one you have a

242

00:21:19,850 --> 00:21:17,990

as you heard there the crew is now go to

243

00:21:23,270 --> 00:21:19,860

begin depressurization and we'll be

244

00:21:26,390 --> 00:21:23,280

working through those procedures now

245

00:21:28,430 --> 00:21:26,400

okay uh we started eating my immature

246

00:21:32,930 --> 00:21:28,440

starting the crew of depressed so it'll

247

00:21:35,980 --> 00:21:34,730

[Music]

248

00:21:40,610 --> 00:21:35,990

power

249

00:21:59,770 --> 00:21:42,529

on

250

00:21:59,780 --> 00:22:12,230

okay here we go Hopper ready

251
00:22:17,330 --> 00:22:13,610
one

252
00:22:25,789 --> 00:22:17,340
pressure 1370

253
00:22:25,799 --> 00:22:30,010
foreign

254
00:22:34,130 --> 00:22:32,210
depressurization of the quest airlock

255
00:22:35,990 --> 00:22:34,140
has officially begun that

256
00:22:38,990 --> 00:22:36,000
depressurization of the airlock will be

257
00:22:40,909 --> 00:22:39,000
done in a two-stage process

258
00:22:43,310 --> 00:22:40,919
first they'll take the crew down to five

259
00:22:45,169 --> 00:22:43,320
pounds per square inch of pressure at

260
00:22:49,610 --> 00:22:45,179
which point depressurization will be

261
00:22:53,630 --> 00:22:51,590
following this depressurization will

262
00:22:56,390 --> 00:22:53,640
resume and continue all the way down to

263
00:22:58,190 --> 00:22:56,400

vacuum once vacuum is reached the two

264

00:23:00,350 --> 00:22:58,200

spacewalkers will complete suit and

265

00:23:01,850 --> 00:23:00,360

communication checks before placing

266

00:23:04,070 --> 00:23:01,860

their spacesuit on internal battery

267

00:23:10,330 --> 00:23:04,080

power officially marking the start of

268

00:23:15,289 --> 00:23:13,610

a U.S spacewalk start and end time is

269

00:23:18,169 --> 00:23:15,299

measured from the time the crew places

270

00:23:19,130 --> 00:23:18,179

their suit on internal battery power all

271

00:23:21,649 --> 00:23:19,140

the way up until the time

272

00:23:23,149 --> 00:23:21,659

repressurization occurs and the crew is

273

00:23:25,190 --> 00:23:23,159

back inside the crew lock following

274

00:23:27,230 --> 00:23:25,200

completion of their spacewalking tasks

275

00:23:56,280 --> 00:23:27,240

for the day

276

00:24:12,010 --> 00:23:59,029

[Applause]

277

00:24:17,269 --> 00:24:15,529

over between satellites we'll regain

278

00:24:21,950 --> 00:24:17,279

Communication in visuals with the crew

279

00:24:21,960 --> 00:24:31,190

about 45 minutes

280

00:24:31,200 --> 00:24:36,950

two

281

00:24:58,990 --> 00:24:40,669

there's my pressure relief though

282

00:24:59,000 --> 00:25:03,590

PSI decreasing

283

00:25:03,600 --> 00:25:13,850

foreign

284

00:25:19,490 --> 00:25:16,390

pressure inside the crew lock now at

285

00:25:22,010 --> 00:25:19,500

9.65 pounds per square inch of pressure

286

00:25:24,169 --> 00:25:22,020

as a reminder at 5 pounds per square

287

00:25:34,490 --> 00:25:24,179

inch of pressure depressurization will

288

00:25:38,029 --> 00:25:36,110

following that system's check

289

00:25:49,690 --> 00:25:38,039
depressurization will resume and

290

00:25:53,630 --> 00:25:51,830
once vacuum is reached the two

291

00:25:55,850 --> 00:25:53,640
spacewalkers will complete suit and

292

00:25:57,470 --> 00:25:55,860
communication checks before placing

293

00:25:59,750 --> 00:25:57,480
their spacesuit on internal battery

294

00:26:21,169 --> 00:25:59,760
power which will Mark the official start

295

00:26:55,630 --> 00:26:51,529
foreign

296

00:26:59,810 --> 00:26:57,769
Gucci in the crew lock section

297

00:27:02,390 --> 00:26:59,820
continuing to monitor depressurization

298

00:27:03,890 --> 00:27:02,400
on the quest airlock where NASA

299

00:27:05,750 --> 00:27:03,900
astronauts Mike Hopkins and Victor

300

00:27:07,730 --> 00:27:05,760
Glover are suited up in undergoing

301
00:27:09,529 --> 00:27:07,740
preparations to eventually venture

302
00:27:38,090 --> 00:27:09,539
outside the space station hatch for

303
00:28:33,250 --> 00:28:01,549
foreign

304
00:28:40,310 --> 00:28:35,930
about six pounds per square inch of

305
00:28:45,049 --> 00:28:42,950
again once five pounds of pressure is

306
00:29:28,789 --> 00:28:45,059
reached they'll pause depressurization

307
00:29:28,799 --> 00:29:58,549
foreign

308
00:30:05,330 --> 00:30:02,930
talking and when the clock gets five I

309
00:30:29,450 --> 00:30:05,340
think your action is closer than your

310
00:30:29,460 --> 00:31:02,750
foreign

311
00:31:02,760 --> 00:31:08,690
we're on 5.3

312
00:31:34,669 --> 00:31:11,149
coming up on five pounds per square inch

313
00:31:34,679 --> 00:32:14,049

foreign

314

00:32:18,409 --> 00:32:16,610

pressure inside the airlock now at five

315

00:32:20,330 --> 00:32:18,419

pounds per square inch

316

00:33:20,450 --> 00:32:20,340

Glover and Hopkins are working through

317

00:33:20,460 --> 00:33:50,990

foreign

318

00:34:15,710 --> 00:33:53,630

you need to easier

319

00:34:21,109 --> 00:34:19,129

and I imagine CX is also open if you are

320

00:34:26,629 --> 00:34:21,119

needed to monitor should be gauge less

321

00:34:26,639 --> 00:34:33,950

foreign

322

00:34:40,550 --> 00:34:37,510

[Music]

323

00:34:42,589 --> 00:34:40,560

checks were good depressurization is now

324

00:34:50,089 --> 00:34:42,599

resumed and they'll work to get the crew

325

00:34:50,099 --> 00:34:58,250

hello

326
00:34:58,260 --> 00:35:02,710
foreign

327
00:35:07,250 --> 00:35:05,150
the two spacewalkers will complete suit

328
00:35:08,990 --> 00:35:07,260
and communication checks and then Place

329
00:35:11,270 --> 00:35:09,000
their spacesuits on internal battery

330
00:35:47,589 --> 00:35:11,280
power officially marking the start of

331
00:35:52,910 --> 00:35:50,210
everything still proceeding nominally in

332
00:36:07,320 --> 00:35:52,920
today's spacewalk preparations

333
00:36:07,330 --> 00:36:36,170
[Applause]

334
00:37:39,970 --> 00:37:09,349
foreign

335
00:37:45,050 --> 00:37:42,530
now less than three pounds of pressure

336
00:37:46,730 --> 00:37:45,060
per square inch in the crew lock as

337
00:37:49,490 --> 00:37:46,740
depressurization

338
00:38:05,990 --> 00:37:49,500

continues to reach all the way down to

339

00:38:11,390 --> 00:38:07,790

PSI

340

00:38:17,690 --> 00:38:11,400

I thought maybe to uh pump my ISO close

341

00:38:21,530 --> 00:38:20,030

yeah

342

00:38:29,329 --> 00:38:21,540

I need to come your way a little bit

343

00:38:38,030 --> 00:38:30,950

s

344

00:38:46,390 --> 00:38:38,040

time to report to uh Andy for the

345

00:38:50,870 --> 00:38:49,069

good morning Hopper I got you loud and

346

00:38:53,470 --> 00:38:50,880

clear I'm ready to copy your tether

347

00:38:57,609 --> 00:38:55,609

okay Andy we're going to start with

348

00:39:00,230 --> 00:38:57,619

miles

349

00:39:02,890 --> 00:39:00,240

Paul Brooks was attached to my right

350

00:39:09,430 --> 00:39:02,900

female extender

351

00:39:17,450 --> 00:39:12,290

's anchor hook

352

00:39:21,410 --> 00:39:17,460

s black on glasses full set

353

00:39:23,630 --> 00:39:21,420

also I might call Hook is right here in

354

00:39:26,870 --> 00:39:23,640

extender

355

00:39:30,890 --> 00:39:26,880

this is my red anchor hook

356

00:39:33,950 --> 00:39:30,900

for red uh small hook excuse me so of

357

00:39:37,670 --> 00:39:33,960

course I like black on black

358

00:39:40,130 --> 00:39:37,680

a red reel to unlock

359

00:39:41,990 --> 00:39:40,140

yellow Hook is attached to the green

360

00:39:44,329 --> 00:39:42,000

reel

361

00:39:46,580 --> 00:39:44,339

by the lock clock on black this small

362

00:39:50,690 --> 00:39:46,590

steps

363

00:39:54,050 --> 00:39:52,609

bringing Hook is attached to the red

364

00:40:00,349 --> 00:39:54,060

rail

365

00:40:06,410 --> 00:40:02,210

copy that sounds like a good tether

366

00:40:11,030 --> 00:40:08,750

good morning Andy starting at the

367

00:40:13,790 --> 00:40:11,040

airlock earring extender there is a

368

00:40:15,950 --> 00:40:13,800

waste cutter all hook gate closed

369

00:40:18,170 --> 00:40:15,960

shutters lock back on black

370

00:40:20,510 --> 00:40:18,180

a large hook of that waste other is to

371

00:40:22,609 --> 00:40:20,520

my waist tether large hook both hooks

372

00:40:23,690 --> 00:40:22,619

are available started locked back on

373

00:40:26,030 --> 00:40:23,700

black

374

00:40:28,670 --> 00:40:26,040

I waste others to my right earring

375

00:40:30,950 --> 00:40:28,680

extender a small Hook is a big

376

00:40:34,790 --> 00:40:30,960

closed-sider lock black on black

377

00:40:37,670 --> 00:40:34,800

also on Mercury extended is my Red Hook

378

00:40:40,069 --> 00:40:37,680

literally being instruct

379

00:40:41,990 --> 00:40:40,079

in his big clothes starter lock black on

380

00:40:44,390 --> 00:40:42,000

black

381

00:40:47,270 --> 00:40:44,400

that's connected to my red reel

382

00:40:49,790 --> 00:40:47,280

that red reel is unlocked the red reels

383

00:40:53,150 --> 00:40:49,800

yellow Hook is gate close that are

384

00:40:55,550 --> 00:40:53,160

locked black on black to my green reel

385

00:40:58,730 --> 00:40:55,560

my green real lowly baby strap hooks the

386

00:41:00,589 --> 00:40:58,740

green Hook is to my red reel gate closed

387

00:41:04,970 --> 00:41:00,599

shutters lock lock on black

388

00:41:06,950 --> 00:41:04,980

and the safety tether anchor hook uh is

389

00:41:09,770 --> 00:41:06,960

getting close on his lock block on block

390

00:41:48,770 --> 00:41:09,780

so Harper's waste header which is also

391

00:41:48,780 --> 00:42:11,170

foreign

392

00:42:18,710 --> 00:42:15,050

hike when the PDT is about zero you

393

00:42:22,190 --> 00:42:18,720

should expect an EV alert tone

394

00:42:24,410 --> 00:42:22,200

and when the EV hatch Delta p is less

395

00:42:37,030 --> 00:42:24,420

than half a PSI then you can open and

396

00:42:42,290 --> 00:42:38,950

ery

397

00:42:44,210 --> 00:42:42,300

toward me okay thank you Mike and if you

398

00:42:45,829 --> 00:42:44,220

want me to move my speed I can

399

00:42:59,630 --> 00:42:45,839

I think they're in good shape right now

400

00:42:59,640 --> 00:43:12,609

foreign

401
00:43:17,270 --> 00:43:14,809
Hopkins and Glover now communicating

402
00:43:20,690 --> 00:43:17,280
with the ground IV today who is European

403
00:43:22,490 --> 00:43:20,700
Space Agency astronaut Andy mogensen

404
00:43:23,750 --> 00:43:22,500
he's going to serve as spacewalk

405
00:43:25,250 --> 00:43:23,760
Communicator today and we'll talk

406
00:43:26,690 --> 00:43:25,260
directly with the crew during the

407
00:43:43,670 --> 00:43:26,700
spacewalk helping them choreograph

408
00:43:43,680 --> 00:44:09,010
foreign

409
00:44:13,609 --> 00:44:11,150
depressurization inside the crew lock

410
00:44:15,230 --> 00:44:13,619
continuing nominally once vacuum is

411
00:44:16,970 --> 00:44:15,240
reached the two spacewalkers will

412
00:44:19,010 --> 00:44:16,980
complete suit and communication checks

413
00:44:21,230 --> 00:44:19,020

before placing their spacesuits on

414

00:44:25,910 --> 00:44:21,240

internal battery power which will Mark

415

00:44:25,920 --> 00:45:10,730

foreign

416

00:45:10,740 --> 00:45:47,089

thank you

417

00:45:47,099 --> 00:46:44,230

foreign

418

00:46:48,710 --> 00:46:46,490

if you're just tuning in with us today

419

00:46:50,930 --> 00:46:48,720

NASA astronauts Mike Hopkins and Victor

420

00:46:53,030 --> 00:46:50,940

Glover are suited up and inside the crew

421

00:46:56,510 --> 00:46:53,040

lock portion of the quest airlock as

422

00:46:59,089 --> 00:46:56,520

depressurization is underway

423

00:47:01,010 --> 00:46:59,099

the crew lock will be down to vacuum

424

00:47:02,750 --> 00:47:01,020

before bench before the duo Ventures

425

00:48:23,870 --> 00:47:02,760

outside the hatch to complete Columbus

426
00:48:23,880 --> 00:48:49,790
foreign

427
00:48:49,800 --> 00:48:55,329
office

428
00:49:00,470 --> 00:48:58,370
during today's spacewalk NASA astronauts

429
00:49:02,030 --> 00:49:00,480
Mike Hopkins and Victor Glover will work

430
00:49:03,650 --> 00:49:02,040
to complete upgrades to the Columbus

431
00:49:16,190 --> 00:49:03,660
module of the International Space

432
00:49:21,950 --> 00:49:19,790
Hopkins is designated ev1 and he'll be

433
00:49:24,230 --> 00:49:21,960
wearing the suit with the stripes

434
00:49:26,450 --> 00:49:24,240
they'll also have on helmet cam number

435
00:49:27,950 --> 00:49:26,460
18 once we get outside the hatch that

436
00:49:29,450 --> 00:49:27,960
you'll be able to identify his views

437
00:49:31,490 --> 00:49:29,460
from

438
00:49:34,250 --> 00:49:31,500

NASA astronaut Victor Glover who will be

439

00:49:36,230 --> 00:49:34,260

completing his first spacewalk today is

440

00:49:37,549 --> 00:49:36,240

designated ev2

441

00:49:39,530 --> 00:49:37,559

he'll be wearing the suit with no

442

00:49:55,210 --> 00:49:39,540

stripes and will have on helmet cam

443

00:50:01,130 --> 00:49:58,370

NASA astronaut Kate Rubens and jaxa

444

00:50:03,950 --> 00:50:01,140

Astronaut suichiniguchi will work on the

445

00:50:06,049 --> 00:50:03,960

Canada arm 2 to move NASA astronaut

446

00:50:10,069 --> 00:50:06,059

Victor Glover through his procedures

447

00:50:14,390 --> 00:50:12,049

also supporting from the ground will be

448

00:50:16,130 --> 00:50:14,400

Andy mogensen who serves as ground ivy

449

00:51:22,450 --> 00:50:16,140

and will be communicating with the crew

450

00:51:26,510 --> 00:51:24,470

depressurization inside the crew lock

451
00:51:28,910 --> 00:51:26,520
continuing nominally

452
00:51:30,710 --> 00:51:28,920
approaching vacuum and again once vacuum

453
00:51:32,630 --> 00:51:30,720
is reached the two spacewalkers will

454
00:51:34,609 --> 00:51:32,640
complete suit and communication checks

455
00:51:36,470 --> 00:51:34,619
before placing their spacesuits on

456
00:52:46,549 --> 00:51:36,480
internal battery power officially

457
00:52:46,559 --> 00:52:57,710
all right

458
00:52:57,720 --> 00:53:26,829
foreign

459
00:54:01,130 --> 00:53:29,390
T Kate rubin's continuing to monitor

460
00:54:26,650 --> 00:54:04,730
he's still holding me at 0.6

461
00:54:32,329 --> 00:54:29,690
hey Hopper uh we're showing less than

462
00:54:35,089 --> 00:54:32,339
zero decimal five PSI down here so you

463
00:54:38,450 --> 00:54:35,099

are go to EV to open the EV hatch and

464

00:55:00,049 --> 00:54:42,410

okay if you want copies then work

465

00:55:09,309 --> 00:55:02,930

handle to the unlatched

466

00:55:09,319 --> 00:55:13,069

unlatched position

467

00:55:13,079 --> 00:55:25,789

put it in the hatch

468

00:55:30,890 --> 00:55:28,910

and it is nighttime addict

469

00:55:33,410 --> 00:55:30,900

thanks for that

470

00:55:35,270 --> 00:55:33,420

just wondering

471

00:55:48,950 --> 00:55:35,280

and another couple minutes and you

472

00:55:48,960 --> 00:56:16,069

foreign

473

00:56:16,079 --> 00:56:31,450

okay

474

00:56:36,470 --> 00:56:34,670

they're locked Houston on one uh step 14

475

00:56:41,150 --> 00:56:36,480

in the depressed Q card you can close

476
00:56:41,160 --> 00:56:50,390
happy step 14 complete

477
00:56:55,609 --> 00:56:51,770
Andy

478
00:56:56,870 --> 00:56:55,619
making a cool up have a suit P High

479
00:57:00,049 --> 00:56:56,880
message

480
00:57:01,910 --> 00:57:00,059
pressure gauge is 4.6

481
00:57:04,250 --> 00:57:01,920
my switches are the way they're supposed

482
00:57:07,849 --> 00:57:04,260
to be at this point

483
00:57:11,329 --> 00:57:07,859
sop rates zero

484
00:57:28,809 --> 00:57:13,849
yeah we copy you can acknowledge and

485
00:57:28,819 --> 00:57:32,569
all right if you're ready

486
00:57:39,049 --> 00:57:34,430
we'll move on to the post-depress part

487
00:57:43,549 --> 00:57:40,970
okay everyone's ready I think you'll be

488
00:57:47,349 --> 00:57:43,559

coming your way a little bit yeah

489

00:57:52,670 --> 00:57:50,470

come your way a little bit

490

00:57:55,190 --> 00:57:52,680

this view from outside the International

491

00:57:57,049 --> 00:57:55,200

Space Station

492

00:57:59,450 --> 00:57:57,059

showing the thermal cover in the Eva

493

00:58:01,370 --> 00:57:59,460

hatch that are now open

494

00:58:03,049 --> 00:58:01,380

soon Hopkins and Glover will make their

495

00:58:13,390 --> 00:58:03,059

way outside the space station hatch to

496

00:58:20,630 --> 00:58:15,770

you can check your display switches

497

00:58:20,640 --> 00:58:26,630

if you want functional

498

00:58:31,609 --> 00:58:29,390

be too functional

499

00:58:35,690 --> 00:58:31,619

all right Ike on the UIA you can switch

500

00:58:37,730 --> 00:58:35,700

and at 5 28 a.m Central Time the 233rd

501
00:58:39,950 --> 00:58:37,740
spacewalk in support of station assembly

502
00:58:48,230 --> 00:58:39,960
maintenance and upgrades has officially

503
00:58:48,240 --> 00:59:00,490
ah

504
00:59:13,430 --> 00:59:04,430
and once they're all probably one

505
00:59:13,440 --> 00:59:20,770
foreign

506
00:59:24,770 --> 00:59:23,690
copy 20 seconds to hand over I'll just

507
00:59:27,049 --> 00:59:24,780
give you the next steps you can

508
00:59:51,289 --> 00:59:27,059
disconnect the SCU from TCM install the

509
00:59:54,950 --> 00:59:53,329
we're in a brief expected Handover

510
00:59:56,750 --> 00:59:54,960
between satellites and we'll be

511
00:59:58,609 --> 00:59:56,760
regaining views in communication with

512
01:00:00,589 --> 00:59:58,619
the crew shortly everything still

513
01:00:02,270 --> 01:00:00,599

proceeding normally in today's spacewalk

514

01:00:25,790 --> 01:00:02,280

the crew about 40 minutes ahead of the

515

01:00:25,800 --> 01:00:30,970

[Applause]

516

01:00:39,049 --> 01:00:33,589

all right I you can check that the Deep

517

01:00:39,059 --> 01:00:49,690

standby

518

01:00:57,349 --> 01:00:52,730

still working on myself

519

01:01:03,950 --> 01:01:01,849

again at 5 28 a.m Central Time the 233rd

520

01:01:05,870 --> 01:01:03,960

spacewalk in support of station assembly

521

01:01:08,870 --> 01:01:05,880

maintenance and upgrades officially

522

01:01:11,930 --> 01:01:10,309

I'm gonna have to put it in the pouch

523

01:01:13,789 --> 01:01:11,940

after we have a little bit more room so

524

01:01:19,270 --> 01:01:13,799

if that's uh

525

01:01:23,750 --> 01:01:22,430

yep that's perfectly fine Ike and we'll

526

01:01:25,430 --> 01:01:23,760

get back to that once we have a little

527

01:01:27,230 --> 01:01:25,440

bit more room

528

01:01:31,130 --> 01:01:27,240

so please check that the depressed pump

529

01:01:31,140 --> 01:01:34,089

closed

530

01:01:46,370 --> 01:01:36,770

okay those of you please take your

531

01:01:46,380 --> 01:02:01,490

foreign

532

01:02:01,500 --> 01:02:08,270

next switch water to O and on

533

01:02:12,829 --> 01:02:10,250

maybe one water on

534

01:02:21,170 --> 01:02:12,839

pb2 water on

535

01:02:34,670 --> 01:02:23,809

but off

536

01:02:34,680 --> 01:02:40,569

everyone set the five

537

01:02:47,750 --> 01:02:43,010

next please check your suit pressure

538

01:02:47,760 --> 01:02:54,770

tp1 442 eb2 4.2

539

01:02:57,710 --> 01:02:56,390

so you will be

540

01:02:59,990 --> 01:02:57,720

will be in

541

01:03:08,930 --> 01:03:00,000

uh right now so it should be uh sunshine

542

01:03:14,630 --> 01:03:11,089

all right and we see good uh suit

543

01:03:18,049 --> 01:03:14,640

parameters in our data so um

544

01:03:19,309 --> 01:03:18,059

you can open the hatch thermal cover uh

545

01:03:21,410 --> 01:03:19,319

Hopper

546

01:03:30,710 --> 01:03:21,420

okay

547

01:03:33,890 --> 01:03:32,450

and Hopper just a reminder when you open

548

01:03:35,809 --> 01:03:33,900

the thermal hatch cover we'd like you to

549

01:03:54,230 --> 01:03:35,819

verify that the forward airlock hatch

550

01:03:54,240 --> 01:03:59,049

foreign

551

01:04:02,750 --> 01:04:01,309

just a little over five minutes in

552

01:04:10,450 --> 01:04:02,760

today's space walk which officially

553

01:04:16,190 --> 01:04:14,690

copy pin engaged you can egress the

554

01:04:22,430 --> 01:04:16,200

airlock with your crew lock bag number

555

01:04:27,650 --> 01:04:24,950

NASA astronauts Mike Hopkins and Victor

556

01:04:29,270 --> 01:04:27,660

Glover now going to egress the airlock

557

01:04:30,770 --> 01:04:29,280

when you have a little bit more room you

558

01:04:33,470 --> 01:04:30,780

can go ahead and Stow the SCU in the

559

01:04:33,480 --> 01:05:00,730

me too thanks

560

01:05:06,230 --> 01:05:03,470

[Music]

561

01:05:12,230 --> 01:05:06,240

the Forward Air locked three rings real

562

01:05:16,670 --> 01:05:14,690

can attach uh Ike's anchor hook to the

563

01:05:24,109 --> 01:05:16,680

forward starboard circular handrail

564

01:05:28,190 --> 01:05:26,060

and just uh cop

565

01:05:31,010 --> 01:05:28,200

[Music]

566

01:05:33,049 --> 01:05:31,020

per mcu's in the pouch uh I think you

567

01:05:35,150 --> 01:05:33,059

can prepare to transfer coca and here's

568

01:05:36,890 --> 01:05:35,160

just a reminder about the caution when

569

01:05:38,450 --> 01:05:36,900

handling coca avoid putting loads into

570

01:05:42,049 --> 01:05:38,460

the cables we're worried about the bend

571

01:05:46,730 --> 01:05:44,150

do you need to

572

01:05:50,210 --> 01:05:46,740

okay E2 your anchor hooks on the floor

573

01:05:52,789 --> 01:05:50,220

is uh Andrew LD rings and just give me a

574

01:06:02,029 --> 01:05:52,799

second to get my crew life back

575

01:06:07,130 --> 01:06:04,549

come down there when I'm removed my

576

01:06:10,010 --> 01:06:07,140

waist tethers

577

01:06:10,020 --> 01:06:19,809

the airlock with each other

578

01:06:19,819 --> 01:06:26,049

and Hopper when you have a second

579

01:06:37,490 --> 01:06:28,490

we'd love to get a confirmation that

580

01:06:37,500 --> 01:06:44,690

the coffee thank you

581

01:07:06,190 --> 01:06:45,440

foreign

582

01:07:06,200 --> 01:07:11,410

out to Hopper

583

01:07:17,089 --> 01:07:14,349

all right Hopper

584

01:07:23,870 --> 01:07:17,099

coming at you station mosque on Space

585

01:07:23,880 --> 01:08:03,069

foreign

586

01:08:07,970 --> 01:08:06,470

NASA astronaut Mike Hopkins now out of

587

01:08:09,829 --> 01:08:07,980

the crew lock

588

01:08:12,170 --> 01:08:09,839

he's working with NASA astronaut Victor

589

01:08:14,990 --> 01:08:12,180

Glover to transfer the kolka or Columbus

590

01:08:18,050 --> 01:08:15,000

Ka band antenna which they brought out

591

01:08:19,729 --> 01:08:18,060

of the airlock with them

592

01:08:23,749 --> 01:08:19,739

they'll then head over to the Columbus

593

01:08:28,490 --> 01:08:25,970

Glover will be carrying the kolka as he

594

01:08:30,649 --> 01:08:28,500

travels to Columbus on the ssrms or

595

01:08:33,709 --> 01:08:30,659

space station remote manipulator system

596

01:08:35,570 --> 01:08:33,719

or Canada arm 2 being operated by NASA

597

01:08:38,269 --> 01:08:35,580

astronaut Kate Rubens

598

01:08:40,930 --> 01:08:38,279

clear thank you

599

01:08:43,070 --> 01:08:40,940

bye standby

600

01:08:44,870 --> 01:08:43,080

deals is cut

601
01:08:47,209 --> 01:08:44,880
we can use

602
01:08:48,289 --> 01:08:47,219
uh pitch the bottom the side that's out

603
01:08:50,809 --> 01:08:48,299
towards you

604
01:08:53,090 --> 01:08:50,819
towards me okay now try to pull it down

605
01:08:57,110 --> 01:08:55,370
once the duo arrives at the workstation

606
01:09:01,550 --> 01:08:57,120
they'll work together to install the

607
01:09:04,970 --> 01:09:02,870
okay

608
01:09:06,470 --> 01:09:04,980
you're clear

609
01:09:15,530 --> 01:09:06,480
Roger

610
01:09:22,390 --> 01:09:17,570
then you can give Ikea go to egress

611
01:09:27,470 --> 01:09:25,149
once installed the Coco will provide

612
01:09:52,430 --> 01:09:27,480
Independent high bandwidth communication

613
01:09:52,440 --> 01:10:00,310

foreign

614

01:10:19,310 --> 01:10:03,229

Victor Glover now working to egress the

615

01:10:19,320 --> 01:10:28,500

foreign

616

01:10:28,510 --> 01:11:00,790

[Music]

617

01:11:04,910 --> 01:11:03,709

retractable tether these tethers are

618

01:11:06,649 --> 01:11:04,920

attached to the International Space

619

01:11:08,870 --> 01:11:06,659

Station and the crew member to keep them

620

01:11:10,790 --> 01:11:08,880

safe during the spacewalk

621

01:11:15,350 --> 01:11:10,800

and just a reminder like you're

622

01:11:21,290 --> 01:11:18,050

it is on the cable side

623

01:11:28,370 --> 01:11:26,270

it's locked on the non-cover handrail

624

01:11:30,350 --> 01:11:28,380

okay are you good for me to remove my

625

01:11:33,050 --> 01:11:30,360

right okay you can remove your rip and

626

01:11:45,470 --> 01:11:33,060

I'm ready to take control of it Roger

627

01:11:45,480 --> 01:11:57,130

my roots removed

628

01:12:02,450 --> 01:12:00,410

and Hopper once you've transferred Coco

629

01:12:05,149 --> 01:12:02,460

to IQ you can go ahead and close the

630

01:12:06,890 --> 01:12:05,159

hatch thermal cover and I if you want to

631

01:12:08,570 --> 01:12:06,900

take a few minutes to perform some

632

01:12:12,410 --> 01:12:08,580

translation adaptations that's perfectly

633

01:12:18,590 --> 01:12:16,130

me too I will take you up on that

634

01:12:21,770 --> 01:12:18,600

and Andy because his safety together is

635

01:12:23,630 --> 01:12:21,780

streaming across the uh thermal cover

636

01:12:26,390 --> 01:12:23,640

we're gonna wait until I get out of here

637

01:12:28,189 --> 01:12:26,400

and then I can boost it forward and feel

638

01:12:32,090 --> 01:12:28,199

uh close this thermal coverage that's

639

01:12:32,100 --> 01:12:51,229

Roger

640

01:12:51,239 --> 01:13:21,530

foreign

641

01:13:25,790 --> 01:13:23,930

just over 15 minutes into today's

642

01:13:28,610 --> 01:13:25,800

spacewalk there during today's space

643

01:13:30,410 --> 01:13:28,620

walk NASA astronauts Victor Glover and

644

01:13:32,090 --> 01:13:30,420

Mike Hopkins will focus on completing

645

01:13:34,189 --> 01:13:32,100

cable and antenna rigging for the

646

01:13:36,290 --> 01:13:34,199

bartolomeo science payloads platform

647

01:13:38,810 --> 01:13:36,300

outside of the European space agency

648

01:13:41,270 --> 01:13:38,820

Columbus module the duo will also

649

01:13:43,250 --> 01:13:41,280

configure a Ka band antenna that will

650

01:13:44,990 --> 01:13:43,260

enable an independent high bandwidth

651
01:13:47,750 --> 01:13:45,000
communication link to European ground

652
01:13:49,610 --> 01:13:47,760
stations after completing these upgrades

653
01:13:51,410 --> 01:13:49,620
on the Columbus module Hopkins and

654
01:13:53,270 --> 01:13:51,420
Glover will remove a grapple fixture

655
01:13:55,610 --> 01:13:53,280
bracket on the farport truss of the

656
01:13:57,770 --> 01:13:55,620
station in preparation for future power

657
01:14:00,290 --> 01:13:57,780
system upgrades

658
01:14:04,550 --> 01:14:00,300
the duo now working together to transfer

659
01:14:04,560 --> 01:14:09,350
[Music]

660
01:14:26,810 --> 01:14:11,880
s

661
01:14:33,590 --> 01:14:28,550
okay

662
01:14:33,600 --> 01:14:36,530
and

663
01:14:41,770 --> 01:14:40,130

it's got a face line glove

664

01:14:46,550 --> 01:14:41,780

all looks good

665

01:14:48,530 --> 01:14:47,300

okay

666

01:14:49,970 --> 01:14:48,540

[Applause]

667

01:14:52,430 --> 01:14:49,980

careful there right you're hitting full

668

01:14:54,590 --> 01:14:52,440

for instance and you just heard the call

669

01:14:55,790 --> 01:14:54,600

for a glove and half check this is

670

01:14:58,430 --> 01:14:55,800

something you'll hear regularly

671

01:15:00,169 --> 01:14:58,440

throughout today's spacewalk astronauts

672

01:15:01,790 --> 01:15:00,179

check their gloves for any damage that

673

01:15:04,490 --> 01:15:01,800

occurs during the spacewalk and report

674

01:15:07,490 --> 01:15:04,500

that down to the ground

675

01:15:09,229 --> 01:15:07,500

the hap stands for helmet absorption pad

676

01:15:11,030 --> 01:15:09,239

and the astronauts check to ensure

677

01:15:33,110 --> 01:15:11,040

nothing is leaking on the inside of the

678

01:15:36,830 --> 01:15:35,030

hey how you feel like I'm feeling good

679

01:15:39,830 --> 01:15:36,840

okay so I was watching as you were

680

01:15:42,530 --> 01:15:39,840

saying it as well okay the greatest WBS

681

01:15:45,350 --> 01:15:42,540

like I see two maybe more station tabs

682

01:15:48,590 --> 01:15:45,360

so if I see one VR e tab up

683

01:15:51,410 --> 01:15:48,600

our cease right paper handle down hand

684

01:15:55,970 --> 01:15:51,420

control module door closed

685

01:15:57,350 --> 01:15:55,980

uh the safer handle is down

686

01:15:59,270 --> 01:15:57,360

and

687

01:16:02,030 --> 01:15:59,280

your helmet lights are currently on by

688

01:16:04,310 --> 01:16:02,040

the way yeah just one okay and then uh

689

01:16:06,410 --> 01:16:04,320

Mickey tethers

690

01:16:08,990 --> 01:16:06,420

um Your Right theory extender

691

01:16:14,450 --> 01:16:09,000

alleviated Hook is locked

692

01:16:17,090 --> 01:16:14,460

good reel unlocks Hook is

693

01:16:19,189 --> 01:16:17,100

currently unlocked unlocked to your red

694

01:16:20,689 --> 01:16:19,199

reel double hook lock you've got good

695

01:16:22,490 --> 01:16:20,699

things that I can take both wheels are

696

01:16:24,709 --> 01:16:22,500

unlocked

697

01:16:26,470 --> 01:16:24,719

so you won't be

698

01:16:28,790 --> 01:16:26,480

yeah go ahead

699

01:16:36,530 --> 01:16:28,800

yeah we'll just take a baseline glove

700

01:16:36,540 --> 01:16:41,209

Drive

701
01:16:43,550 --> 01:16:42,470
all right

702
01:16:45,290 --> 01:16:43,560
um

703
01:16:46,850 --> 01:16:45,300
offer then you can begin your

704
01:16:48,169 --> 01:16:46,860
translation of the ceter spur once you

705
01:16:49,790 --> 01:16:48,179
get to the top of the cedisberg we'd

706
01:16:51,290 --> 01:16:49,800
appreciate just getting a look at the

707
01:16:54,470 --> 01:16:51,300
Ike and how he's making his way around

708
01:16:56,270 --> 01:16:54,480
esp2 and uh Ike first thing for you is

709
01:16:57,830 --> 01:16:56,280
to get into position and close the

710
01:17:00,950 --> 01:16:57,840
thermal hatch the hatch thermal cover

711
01:17:00,960 --> 01:17:44,450
all right more

712
01:17:48,530 --> 01:17:46,910
both Hopkins and Glover will now make

713
01:17:50,330 --> 01:17:48,540

their way to the Columbus module of the

714

01:17:52,669 --> 01:17:50,340

International Space Station

715

01:17:55,130 --> 01:17:52,679

find on your way out to Columbus please

716

01:17:58,130 --> 01:17:55,140

avoid contact with the lab ewc antennas

717

01:18:00,410 --> 01:17:58,140

with the Note 2 CBM pedals with the

718

01:18:02,410 --> 01:18:00,420

Columbus pdgf Target pin and grapple

719

01:18:07,250 --> 01:18:02,420

shaft and with the

720

01:18:13,669 --> 01:18:09,290

okay

721

01:18:19,070 --> 01:18:16,490

copy thermal cover is closed you can

722

01:18:20,330 --> 01:18:19,080

begin your translation to esp2 the

723

01:18:23,750 --> 01:18:20,340

forward side you're looking for with

724

01:18:23,760 --> 01:18:41,649

me too

725

01:18:45,850 --> 01:18:44,149

Hopkins will make his way to the

726

01:18:48,410 --> 01:18:45,860

Columbus module via translation

727

01:18:50,750 --> 01:18:48,420

meanwhile Hopkins will get a ride on the

728

01:18:54,189 --> 01:18:50,760

Canada arm 2 being controlled by NASA

729

01:18:54,199 --> 01:18:59,209

that's what we like to hear

730

01:19:04,930 --> 01:19:02,520

cool so Hopper you can uh

731

01:19:08,090 --> 01:19:04,940

[Music]

732

01:19:10,370 --> 01:19:08,100

offer you can go ahead and translate all

733

01:19:13,610 --> 01:19:10,380

the way out to Columbus so you're going

734

01:19:16,070 --> 01:19:13,620

um down the starboard lab struck we uh

735

01:19:18,169 --> 01:19:16,080

suggest you put in a poor man's fairly

736

01:19:19,850 --> 01:19:18,179

um somewhere along the lab and then you

737

01:19:22,130 --> 01:19:19,860

can go across the ditch to node two

738

01:19:26,270 --> 01:19:22,140

you're putting your green hook at no two

739

01:19:26,280 --> 01:20:11,990

very eye property

740

01:20:16,669 --> 01:20:14,030

yeah I come down on the lab

741

01:20:33,129 --> 01:20:16,679

I'll be I'm on the perfect side of the

742

01:20:38,149 --> 01:20:35,810

and I once you get to the forward side

743

01:20:40,129 --> 01:20:38,159

of esp2 looking for with five let us

744

01:20:45,110 --> 01:20:40,139

know if you want to attempts to Cocoa if

745

01:20:53,510 --> 01:20:49,669

will do I I'm going to try

746

01:20:59,770 --> 01:20:53,520

but I'll let you know if I change that

747

01:21:04,610 --> 01:21:02,510

and you have a view of NASA astronaut

748

01:21:06,530 --> 01:21:04,620

Victor Glover preparing to hop on the

749

01:21:07,610 --> 01:21:06,540

Canada arm 2 to take a ride over to

750

01:21:09,709 --> 01:21:07,620

Columbus

751
01:21:19,070 --> 01:21:09,719
meanwhile Hopkins will make his way also

752
01:21:24,770 --> 01:21:21,470
and there's a view of Hopkins now making

753
01:21:27,709 --> 01:21:24,780
his way to the Columbus module

754
01:21:29,450 --> 01:21:27,719
with five I'm gonna take a second my

755
01:21:37,669 --> 01:21:29,460
safety tether is kind of running across

756
01:21:47,209 --> 01:21:40,370
the crew tracking about 10 minutes ahead

757
01:21:47,219 --> 01:21:52,430
for that Gap spanner on no two

758
01:21:52,440 --> 01:21:55,550
and I copied

759
01:21:55,560 --> 01:22:02,570
and I'm at zero three four five

760
01:22:20,510 --> 01:22:04,129
and once that's done you can translate

761
01:22:26,930 --> 01:22:22,669
can you see me

762
01:22:30,649 --> 01:22:29,030
do you have a visual on you yes it's my

763
01:22:32,330 --> 01:22:30,659

favorite going behind my back I might

764

01:22:34,850 --> 01:22:32,340

have turned the wrong it is okay all

765

01:22:39,350 --> 01:22:37,370

you know it's right up uh that's your

766

01:23:04,570 --> 01:22:39,360

waist okay

767

01:23:19,070 --> 01:23:06,830

yeah that's working

768

01:23:26,990 --> 01:23:22,610

and you're clear nice job I thank you

769

01:23:32,590 --> 01:23:29,149

the International Space Station now

770

01:23:34,850 --> 01:23:32,600

flying 265 statute miles above the Earth

771

01:23:40,550 --> 01:23:34,860

flying over the South Atlantic Ocean

772

01:23:40,560 --> 01:24:09,649

okay

773

01:24:55,570 --> 01:24:11,629

ah

774

01:24:55,580 --> 01:24:59,510

nine one one

775

01:25:13,030 --> 01:25:01,189

still the crew dog bag and then leave

776

01:25:18,169 --> 01:25:16,189

and your your first task copper is to

777

01:25:19,250 --> 01:25:18,179

retrieve the two t-handle tools with the

778

01:25:22,729 --> 01:25:19,260

Reds

779

01:25:25,990 --> 01:25:22,739

and then install them over by the um

780

01:25:26,000 --> 01:25:38,229

all right

781

01:25:42,410 --> 01:25:40,790

Hopkins now at the Columbus module of

782

01:25:44,870 --> 01:25:42,420

the space station he's going to perform

783

01:25:48,110 --> 01:25:44,880

some work site setup in order to install

784

01:25:50,149 --> 01:25:48,120

the polka or Columbus Ka band antenna

785

01:25:51,410 --> 01:25:50,159

which NASA astronaut Victor Glover will

786

01:25:53,990 --> 01:25:51,420

bring with him over to the Columbus

787

01:26:04,209 --> 01:25:54,000

module while he gets a ride on the

788

01:26:10,610 --> 01:26:06,709

and I once you're set up let us know if

789

01:26:13,610 --> 01:26:10,620

you want to attempt Stone Cold apfr

790

01:26:16,610 --> 01:26:13,620

I'm Gonna Keep folk I see Authority uh

791

01:26:17,870 --> 01:26:16,620

papa papa box and six so I'm ready to

792

01:26:20,629 --> 01:26:17,880

pick up

793

01:26:23,270 --> 01:26:20,639

this apr4

794

01:26:26,030 --> 01:26:23,280

okay your first step is to uh work with

795

01:26:29,570 --> 01:26:26,040

M1 to take the arm into the apfr install

796

01:26:32,149 --> 01:26:29,580

position and you can GCA as required

797

01:26:35,990 --> 01:26:32,159

happy

798

01:26:40,129 --> 01:26:38,209

hi good to hear you this is Emma and

799

01:26:41,750 --> 01:26:40,139

we're ready for you all right I'm ready

800

01:26:44,990 --> 01:26:41,760

I've got a good visual of the lead all

801
01:26:46,729 --> 01:26:45,000
the way to the base okay copy and let me

802
01:26:49,010 --> 01:26:46,739
know when you go for the GCA publish

803
01:26:58,310 --> 01:26:49,020
apfr install new episode of April for

804
01:27:02,770 --> 01:27:00,830
another acronym that you just heard that

805
01:27:05,629 --> 01:27:02,780
you're you'll hear throughout the day is

806
01:27:07,910 --> 01:27:05,639
apfr which stands for articulating

807
01:27:09,709 --> 01:27:07,920
portable foot restraint and this is what

808
01:27:11,270 --> 01:27:09,719
crew members will use to restrain their

809
01:27:13,930 --> 01:27:11,280
feet at their respective workstations

810
01:27:13,940 --> 01:27:19,250
obviously motion

811
01:27:19,260 --> 01:27:34,729
continue

812
01:27:42,169 --> 01:27:38,209
okay that's good you can stop there

813
01:27:48,110 --> 01:27:46,430

okay and I'm ready to install the epfr

814

01:27:50,270 --> 01:27:48,120

stop by

815

01:27:56,870 --> 01:27:53,510

okay SSRS breaks I'll go for India for

816

01:28:02,810 --> 01:27:58,430

and like you're looking for a clocking

817

01:28:02,820 --> 01:28:09,470

70

818

01:28:13,310 --> 01:28:11,209

and Hopper once you have the two

819

01:28:15,950 --> 01:28:13,320

t-handle tools and The Two Reds uh

820

01:28:21,350 --> 01:28:15,960

you'll be attaching the free Red Hook to

821

01:28:21,360 --> 01:28:32,290

everyone

822

01:28:36,709 --> 01:28:35,030

and Hopper just a friendly reminder when

823

01:28:37,790 --> 01:28:36,719

you're installing the t-handle tools and

824

01:28:39,649 --> 01:28:37,800

also when you're installing the Gap

825

01:28:43,790 --> 01:28:39,659

spanner just double check your safety

826

01:28:52,850 --> 01:28:46,430

okay if you want coffee this is a

827

01:28:57,110 --> 01:28:55,070

as you see here NASA astronaut Victor

828

01:28:59,689 --> 01:28:57,120

Glover working to get that apfr

829

01:29:01,310 --> 01:28:59,699

installed on the Canada arm 2 in order

830

01:29:03,169 --> 01:29:01,320

to take a ride over to the Columbus

831

01:29:04,669 --> 01:29:03,179

module where he'll meet up with Hopkins

832

01:29:10,430 --> 01:29:04,679

who's currently working to set up the

833

01:29:10,440 --> 01:29:14,870

kitchen all can be depressed

834

01:29:19,490 --> 01:29:17,209

or go to perform a safety tether swap to

835

01:29:24,229 --> 01:29:19,500

the arm and I can give you the steps or

836

01:29:24,239 --> 01:29:30,649

okay

837

01:29:35,689 --> 01:29:33,470

just let me grab my writ off of 8 PS4

838

01:29:37,910 --> 01:29:35,699

I've got my red off

839

01:29:40,910 --> 01:29:39,410

why don't you go ahead and give me the

840

01:29:43,729 --> 01:29:40,920

first couple of steps

841

01:30:19,330 --> 01:29:43,739

sure so first thing is lock the green

842

01:30:19,340 --> 01:30:36,370

next lock the green tether reel

843

01:30:42,590 --> 01:30:39,490

Andy that reel is locked

844

01:30:45,410 --> 01:30:42,600

to the cable copy you can move the

845

01:30:46,550 --> 01:30:45,420

yellow hook to the arm tether point and

846

01:31:06,110 --> 01:30:46,560

check that the gates are closed and

847

01:31:11,390 --> 01:31:08,870

in Hopper we see you working on the Gap

848

01:31:13,729 --> 01:31:11,400

spanner I take it to handle tools were

849

01:31:16,729 --> 01:31:13,739

successfully installed and secure via

850

01:31:16,739 --> 01:31:34,310

and that is apparently a good full test

851
01:31:40,129 --> 01:31:37,490
maybe the yellow Hook is to the the fan

852
01:31:41,629 --> 01:31:40,139
rail set of Point close lock lock on

853
01:31:43,610 --> 01:31:41,639
Flex

854
01:31:46,610 --> 01:31:43,620
all right next you can drop your green

855
01:31:48,890 --> 01:31:46,620
hook on esp2 WE suggest handrail 8010

856
01:31:51,970 --> 01:31:48,900
and then you can unlock the green tether

857
01:31:57,169 --> 01:31:55,129
and as you can see here NASA astronaut

858
01:31:59,030 --> 01:31:57,179
Victor Glover continuing to work in

859
01:32:01,010 --> 01:31:59,040
order to take a ride on the Canada arm 2

860
01:32:01,729 --> 01:32:01,020
over to Columbus where Hopkins currently

861
01:32:09,530 --> 01:32:01,739
is

862
01:32:11,030 --> 01:32:09,540
antenna once both crew members are over

863
01:32:20,229 --> 01:32:11,040

at the Columbus module they'll work

864

01:32:26,510 --> 01:32:23,689

an Hopper once uh you've installed the

865

01:32:28,669 --> 01:32:26,520

Gaff spanner please just verify the

866

01:32:30,229 --> 01:32:28,679

spanner Buckle can be rotated 180

867

01:32:34,729 --> 01:32:30,239

degrees and then you can Stow the trash

868

01:32:34,739 --> 01:32:40,010

okay if you want copies all

869

01:32:50,570 --> 01:32:42,530

and there's a view of Hopkins preparing

870

01:33:00,189 --> 01:32:53,390

all right Andy pan rail 8011 is right in

871

01:33:05,090 --> 01:33:03,290

copy you can then work with Kate to take

872

01:33:11,830 --> 01:33:05,100

the arm into the apfr Ingress position

873

01:33:16,790 --> 01:33:14,090

copy Caden about

874

01:33:18,850 --> 01:33:16,800

45 seconds I'll be ready to go to

875

01:34:04,850 --> 01:33:18,860

Ingress published

876

01:34:04,860 --> 01:34:08,810

okay handicap spanner is

877

01:34:08,820 --> 01:34:13,430

and it can rotate 180 on the buckle

878

01:34:17,330 --> 01:34:15,290

still the trash bag in the crew lock bag

879

01:34:20,030 --> 01:34:17,340

and then you can grab the blue cap

880

01:34:22,910 --> 01:34:20,040

keeper leave the leave it on the back

881

01:34:52,669 --> 01:34:22,920

red and then you can remove the six caps

882

01:35:08,870 --> 01:34:57,790

uh

883

01:35:12,290 --> 01:35:10,669

you're currently at the apfr install

884

01:35:13,850 --> 01:35:12,300

position and we can take you to the ap

885

01:35:16,189 --> 01:35:13,860

of our Ingress position if you'd like

886

01:35:18,590 --> 01:35:16,199

just give us a go for the GCA yep yep

887

01:35:19,910 --> 01:35:18,600

just stand by so

888

01:35:22,430 --> 01:35:19,920

um

889

01:35:24,890 --> 01:35:22,440

maybe I just wanted to confirm my

890

01:35:27,410 --> 01:35:24,900

by settings 12 copper pocket Pockets

891

01:35:32,990 --> 01:35:27,420

correct

892

01:35:38,810 --> 01:35:35,629

the uh the toe Loops are facing the Lee

893

01:35:41,629 --> 01:35:38,820

is that all right maybe I'm just turned

894

01:35:43,669 --> 01:35:41,639

around I feel like the yaw is 180 out

895

01:35:47,030 --> 01:35:43,679

from where we want it or can you see it

896

01:35:47,040 --> 01:36:11,870

yeah we see we're checking just a second

897

01:36:11,880 --> 01:36:49,330

foreign

898

01:36:55,669 --> 01:36:53,330

we agree that it looks uh a yard 180

899

01:37:00,530 --> 01:36:55,679

degrees out so let's go with 12 papa

900

01:37:05,930 --> 01:37:02,930

I mean maybe that's just my

901
01:38:16,970 --> 01:37:05,940
if you mix it up for your settings but

902
01:38:23,030 --> 01:38:20,450
okay 12 purple Fox and whatever is

903
01:38:25,330 --> 01:38:23,040
pointing you away from the leaf it's

904
01:38:27,770 --> 01:38:25,340
your 12 one of the two

905
01:38:29,930 --> 01:38:27,780
copy all that looks uh much better I

906
01:38:32,450 --> 01:38:29,940
that was a good catch on your part

907
01:38:34,850 --> 01:38:32,460
so you can

908
01:38:38,090 --> 01:38:34,860
switch to to move it to the apfr Ingress

909
01:38:41,629 --> 01:38:40,550
all right case you have to go to apfr

910
01:39:10,010 --> 01:38:41,639
Ingress

911
01:39:10,020 --> 01:39:43,990
obviously

912
01:39:49,370 --> 01:39:46,850
and as NASA astronaut Victor Glover

913
01:39:51,229 --> 01:39:49,380

Works to Ingress the apfr or

914

01:39:52,970 --> 01:39:51,239

articulating portable foot restraint in

915

01:39:54,890 --> 01:39:52,980

order to get a ride on the Canada arm 2

916

01:39:56,450 --> 01:39:54,900

over to the Columbus module the

917

01:39:59,810 --> 01:39:56,460

International Space Station currently

918

01:40:01,790 --> 01:39:59,820

flying 260 statute miles over the west

919

01:40:04,850 --> 01:40:01,800

coast of Sudan

920

01:40:04,860 --> 01:40:16,330

it

921

01:40:16,340 --> 01:40:19,810

[Applause]

922

01:40:23,990 --> 01:40:22,550

that looks good

923

01:40:33,649 --> 01:40:24,000

motion there

924

01:40:41,890 --> 01:40:37,430

like a Break song go for apfr Ingress

925

01:40:46,729 --> 01:40:44,689

and I just uh for your awareness I think

926

01:40:48,290 --> 01:40:46,739

uh we're in a correct the offsetting of

927

01:40:52,430 --> 01:40:48,300

six now I think might it might just have

928

01:40:52,440 --> 01:41:03,640

that makes a lot of sense yep thank you

929

01:41:03,650 --> 01:41:17,950

[Applause]

930

01:41:22,970 --> 01:41:20,810

we're getting helmet cam views from NASA

931

01:41:25,970 --> 01:41:22,980

astronaut Victor Glover as he prepares

932

01:41:27,590 --> 01:41:25,980

to hop a ride on the Canada arm 2 which

933

01:41:28,850 --> 01:41:27,600

is being controlled by NASA astronaut

934

01:41:30,890 --> 01:41:28,860

Kate Rubens

935

01:41:33,350 --> 01:41:30,900

he'll be bringing with him the kolka or

936

01:41:35,090 --> 01:41:33,360

Columbus Ka band antenna

937

01:41:37,250 --> 01:41:35,100

which once he arrives he'll work with

938

01:42:00,109 --> 01:41:37,260

Hopkins together to install on the

939

01:42:00,119 --> 01:42:30,169

thank you

940

01:42:30,179 --> 01:42:34,729

all right

941

01:42:38,930 --> 01:42:36,890

sure wish I had a diaper to tell me my

942

01:42:41,030 --> 01:42:38,940

feet were all the way in but I believe I

943

01:42:43,850 --> 01:42:41,040

am in Napier

944

01:42:45,890 --> 01:42:43,860

my waist tether is to be Ingress eight

945

01:42:49,129 --> 01:42:45,900

I just tucked in

946

01:42:50,570 --> 01:42:49,139

focus on my brt no connections Gates

947

01:42:54,169 --> 01:42:50,580

Luigi

948

01:42:58,129 --> 01:42:55,970

all right Kathy I think you are ready

949

01:43:00,290 --> 01:42:58,139

we're going to maneuver to esp2 back off

950

01:43:02,209 --> 01:43:00,300

and then the colca back off that'll be a

951

01:43:03,950 --> 01:43:02,219

seven minute Joe cast for the Coco

952

01:43:05,570 --> 01:43:03,960

backup and I did hear that you checked

953

01:43:08,629 --> 01:43:05,580

all your tools and tethers are clear

954

01:43:12,229 --> 01:43:08,639

between you and esp2 and just confirm

955

01:43:20,390 --> 01:43:12,239

heels are out skills are way out

956

01:43:23,570 --> 01:43:21,709

okay

957

01:43:26,689 --> 01:43:23,580

status real quick before you get going

958

01:43:29,149 --> 01:43:26,699

Kate that uh connectors are released I'm

959

01:43:35,270 --> 01:43:29,159

going through the

960

01:43:38,810 --> 01:43:37,370

it's a good read back and we'll love to

961

01:44:16,970 --> 01:43:38,820

get a glove inspection have check from

962

01:44:21,350 --> 01:44:19,790

and Hopper we just had a Handover so I I

963

01:44:22,910 --> 01:44:21,360

missed any call you might have made um

964

01:44:25,370 --> 01:44:22,920

we'd love to get a glove inspection have

965

01:44:27,590 --> 01:44:25,380

checked from you now a little over 45

966

01:44:33,970 --> 01:44:27,600

minutes into today's space walk

967

01:44:38,930 --> 01:44:37,189

no change to gloves

968

01:44:41,090 --> 01:44:38,940

copy and then just to confirm the blue

969

01:44:46,669 --> 01:44:41,100

cap keeper is back in crew lock bag with

970

01:44:55,470 --> 01:44:50,030

scraps what's going in right now

971

01:44:55,480 --> 01:45:01,750

[Applause]

972

01:45:05,570 --> 01:45:03,470

meanwhile back in the International

973

01:45:07,609 --> 01:45:05,580

Space Station flight control room the

974

01:45:10,010 --> 01:45:07,619

orbit 2 team is ready to support today's

975

01:45:14,410 --> 01:45:10,020

spacewalk under the direction of flight

976

01:45:19,129 --> 01:45:17,450

to his right at the Capcom console is

977

01:45:22,310 --> 01:45:19,139

the ground IV who you've heard

978

01:45:24,590 --> 01:45:22,320

communicating with the space walkers

979

01:45:28,430 --> 01:45:24,600

the ground IV today is European Space

980

01:45:31,010 --> 01:45:28,440

Agency astronaut Andy mogensen

981

01:45:34,910 --> 01:45:31,020

and to their right is Capcom or capsule

982

01:45:37,790 --> 01:45:36,770

you heard them communicating with the

983

01:45:39,830 --> 01:45:37,800

crew up until the point of

984

01:45:41,390 --> 01:45:39,840

depressurization this morning at which

985

01:46:01,030 --> 01:45:41,400

point the ground IV did take over

986

01:46:06,910 --> 01:46:04,010

and like if you want you can retrieve the

987

01:46:09,590 --> 01:46:06,920

PGT and configure it to Bravo 4

988

01:46:16,850 --> 01:46:09,600

counterclockwise two and then temp stow

989

01:46:16,860 --> 01:46:24,229

um

990

01:46:27,830 --> 01:46:25,970

a complete with the spq backup

991

01:46:34,250 --> 01:46:27,840

reconfiguring for the cochlear seven

992

01:46:40,189 --> 01:46:37,550

you just heard words about the PGT which

993

01:46:42,530 --> 01:46:40,199

is the acronym for pistol grip tool this

994

01:46:43,850 --> 01:46:42,540

is essentially a space drill that will

995

01:46:46,430 --> 01:46:43,860

be used frequently during today's

996

01:46:47,570 --> 01:46:46,440

spacewalk once the spacewalking duo

997

01:46:50,689 --> 01:46:47,580

makes their way over to the Columbus

998

01:46:53,390 --> 01:46:50,699

module with the Coca they'll use the PGT

999

01:47:01,250 --> 01:46:53,400

in order to install it

1000

01:47:06,530 --> 01:47:04,729

with that probable for counter two

1001

01:47:20,990 --> 01:47:06,540

that's a good read back Bravo four

1002

01:47:25,729 --> 01:47:23,450

and Hopper at the topless connector

1003

01:47:28,850 --> 01:47:25,739

panel you can Stow the White Cap keeper

1004

01:47:36,050 --> 01:47:28,860

rep on handrail zero nine four three the

1005

01:47:36,060 --> 01:47:42,830

do you want coffee

1006

01:47:47,870 --> 01:47:45,169

and then you're stowing a cap keeper

1007

01:47:57,669 --> 01:47:47,880

hook on the j05 Terminator tether point

1008

01:47:57,679 --> 01:48:07,189

I obviously

1009

01:48:07,199 --> 01:48:16,370

motion

1010

01:48:16,380 --> 01:48:22,570

foreign

1011

01:48:28,070 --> 01:48:25,370

next for you Hopper is to install long

1012

01:48:31,189 --> 01:48:28,080

wire Ties on Columbus handrails zero

1013

01:48:36,609 --> 01:48:31,199

nine three two star extension and 0933

1014

01:48:40,850 --> 01:48:38,990
and you're getting views of NASA

1015

01:48:42,830 --> 01:48:40,860
astronaut Victor Glover as he makes his

1016

01:48:44,570 --> 01:48:42,840
way over to the Columbus module of the

1017

01:48:47,510 --> 01:48:44,580
International Space Station to meet up

1018

01:49:04,490 --> 01:48:50,629
he's on the Canada arm flying 263

1019

01:49:09,350 --> 01:49:07,129
to the left of your screen there the

1020

01:49:11,030 --> 01:49:09,360
rectangular object is what NASA

1021

01:49:12,830 --> 01:49:11,040
astronaut Victor Glover is bringing with

1022

01:49:14,750 --> 01:49:12,840
him over to the Columbus module of this

1023

01:49:17,030 --> 01:49:14,760
space station in order to install it

1024

01:49:22,390 --> 01:49:17,040
with NASA astronaut Mike Hopkins who's

1025

01:49:26,330 --> 01:49:24,709
and like while you're flying if you want

1026
01:50:08,089 --> 01:49:26,340
to give us a glove inspection and have

1027
01:50:27,709 --> 01:50:12,370
also look brand new half a straw

1028
01:50:27,719 --> 01:50:31,570
932 silver students

1029
01:50:38,810 --> 01:50:35,810
copy Nexus handrail 0933 that's a port

1030
01:50:46,089 --> 01:50:38,820
of the uh Zenith EPF that external

1031
01:50:46,099 --> 01:50:56,649
and you're looking for the abstention

1032
01:51:01,790 --> 01:50:59,390
and I think picture for you uh first

1033
01:51:04,550 --> 01:51:01,800
thing you'll do when you get to the Coco

1034
01:51:10,550 --> 01:51:04,560
worksite is to release the mdps bolt

1035
01:51:15,649 --> 01:51:13,669
in DPS both one and two NASA astronaut

1036
01:51:17,149 --> 01:51:15,659
Victor Glover now making his way to the

1037
01:51:18,950 --> 01:51:17,159
Columbus module of the International

1038
01:51:20,510 --> 01:51:18,960

Space Station to meet up with Mike

1039

01:51:22,609 --> 01:51:20,520

Hopkins

1040

01:51:25,250 --> 01:51:22,619

the space station is about to fly over

1041

01:51:28,310 --> 01:51:25,260

Kazakhstan which is where NASA astronaut

1042

01:51:30,770 --> 01:51:28,320

Kate Rubens launched on October 14th

1043

01:51:32,570 --> 01:51:30,780

she's currently giving Victor Glover a

1044

01:51:51,830 --> 01:51:32,580

ride over to the Columbus module on

1045

01:51:51,840 --> 01:52:04,430

hey lke that's a beautiful view yeah

1046

01:52:09,169 --> 01:52:06,830

offer yes sir

1047

01:52:12,290 --> 01:52:09,179

this thing is a lot more squirrely than

1048

01:52:14,030 --> 01:52:12,300

I thought would you just help me keep

1049

01:52:15,709 --> 01:52:14,040

players which we did in Columbus those

1050

01:52:18,109 --> 01:52:15,719

cables

1051

01:52:19,850 --> 01:52:18,119

um make it hard to adjust

1052

01:52:22,129 --> 01:52:19,860

provision of it

1053

01:52:24,530 --> 01:52:22,139

advisor they're right by where my VRT

1054

01:52:30,649 --> 01:52:24,540

attaches

1055

01:52:54,229 --> 01:52:34,010

VRT keeps coming it keeps loosening when

1056

01:52:57,770 --> 01:52:55,609

oh wow

1057

01:53:00,290 --> 01:52:57,780

better face fully empty when you get up

1058

01:53:07,850 --> 01:53:00,300

there wow

1059

01:53:07,860 --> 01:53:24,830

a lot of stuff on it

1060

01:53:28,669 --> 01:53:27,109

okay Luigi I see the website good motion

1061

01:53:50,950 --> 01:53:28,679

continue

1062

01:53:56,810 --> 01:53:54,189

and Hopper once you're done

1063

01:53:58,669 --> 01:53:56,820

to the right of your screen there you're

1064

01:54:00,470 --> 01:53:58,679

getting a view of this SpaceX Dragon

1065

01:54:13,250 --> 01:54:00,480

resilience which Hopkins and Glover

1066

01:54:13,260 --> 01:54:34,129

Roger

1067

01:54:39,709 --> 01:54:38,209

so uh Andy brought me doing that uh you

1068

01:54:44,689 --> 01:54:39,719

know we don't have faults one and two

1069

01:54:44,699 --> 01:54:49,609

say again Hopper

1070

01:54:53,990 --> 01:54:51,770

we're here in your update currently at

1071

01:54:56,030 --> 01:54:54,000

the um end of the Joe cast we're gonna

1072

01:54:57,649 --> 01:54:56,040

get too ready for the Coca install in

1073

01:55:03,229 --> 01:54:57,659

just a sec give us a minute we're convey

1074

01:55:06,890 --> 01:55:05,089

um I think our point with both one and

1075

01:55:07,729 --> 01:55:06,900

two

1076

01:55:09,350 --> 01:55:07,739

um

1077

01:55:11,570 --> 01:55:09,360

I think I've got time to go ahead and

1078

01:55:20,589 --> 01:55:11,580

get that last wire tie if you guys are

1079

01:55:26,270 --> 01:55:23,570

yeah Hopper if you have time that's fine

1080

01:55:28,370 --> 01:55:26,280

you can go ahead and install that uh

1081

01:55:30,589 --> 01:55:28,380

um wire tie on zero nine three nine down

1082

01:55:32,030 --> 01:55:30,599

by the bartolomeo platform we do

1083

01:55:34,370 --> 01:55:32,040

recommend putting in the poor man's fair

1084

01:55:40,430 --> 01:55:34,380

lead at that end cone handrail zero nine

1085

01:55:40,440 --> 01:55:47,149

one

1086

01:55:51,050 --> 01:55:49,609

and uh as you're heading down to uh far

1087

01:55:53,450 --> 01:55:51,060

flow mail I'll just give you a reminder

1088

01:55:55,669 --> 01:55:53,460

of a caution uh do not touch the

1089

01:56:00,410 --> 01:55:55,679

connector doors on the go to interfaces

1090

01:56:00,420 --> 01:56:07,850

everyone

1091

01:56:12,410 --> 01:56:10,370

while Hopkins was waiting for a Glover

1092

01:56:14,209 --> 01:56:12,420

to arrive on the Canada arm 2 he was

1093

01:56:16,070 --> 01:56:14,219

able to make his way to the bartolomeo

1094

01:56:17,990 --> 01:56:16,080

work site and complete a little bit of

1095

01:56:20,089 --> 01:56:18,000

setup

1096

01:56:22,189 --> 01:56:20,099

which will be their next task

1097

01:56:25,370 --> 01:56:22,199

after they install the kolka which again

1098

01:56:27,350 --> 01:56:25,380

is the Columbus Ka band antenna

1099

01:56:29,750 --> 01:56:27,360

in order to install the kolka the crew

1100

01:56:33,109 --> 01:56:29,760

will be working together to drill in a

1101
01:56:33,119 --> 01:57:05,470
foreign

1102
01:57:09,890 --> 01:57:08,209
82 this is Kate uh we're done with our

1103
01:57:12,589 --> 01:57:09,900
config here and we're ready for your go

1104
01:57:16,390 --> 01:57:12,599
for the GCA to publish Port bolt removal

1105
01:57:19,729 --> 01:57:18,709
okay are you good if we go ahead and do

1106
01:57:20,870 --> 01:57:19,739
it now do you want me to wait for you to

1107
01:57:23,689 --> 01:57:20,880
finish

1108
01:57:27,830 --> 01:57:26,209
30 seconds I'll have this done okay yeah

1109
01:57:30,410 --> 01:57:27,840
okay let's just wait he's right there at

1110
01:57:31,910 --> 01:57:30,420
the bartholomeo platform

1111
01:57:33,050 --> 01:57:31,920
and uh

1112
01:57:46,990 --> 01:57:33,060
that'll give us a little bit more

1113
01:57:47,000 --> 01:57:50,689

three twists

1114

01:57:50,699 --> 01:57:58,550

copy thank you

1115

01:57:58,560 --> 01:58:08,750

and I'm moving back up

1116

01:58:14,750 --> 01:58:12,770

now one hour into the 233rd spacewalk in

1117

01:58:26,450 --> 01:58:14,760

support of station assembly maintenance

1118

01:58:30,890 --> 01:58:28,729

the crew is about 15 minutes ahead of

1119

01:58:32,330 --> 01:58:30,900

their scheduled timeline today next up

1120

01:58:34,490 --> 01:58:32,340

on the task list they'll work together

1121

01:58:38,270 --> 01:58:34,500

to install bolts on the kolka or

1122

01:58:40,129 --> 01:58:38,280

Columbus Ka band antenna

1123

01:58:42,290 --> 01:58:40,139

this will enable an independent high

1124

01:58:47,810 --> 01:58:42,300

bandwidth communication link to European

1125

01:59:10,609 --> 01:58:49,310

water

1126

01:59:10,619 --> 01:59:23,510

so if you ever go to GTA publisher

1127

01:59:23,520 --> 01:59:33,890

okay so we are ready to move the um yeah

1128

01:59:33,900 --> 01:59:46,729

like obviously

1129

01:59:46,739 --> 02:00:57,790

good motion

1130

02:01:14,710 --> 02:00:59,930

between Columbus

1131

02:01:14,720 --> 02:01:39,410

[Music]

1132

02:01:39,420 --> 02:02:10,490

foreign

1133

02:02:10,500 --> 02:02:15,850

did you say confidence

1134

02:02:15,860 --> 02:02:21,109

one and two

1135

02:02:25,330 --> 02:02:23,450

thank you can grab your uh PDT and

1136

02:02:33,410 --> 02:02:25,340

verify that you're still in Bravo 4

1137

02:02:41,450 --> 02:02:38,390

I'm in Bravo for counter two motor

1138

02:02:47,510 --> 02:02:41,460

0.5 I just turned it on

1139

02:02:53,330 --> 02:02:49,729

and once you're ready you can release

1140

02:02:55,250 --> 02:02:53,340

bolts one and two it's 13 turns each in

1141

02:03:17,330 --> 02:02:55,260

any order and we'd appreciate a report

1142

02:03:17,340 --> 02:03:22,910

okay

1143

02:03:43,189 --> 02:03:26,270

level four counter to you

1144

02:03:47,689 --> 02:03:45,350

as a reminder we are taking your

1145

02:03:49,189 --> 02:03:47,699

questions today and answering them live

1146

02:03:52,069 --> 02:03:49,199

on air if you'd like to submit a

1147

02:03:53,689 --> 02:03:52,079

question use the hashtag asknasa our

1148

02:03:56,089 --> 02:03:53,699

first question of the day is how many

1149

02:03:58,790 --> 02:03:56,099

sunsets and sunrises will the astronaut

1150

02:04:00,350 --> 02:03:58,800

see well this is a great question and

1151

02:04:03,830 --> 02:04:00,360

the space station is orbiting the Earth

1152

02:04:05,750 --> 02:04:03,840

at about 17 500 miles per hour which

1153

02:04:08,330 --> 02:04:05,760

means it orbits the earth every 90

1154

02:04:10,189 --> 02:04:08,340

minutes so the crew members see a sunset

1155

02:04:12,229 --> 02:04:10,199

in a sunrise about every 45 minutes

1156

02:04:15,350 --> 02:04:12,239

which comes out to a total of 16

1157

02:04:17,270 --> 02:04:15,360

sunrises and 16 sunsets per day

1158

02:05:03,890 --> 02:04:17,280

send us your questions using the hashtag

1159

02:05:11,510 --> 02:05:08,050

13 turns on both two it is released

1160

02:05:19,030 --> 02:05:11,520

copy you can give King tweets a go to

1161

02:05:23,870 --> 02:05:21,950

and you're seeing a helmet cam view of

1162

02:05:25,790 --> 02:05:23,880

NASA astronaut Victor Glover as he

1163

02:05:27,350 --> 02:05:25,800

removes bolts on the Columbus module of

1164

02:05:29,689 --> 02:05:27,360

the space station

1165

02:05:32,030 --> 02:05:29,699

there's four bolts in total that need to

1166

02:05:48,109 --> 02:05:32,040

be removed in order for the kolka to be

1167

02:05:53,270 --> 02:05:50,510

in order to remove the bolts he's using

1168

02:05:55,069 --> 02:05:53,280

the PGT or pistol grip tool which is

1169

02:05:56,629 --> 02:05:55,079

essentially that space drill that we

1170

02:06:34,370 --> 02:05:56,639

discussed earlier

1171

02:06:34,380 --> 02:06:55,490

foreign

1172

02:07:13,609 --> 02:06:57,770

okay yeah let's go body in 15

1173

02:07:21,830 --> 02:07:15,830

and that stop motion there that's good

1174

02:07:27,169 --> 02:07:24,109

candy I'm still Bravo for

1175

02:07:31,490 --> 02:07:29,030

that's a good reading yeah you can

1176

02:07:46,189 --> 02:07:31,500

release both three and four again 13

1177

02:07:46,199 --> 02:08:17,270

and it turns on bolt three

1178

02:08:23,990 --> 02:08:19,370

a 13 on three doesn't seem to have

1179

02:08:24,000 --> 02:08:31,209

copy

1180

02:08:41,689 --> 02:08:33,530

you're going to put in a few additional

1181

02:08:46,790 --> 02:08:43,970

actually nothing was just harder to pull

1182

02:08:48,910 --> 02:08:46,800

out 13 was sufficient 13 turns on threes

1183

02:08:51,709 --> 02:08:48,920

for both

1184

02:08:53,450 --> 02:08:51,719

copy go for four and I'll just remind

1185

02:08:54,890 --> 02:08:53,460

you of a caution at this point please

1186

02:08:56,689 --> 02:08:54,900

don't use the Coca handrails for

1187

02:08:59,810 --> 02:08:56,699

translation until coca is fully

1188

02:08:59,820 --> 02:09:04,609

everyone

1189

02:09:04,619 --> 02:09:28,089

uh sirens on both four

1190

02:09:33,290 --> 02:09:31,430

Glover now working to remove the fourth

1191

02:09:37,490 --> 02:09:33,300

and final Bolt

1192

02:09:40,910 --> 02:09:39,109

passion I believe it was that you just

1193

02:09:45,169 --> 02:09:40,920

read us

1194

02:09:50,569 --> 02:09:47,510

you can store the PGT and then you can

1195

02:10:03,370 --> 02:09:50,579

release coca from the brt with the

1196

02:10:08,569 --> 02:10:06,649

and with all four bolts now successfully

1197

02:10:10,669 --> 02:10:08,579

removed Hopkins and Glover will work

1198

02:10:12,890 --> 02:10:10,679

together to install the kolka or

1199

02:10:16,189 --> 02:10:12,900

Columbus Ka band antenna to the Columbus

1200

02:10:16,199 --> 02:10:22,370

copy looks great

1201

02:10:26,330 --> 02:10:24,649

hey Harper yes sir this thing has got

1202

02:10:28,310 --> 02:10:26,340

some good inertia can you uh help me

1203

02:10:30,229 --> 02:10:28,320

just to make sure I can stop it you bet

1204

02:10:36,530 --> 02:10:30,239

all right all right coming to you a

1205

02:10:46,010 --> 02:10:38,270

okay I'm gonna try to take it off right

1206

02:10:51,109 --> 02:10:48,229

and I've got a handrail awesome thank

1207

02:10:51,119 --> 02:10:54,229

all right

1208

02:11:18,410 --> 02:10:56,930

enjoyed my brt

1209

02:11:18,420 --> 02:11:22,030

okay

1210

02:11:22,040 --> 02:11:25,129

all right

1211

02:11:30,770 --> 02:11:28,850

people's are covered

1212

02:11:31,970 --> 02:11:30,780

all right if you've got a face full of

1213

02:11:34,850 --> 02:11:31,980

cocoa

1214

02:11:42,530 --> 02:11:34,860

yeah if you want to you can GCA uh to

1215

02:11:46,729 --> 02:11:44,629

okay how does it look for you

1216

02:11:48,589 --> 02:11:46,739

so uh I have to go ahead and get a full

1217

02:11:50,629 --> 02:11:48,599

house and have it lined up and ready to

1218

02:11:51,709 --> 02:11:50,639

go it's uh I've lined up pretty good

1219

02:11:56,030 --> 02:11:51,719

here

1220

02:11:58,189 --> 02:11:56,040

it needs to jaw your end

1221

02:11:59,750 --> 02:11:58,199

and right about there looks good if I

1222

02:12:01,910 --> 02:11:59,760

could get a bolt out

1223

02:12:04,729 --> 02:12:01,920

okay so Kate I think we're I'm in a good

1224

02:12:07,490 --> 02:12:04,739

spot for Hopper to get a hand started

1225

02:12:10,550 --> 02:12:07,500

okay copy

1226

02:12:14,390 --> 02:12:12,709

and once you're happy with uh the

1227

02:12:16,850 --> 02:12:14,400

alignment and the clearance Hopper then

1228

02:12:22,370 --> 02:12:16,860

you can hand start bolt number one and

1229

02:12:22,380 --> 02:12:29,830

we want copies

1230

02:12:34,370 --> 02:12:32,209

Hopkins and Glover working together to

1231

02:12:35,990 --> 02:12:34,380

ensure that the kolka is properly

1232

02:12:37,609 --> 02:12:36,000

mounted

1233

02:12:39,410 --> 02:12:37,619

with that confirmation that it is

1234

02:12:44,640 --> 02:12:39,420

they'll now use those four bolts they

1235

02:12:44,650 --> 02:12:55,910

[Music]

1236

02:13:00,649 --> 02:12:58,550

first little hand start start these

1237

02:13:02,390 --> 02:13:00,659

bolts and then they'll use the PGT or

1238

02:13:04,850 --> 02:13:02,400

pistol grip tool which is the space

1239

02:13:06,140 --> 02:13:04,860

drill in order to complete installation

1240

02:13:21,169 --> 02:13:06,150

of the four bolts

1241

02:13:25,910 --> 02:13:23,629

you can see a helmet cam view of

1242

02:13:46,490 --> 02:13:25,920

astronaut Mike Hopkins as he hand skirts

1243

02:13:59,649 --> 02:13:48,649

gonna get the other bolts out from

1244

02:13:59,659 --> 02:15:04,370

it's clear

1245

02:15:10,370 --> 02:15:06,890

okay bolt one is in

1246

02:15:12,770 --> 02:15:10,380

it's made two turns

1247

02:16:01,490 --> 02:15:12,780

two turns on bolt one you can head start

1248

02:16:01,500 --> 02:16:14,870

there we go

1249

02:16:24,109 --> 02:16:17,629

all right hand started on to estimate

1250

02:16:24,119 --> 02:16:28,129

PS bolts are clear

1251

02:16:35,450 --> 02:16:30,530

let's see full one

1252

02:16:38,870 --> 02:16:35,460

is Zenith and uh both two is starboard

1253

02:16:40,969 --> 02:16:38,880

or I mean it's the Nader

1254

02:16:41,929 --> 02:16:40,979

all right copy all then you can give I

1255

02:16:45,290 --> 02:16:41,939

could go

1256

02:16:49,610 --> 02:16:45,300

to uh GCS over to bolt 3 location if he

1257

02:16:53,690 --> 02:16:50,830

you yeah

1258

02:16:55,730 --> 02:16:53,700

okay Luigi

1259

02:16:57,589 --> 02:16:55,740

if we go towards my feet about 20

1260

02:17:14,889 --> 02:16:57,599

centimeters

1261

02:17:19,669 --> 02:17:17,330

if you're just tuning in with us today

1262

02:17:21,469 --> 02:17:19,679

we're an hour and 19 minutes into

1263

02:17:25,610 --> 02:17:21,479

today's space walk which officially

1264

02:17:27,530 --> 02:17:25,620

began at 5 28 a.m this is the 233rd

1265

02:17:30,849 --> 02:17:27,540

spacewalk in support of station

1266

02:17:33,410 --> 02:17:30,859

maintenance assembly and upgrades

1267

02:17:36,290 --> 02:17:33,420

so far in today's spacewalk NASA

1268

02:17:38,270 --> 02:17:36,300

astronaut Victor Glover and Mike Hopkins

1269

02:17:40,490 --> 02:17:38,280

have ventured outside the space station

1270

02:17:44,270 --> 02:17:40,500

hatch bringing with them the kolka or

1271

02:17:49,129 --> 02:17:46,309

they work together to remove four bolts

1272

02:17:50,809 --> 02:17:49,139

from the Columbus panels

1273

02:17:53,809 --> 02:17:50,819

and now they're working together to

1274

02:18:00,650 --> 02:17:53,819

install the kolka where those bolts were

1275

02:18:05,330 --> 02:18:03,169

the Coca will enable an independent high

1276

02:18:07,370 --> 02:18:05,340

bandwidth communication link to European

1277

02:18:11,089 --> 02:18:07,380

ground stations

1278

02:18:32,509 --> 02:18:11,099

uh stop that's what it's starting into

1279

02:18:53,509 --> 02:18:42,349

motion continue

1280

02:19:13,190 --> 02:18:55,429

stop ocean

1281

02:19:16,490 --> 02:19:14,570

and like let us know if that's enough

1282

02:19:19,490 --> 02:19:16,500

GTA we'll call it complete if you're

1283

02:19:19,500 --> 02:19:26,330

okay

1284

02:19:38,389 --> 02:19:28,490

can you release that

1285

02:19:38,399 --> 02:19:52,790

there you go

1286

02:19:58,250 --> 02:19:54,349

you think you'll be able to do four

1287

02:20:02,389 --> 02:19:58,260

again okay Kate uh can you take me

1288

02:20:07,849 --> 02:20:02,399

that's on my right up 10 centimeters

1289

02:20:10,969 --> 02:20:09,230

top of your clearance and we've got a

1290

02:20:24,889 --> 02:20:10,979

good view on you as well just to watch

1291

02:20:29,090 --> 02:20:27,469

and that's good and then forward my head

1292

02:20:34,309 --> 02:20:29,100

10 centimeters

1293

02:20:38,330 --> 02:20:34,319

hey sorry just to jump in just want to

1294

02:20:44,690 --> 02:20:41,030

I read I am ready to Coco

1295

02:21:04,210 --> 02:20:46,190

yeah quickly

1296

02:21:14,690 --> 02:21:06,650

and I see both of you hand starting

1297

02:21:14,700 --> 02:21:44,929

foreign

1298

02:21:48,530 --> 02:21:47,450

okay uh okay how old are your hands

1299

02:21:49,969 --> 02:21:48,540

third or you can hold the right hand

1300

02:21:58,690 --> 02:21:49,979

starts

1301
02:22:03,290 --> 02:22:01,190
Hopkins and Glover continuing to work

1302
02:22:05,510 --> 02:22:03,300
through hand starting those four bolts

1303
02:22:08,270 --> 02:22:05,520
once they've completed this task they'll

1304
02:22:19,849 --> 02:22:08,280
use the PGT or pistol grip tool in order

1305
02:22:23,630 --> 02:22:21,650
thank you so

1306
02:22:26,330 --> 02:22:23,640
um Hopper you can retrieve your PDT

1307
02:22:30,889 --> 02:22:26,340
you're looking for Alpha 5 clockwise 2

1308
02:22:30,899 --> 02:23:02,510
happy on my way

1309
02:23:02,520 --> 02:23:07,969
okay I'm keeping my ppg

1310
02:23:07,979 --> 02:23:18,230
ah

1311
02:23:18,240 --> 02:23:22,450
I'm an arm

1312
02:23:22,460 --> 02:23:28,310
and it's Alpha five the clockwise two

1313
02:23:33,889 --> 02:23:30,889

[Music]

1314

02:23:40,910 --> 02:23:37,190
the motor LED test and Battery

1315

02:23:40,920 --> 02:23:44,110
I respect

1316

02:23:51,290 --> 02:23:48,650
clockwise to accept

1317

02:23:54,590 --> 02:23:51,300
all right like if you're happy then the

1318

02:23:55,730 --> 02:23:54,600
hopper you have a go to torque bolt

1319

02:23:57,170 --> 02:23:55,740
number one

1320

02:24:00,110 --> 02:23:57,180
we're looking for ten turns

1321

02:24:02,510 --> 02:24:00,120
[Applause]

1322

02:24:25,790 --> 02:24:02,520
into that

1323

02:24:34,570 --> 02:24:28,610
okay it torqued out

1324

02:24:34,580 --> 02:24:42,070
copy 2.0 or 6.9 on the torque five turns

1325

02:24:42,080 --> 02:25:08,210
okay stand by we're checking

1326

02:25:08,220 --> 02:25:26,650

that's still loose too

1327

02:25:31,130 --> 02:25:28,730

and Hopper

1328

02:25:32,809 --> 02:25:31,140

um we'd uh appreciate if you could

1329

02:25:34,490 --> 02:25:32,819

assess your body position see if there's

1330

02:25:37,070 --> 02:25:34,500

a better body position to get into and

1331

02:25:38,990 --> 02:25:37,080

then verify the socket is fully engaged

1332

02:25:41,650 --> 02:25:39,000

and then we'll reattach with the same

1333

02:25:46,370 --> 02:25:41,660

settings of alpha five

1334

02:26:20,210 --> 02:25:48,290

all right to that

1335

02:26:27,650 --> 02:26:23,270

okay there we go

1336

02:26:40,969 --> 02:26:31,370

zero turn 6.8 on the torque

1337

02:26:40,979 --> 02:26:44,210

yep go ahead

1338

02:26:48,050 --> 02:26:46,190

when I was removing bolts one and two

1339

02:26:50,330 --> 02:26:48,060

one came out pretty easily after I broke

1340

02:26:53,809 --> 02:26:50,340

torque uh it was a pretty low running

1341

02:26:55,849 --> 02:26:53,819

tour too at a pretty high running tour

1342

02:27:26,450 --> 02:26:55,859

I guess that would be

1343

02:27:47,770 --> 02:27:28,790

you're on one right after

1344

02:27:53,469 --> 02:27:50,750

all right Hopper uh plan is we're going

1345

02:27:57,170 --> 02:27:53,479

to try to release bolt one and then uh

1346

02:27:59,929 --> 02:27:57,180

reinstall it again so you can uh

1347

02:28:03,050 --> 02:27:59,939

oh sorry uh release it one turn and then

1348

02:28:06,410 --> 02:28:03,060

uh we'll reattempt to install it so uh

1349

02:28:07,849 --> 02:28:06,420

PDT settings Bravo 7 counterclockwise

1350

02:28:13,130 --> 02:28:07,859

two

1351
02:28:13,140 --> 02:28:21,410
hey Bravo

1352
02:28:21,420 --> 02:28:31,969
level seven

1353
02:28:37,370 --> 02:28:33,530
and

1354
02:28:40,270 --> 02:28:37,380
apply counterclockwise to

1355
02:28:44,150 --> 02:28:40,280
you're looking for one turn

1356
02:28:49,250 --> 02:28:46,610
okay here we go

1357
02:28:51,830 --> 02:28:49,260
now a little over one hour and

1358
02:28:55,070 --> 02:28:51,840
splits in today's spacewalk

1359
02:28:57,349 --> 02:28:55,080
this view from NASA astronaut Mike

1360
02:28:59,809 --> 02:28:57,359
Hopkins helmet cam as he works through

1361
02:29:03,590 --> 02:28:59,819
procedures to continue bolt installation

1362
02:29:11,150 --> 02:29:05,210
we're going for five we're gonna keep it

1363
02:29:11,160 --> 02:29:14,750

that's a firm

1364

02:29:14,760 --> 02:29:28,969

after that

1365

02:29:28,979 --> 02:29:37,790

and turning

1366

02:29:37,800 --> 02:30:01,610

holler here

1367

02:30:01,620 --> 02:30:10,849

that's an attorney

1368

02:30:18,370 --> 02:30:15,010

and I got an additional returns

1369

02:30:26,690 --> 02:30:18,380

25.4 on the torch

1370

02:30:26,700 --> 02:30:46,150

all right stand by while we discuss

1371

02:30:51,889 --> 02:30:49,309

all right Hopper as we assess we'll go

1372

02:30:53,809 --> 02:30:51,899

ahead and work on bolt two so you can go

1373

02:30:55,849 --> 02:30:53,819

ahead and um

1374

02:30:59,870 --> 02:30:55,859

install bolt number two we're looking

1375

02:31:09,050 --> 02:31:02,150

let me go back to Alpha five yep that's

1376

02:31:09,060 --> 02:31:23,510

Alpha five

1377

02:31:29,710 --> 02:31:26,030

clockwise

1378

02:31:35,510 --> 02:31:33,170

the only thing uh other thing I can

1379

02:31:37,910 --> 02:31:35,520

you know possibility is that I could

1380

02:31:41,349 --> 02:31:37,920

have had more turns in initially

1381

02:31:44,450 --> 02:31:41,359

it was kind of hard to tell in exactly

1382

02:32:01,910 --> 02:31:44,460

started fighting that's right that's

1383

02:32:05,270 --> 02:32:03,710

teams on the ground here in Mission

1384

02:32:07,670 --> 02:32:05,280

Control are now assessing the

1385

02:32:10,010 --> 02:32:07,680

installation of the first bolt meanwhile

1386

02:32:12,110 --> 02:32:10,020

you're still seeing a helmet cam view of

1387

02:32:15,450 --> 02:32:12,120

a NASA astronaut Mike Hopkins as he

1388

02:32:30,650 --> 02:32:15,460

works on installing bolt number two

1389

02:32:40,969 --> 02:32:32,469

okay

1390

02:32:46,210 --> 02:32:42,650

and

1391

02:32:50,690 --> 02:32:49,190

let me let me read that back you got six

1392

02:32:55,670 --> 02:32:50,700

turns

1393

02:33:02,570 --> 02:32:55,680

and uh 6.8 on the torque for bolt two

1394

02:33:02,580 --> 02:33:06,650

all right standby

1395

02:33:06,660 --> 02:33:15,110

right here

1396

02:33:20,389 --> 02:33:17,270

all right Hopper we're gonna repeat what

1397

02:33:23,870 --> 02:33:20,399

we did on bolt one uh so PTT settings

1398

02:33:26,210 --> 02:33:23,880

Bravo 7 counterclockwise two we're going

1399

02:33:30,830 --> 02:33:26,220

to release the bolt one turn and then

1400

02:33:30,840 --> 02:33:43,969

for Bravo 7 settings

1401
02:33:43,979 --> 02:33:51,360
foreign

1402
02:33:51,370 --> 02:33:58,610
[Music]

1403
02:33:58,620 --> 02:34:03,110
you're releasing one turn

1404
02:34:08,330 --> 02:34:05,090
right here

1405
02:34:12,830 --> 02:34:10,670
one turn

1406
02:34:18,830 --> 02:34:12,840
all right then we're gonna reinstall it

1407
02:34:23,510 --> 02:34:21,230
level seven

1408
02:34:32,750 --> 02:34:23,520
clockwise to

1409
02:34:32,760 --> 02:34:41,870
and turning

1410
02:34:46,550 --> 02:34:44,990
and one turn 25.4 on the torque free

1411
02:34:52,610 --> 02:34:46,560
might

1412
02:34:52,620 --> 02:35:32,870
standby

1413
02:35:37,130 --> 02:35:34,610

yeah it's on the bottom of the camera

1414

02:35:49,730 --> 02:35:37,140
assembly there's Velcro

1415

02:35:49,740 --> 02:35:58,010
a bunch of pictures being taken

1416

02:36:02,450 --> 02:36:00,290
guys uh big picture

1417

02:36:04,370 --> 02:36:02,460
um we're gonna leave both one and two as

1418

02:36:05,690 --> 02:36:04,380
our for right now uh we're still

1419

02:36:08,450 --> 02:36:05,700
assessing but we'll go ahead and get

1420

02:36:10,969 --> 02:36:08,460
working on bolt three uh so lke you can

1421

02:36:24,830 --> 02:36:10,979
grab your PGT I'm gonna get back to you

1422

02:36:24,840 --> 02:36:36,250
prefer

1423

02:36:42,110 --> 02:36:38,929
and I we're gonna go straight to the

1424

02:36:49,510 --> 02:36:42,120
higher torque settings so Bravo seven

1425

02:36:53,809 --> 02:36:52,130
we're in a brief expected Handover

1426

02:36:55,429 --> 02:36:53,819

between satellites we'll gain

1427

02:37:13,550 --> 02:36:55,439

Communications with the crew here

1428

02:37:19,690 --> 02:37:16,490

we have a Handover probably I'll let you

1429

02:37:22,370 --> 02:37:19,700

want to bet he's going to say probably

1430

02:37:24,170 --> 02:37:22,380

you read my mind we just had a Handover

1431

02:37:29,330 --> 02:37:24,180

and you can configure to Bravo 7

1432

02:37:36,770 --> 02:37:31,929

seven o'clockwise too set

1433

02:37:38,809 --> 02:37:36,780

okay then you can install bolts three or

1434

02:37:59,030 --> 02:37:38,819

four your choice we're looking for ten

1435

02:38:06,590 --> 02:38:03,010

hey ub2 got the six and a half turns

1436

02:38:08,510 --> 02:38:06,600

25.4 on the torque on Bolt 4.

1437

02:38:11,570 --> 02:38:08,520

I'm sorry say I say again number of

1438

02:38:11,580 --> 02:38:15,110

six point five

1439

02:38:22,910 --> 02:38:17,750

all right six and a half turns on bolt

1440

02:38:22,920 --> 02:38:29,830

25.4

1441

02:38:36,650 --> 02:38:32,150

okay we'll move to bolt number three

1442

02:38:36,660 --> 02:39:03,969

of course

1443

02:39:08,330 --> 02:39:06,650

the two spacewalkers today have run into

1444

02:39:10,370 --> 02:39:08,340

some resistance as they work to drive

1445

02:39:11,690 --> 02:39:10,380

the bolts into the Columbus module but

1446

02:39:13,250 --> 02:39:11,700

are continuing to work through

1447

02:39:15,110 --> 02:39:13,260

procedures with the ground to get the

1448

02:39:16,790 --> 02:39:15,120

bolts fully secured

1449

02:39:21,110 --> 02:39:16,800

of interns

1450

02:39:25,490 --> 02:39:21,120

green light 25.4 on Bolt 3.

1451

02:39:39,650 --> 02:39:28,910

seven seven turns on hole three

1452

02:39:45,410 --> 02:39:41,809

all right um

1453

02:39:48,650 --> 02:39:45,420

you can now both of you tie off uh the

1454

02:39:51,590 --> 02:39:48,660

old Columbus mdps bolts using the

1455

02:39:51,750 --> 02:39:51,600

integrated wire Tire

1456

02:39:53,389 --> 02:39:51,760

thank you

1457

02:39:54,710 --> 02:39:53,399

[Applause]

1458

02:40:11,090 --> 02:39:54,720

everyone

1459

02:40:11,100 --> 02:40:24,790

Andy can I take my red off of it now

1460

02:40:24,800 --> 02:40:29,450

standby just a second

1461

02:40:29,460 --> 02:40:58,730

bye

1462

02:41:05,150 --> 02:41:02,630

holes for ev1 are tied off A3 is tied

1463

02:41:39,710 --> 02:41:05,160

off and offers could you give me a hand

1464

02:41:39,720 --> 02:42:17,330

foreign

1465

02:42:22,370 --> 02:42:19,070

firm that was 10 centimeters to the

1466

02:42:24,290 --> 02:42:22,380

right last time okay uh let's definitely

1467

02:42:26,389 --> 02:42:24,300

meters back out we can go to incentives

1468

02:42:28,130 --> 02:42:26,399

I'm sorry centimeters to the left

1469

02:42:29,690 --> 02:42:28,140

Happy 10 centimeters to the left and if

1470

02:42:39,889 --> 02:42:29,700

you'll just lean back a little bit to uh

1471

02:42:39,899 --> 02:42:50,150

happy go

1472

02:42:54,650 --> 02:42:52,309

motion

1473

02:43:03,889 --> 02:42:54,660

it's a good question

1474

02:43:03,899 --> 02:43:20,650

okay do you say complete thank you

1475

02:43:26,330 --> 02:43:23,389

all right I can offer

1476

02:43:29,150 --> 02:43:26,340

um we just like your help on assessing

1477

02:43:30,349 --> 02:43:29,160

um how well Coke has installed so if you

1478

02:43:33,230 --> 02:43:30,359

can see there's any

1479

02:43:37,309 --> 02:43:33,240

wiggle in it and if it's flush with the

1480

02:43:37,319 --> 02:43:40,010

okay for me

1481

02:43:46,790 --> 02:43:42,410

doing

1482

02:43:49,730 --> 02:43:46,800

the uh Diablo the interface well if I

1483

02:43:52,790 --> 02:43:49,740

look at the interface for maybe one

1484

02:43:57,050 --> 02:43:52,800

level four is the top you know the foot

1485

02:43:59,030 --> 02:43:57,060

the foot plate is flush with the surface

1486

02:44:04,610 --> 02:43:59,040

one

1487

02:44:04,620 --> 02:44:13,670

well two is flush with the surface

1488

02:44:19,309 --> 02:44:15,950

I've got no wiggle

1489

02:44:21,050 --> 02:44:19,319

now I'm getting another pretty good

1490

02:44:24,349 --> 02:44:21,060

pretty good Thug

1491

02:44:28,450 --> 02:44:24,359

no wiggle from the port side

1492

02:44:28,460 --> 02:44:33,950

all right copy uh stand by just a second

1493

02:44:33,960 --> 02:44:42,830

thank you

1494

02:44:46,370 --> 02:44:45,230

yeah it's my bet is I put in more turns

1495

02:44:48,830 --> 02:44:46,380

at the beginning

1496

02:44:50,750 --> 02:44:48,840

I mean these did the same thing no yeah

1497

02:44:53,750 --> 02:44:50,760

I think it's a difference in the bolts

1498

02:44:53,760 --> 02:45:08,929

a good point

1499

02:45:14,269 --> 02:45:11,269

even if they are the same boats we took

1500

02:45:17,389 --> 02:45:14,279

out 13 turns on these and if it was the

1501

02:45:19,730 --> 02:45:17,399

same blank bolt he also put this you

1502

02:45:22,130 --> 02:45:19,740

know quarter inch of the foot off of

1503

02:45:24,650 --> 02:45:22,140

they are focused that takes a quarter

1504

02:45:26,330 --> 02:45:24,660

inch of the boat away yeah and she's

1505

02:45:28,910 --> 02:45:26,340

gonna equal less turns less threads to

1506

02:45:34,010 --> 02:45:32,210

all right we um yeah

1507

02:45:36,950 --> 02:45:34,020

we're happy down here we're gonna say

1508

02:45:38,870 --> 02:45:36,960

coca is installed and secure so we'll go

1509

02:45:41,690 --> 02:45:38,880

ahead and continue with the rest of the

1510

02:45:43,969 --> 02:45:41,700

procedure uh hopper for you you can

1511

02:45:46,429 --> 02:45:43,979

retrieve the t-handle tools and the Reds

1512

02:45:50,030 --> 02:45:46,439

and the large small rep that's on the

1513

02:45:50,040 --> 02:45:52,990

work

1514

02:45:56,929 --> 02:45:55,610

and like you can steal your PGT if you

1515

02:45:58,190 --> 02:45:56,939

haven't you can release your rep from

1516

02:46:07,690 --> 02:45:58,200

Coca and then we'll take a glove

1517

02:46:12,290 --> 02:46:10,849

now one hour and 48 minutes in today's

1518

02:46:16,550 --> 02:46:12,300

spacewalk

1519

02:46:18,230 --> 02:46:16,560

Coca they did run into some resistance

1520

02:46:19,849 --> 02:46:18,240

as they were driving bolts into the

1521

02:46:21,830 --> 02:46:19,859

Columbus module

1522

02:46:23,210 --> 02:46:21,840

but they worked with the ground and

1523

02:46:25,250 --> 02:46:23,220

checked to see if there was any movement

1524

02:46:27,290 --> 02:46:25,260

on kolka and it was determined there was

1525

02:46:29,330 --> 02:46:27,300

not so coca is now considered

1526

02:46:31,250 --> 02:46:29,340

successfully installed

1527

02:46:32,269 --> 02:46:31,260

look the same except a couple of black

1528

02:46:34,309 --> 02:46:32,279

smudges

1529

02:46:36,530 --> 02:46:34,319

my indexing middle finger of my right

1530

02:46:42,429 --> 02:46:38,690

it's like degrees or something

1531

02:46:47,690 --> 02:46:42,439

and uh Happy's dry

1532

02:46:53,389 --> 02:46:50,450

hopper for you just a reminder to leave

1533

02:46:55,790 --> 02:46:53,399

the Gap spanner installed for now

1534

02:46:57,170 --> 02:46:55,800

um once you've returned the piano tools

1535

02:46:59,210 --> 02:46:57,180

and the rets and the large small red

1536

02:47:00,889 --> 02:46:59,220

back to the coolock bag you can put in

1537

02:47:02,389 --> 02:47:00,899

your Rich men's fairlead and then we'll

1538

02:47:04,000 --> 02:47:02,399

take a glove inspection half track from

1539

02:47:06,110 --> 02:47:04,010

you too

1540

02:47:10,849 --> 02:47:06,120

[Applause]

1541

02:47:15,650 --> 02:47:12,769

and lke if you're ready then you can

1542

02:47:17,269 --> 02:47:15,660

work with Kate and so we teach you

1543

02:47:19,490 --> 02:47:17,279

um as required to access the cable

1544

02:47:28,190 --> 02:47:19,500

bundles and your next thing will be to

1545

02:47:28,200 --> 02:47:34,309

I can get the tables off from here

1546

02:47:40,730 --> 02:47:38,410

before I'm taking them both Andy rip

1547

02:47:44,450 --> 02:47:40,740

yep so if you're happy in that position

1548

02:47:46,790 --> 02:47:44,460

then you can verify that the adjustable

1549

02:47:49,490 --> 02:47:46,800

equipment center the large small is on

1550

02:47:51,290 --> 02:47:49,500

the black cap keeper and then you can

1551
02:47:59,809 --> 02:47:51,300
attach one into the temporary cover

1552
02:48:07,309 --> 02:48:03,950
do not have the black cap keeper

1553
02:48:09,830 --> 02:48:07,319
standby yes I do it's very

1554
02:48:13,610 --> 02:48:09,840
keeper

1555
02:48:16,250 --> 02:48:13,620
friendship to a d-ring on the large

1556
02:48:20,690 --> 02:48:16,260
small adjustable and the large Hook is

1557
02:48:23,809 --> 02:48:20,700
attempts to be covered in real

1558
02:48:25,550 --> 02:48:23,819
all right then you can demate

1559
02:48:40,849 --> 02:48:25,560
um all those caps on the black cap

1560
02:48:47,990 --> 02:48:43,010
all right P6

1561
02:48:54,410 --> 02:48:52,309
made it thank you in my van no fast next

1562
02:48:55,910 --> 02:48:54,420
up for our space walking Duo NASA

1563
02:48:57,830 --> 02:48:55,920

astronaut Victor Glover will work to

1564

02:49:01,370 --> 02:48:57,840

Route some cables on the Coca which is

1565

02:49:05,570 --> 02:49:01,380

the KA band antenna in order to provide

1566

02:49:14,349 --> 02:49:06,590

speed

1567

02:49:19,309 --> 02:49:17,269

meanwhile NASA astronaut Mike Hopkins is

1568

02:49:21,950 --> 02:49:19,319

heading over to bartolomeo to finish up

1569

02:49:24,050 --> 02:49:21,960

worksite preparations

1570

02:49:32,030 --> 02:49:24,060

hooked into the Mi band

1571

02:49:36,170 --> 02:49:34,130

following this the duo will meet back up

1572

02:49:39,870 --> 02:49:36,180

at the bartolomeo science platform which

1573

02:49:42,590 --> 02:49:39,880

is an external science research platform

1574

02:49:44,030 --> 02:49:42,600

[Music]

1575

02:49:49,190 --> 02:49:44,040

and they'll work together to Route

1576

02:49:54,490 --> 02:49:51,710

next you can you can take an mws arrest

1577

02:49:58,670 --> 02:49:54,500

to the adjustable equipment tether

1578

02:50:01,250 --> 02:49:58,680

that's holding the P1 and P2 plug caps

1579

02:50:06,530 --> 02:50:01,260

and then you can demate the plug caps

1580

02:50:06,540 --> 02:50:28,969

work

1581

02:50:40,550 --> 02:50:31,490

all right I have a red on the small hook

1582

02:50:44,929 --> 02:50:43,250

it's the uh the small small that the the

1583

02:50:48,290 --> 02:50:44,939

two hooks on the small small should be

1584

02:50:52,250 --> 02:50:48,300

going to the P1 and the t2 plug caps on

1585

02:50:58,610 --> 02:50:53,330

that's right

1586

02:51:04,550 --> 02:51:00,830

uh to be adjustable that's on the cat's

1587

02:51:09,710 --> 02:51:07,790

all right then you can um demate the P1

1588

02:51:14,950 --> 02:51:09,720

and the P2 caps and you can store them

1589

02:51:21,950 --> 02:51:19,250

okay Andy I have the large small that is

1590

02:51:25,370 --> 02:51:21,960

code and crew lock bag one

1591

02:51:26,929 --> 02:51:25,380

as well as the Glover continuing to work

1592

02:51:36,830 --> 02:51:26,939

through procedures in order to Route

1593

02:51:47,750 --> 02:51:38,269

okay and then we'll take a glove

1594

02:51:54,130 --> 02:51:50,510

the Caps are on and adjustable related

1595

02:51:58,070 --> 02:51:56,150

copy and these are the Caps we'll need

1596

02:52:00,170 --> 02:51:58,080

down at bartolomeo so you can grab your

1597

02:52:03,290 --> 02:52:00,180

mini workstation and effector if you

1598

02:52:06,110 --> 02:52:03,300

need to and grab cable bundles one and

1599

02:52:07,849 --> 02:52:06,120

two and then release the wire ties from

1600

02:52:34,670 --> 02:52:07,859

both cable bundles so that you have the

1601
02:52:40,150 --> 02:52:36,730
and Andy from YouTube

1602
02:52:42,769 --> 02:52:40,160
the change to gloves

1603
02:52:45,950 --> 02:52:42,779
coffee in the Richmond's fair lead is in

1604
02:52:50,450 --> 02:52:48,769
and it is installed

1605
02:52:53,090 --> 02:52:50,460
excellent so you'll be heading back down

1606
02:52:54,530 --> 02:52:53,100
to the bartolomeo platform uh I'll ask

1607
02:53:03,889 --> 02:52:54,540
you to put in a poor man's fair lead

1608
02:53:08,330 --> 02:53:06,290
am I completely releasing the uh wire

1609
02:53:11,030 --> 02:53:08,340
tie or should I leave it

1610
02:53:15,349 --> 02:53:11,040
onto the cables

1611
02:53:21,110 --> 02:53:18,889
yeah so you should be releasing uh

1612
02:53:23,510 --> 02:53:21,120
full length of the cables but I think

1613
02:53:29,450 --> 02:53:23,520

the wire tie stays on the

1614

02:53:33,290 --> 02:53:31,429

okay that's not how I wiretided but I

1615

02:53:35,330 --> 02:53:33,300

will put it back onto the temporary

1616

02:53:36,530 --> 02:53:35,340

cover handrail

1617

02:53:38,809 --> 02:53:36,540

actually

1618

02:53:40,790 --> 02:53:38,819

um I think they should be staying on the

1619

02:53:42,050 --> 02:53:40,800

cable bundles about halfway in the

1620

02:53:44,030 --> 02:53:42,060

length where you release them from

1621

02:53:45,710 --> 02:53:44,040

because that'll try to

1622

02:53:50,269 --> 02:53:45,720

keep them together since there's nothing

1623

02:53:53,389 --> 02:53:50,279

to tie them off on towards as a as a

1624

02:53:57,110 --> 02:53:55,190

yeah I have the full length released

1625

02:53:58,429 --> 02:53:57,120

it's just anchored to the middle of a

1626
02:54:00,650 --> 02:53:58,439
bundle two and if you're okay with that

1627
02:54:04,730 --> 02:54:00,660
that's what I'll leave them that way

1628
02:54:04,740 --> 02:54:17,050
you understand for one

1629
02:54:21,349 --> 02:54:19,429
and Hopper big picture for you you're

1630
02:54:22,849 --> 02:54:21,359
going to the Nader side of bartolomeo

1631
02:54:28,010 --> 02:54:22,859
and you're going to be releasing cable

1632
02:54:28,020 --> 02:54:48,889
if you want coffee

1633
02:54:52,250 --> 02:54:50,690
all right Cadence to meet you I'll be

1634
02:54:54,290 --> 02:54:52,260
ready to go soon

1635
02:54:55,670 --> 02:54:54,300
Andy I've got the full length of both

1636
02:55:08,530 --> 02:54:55,680
cable bundles

1637
02:55:20,750 --> 02:55:12,230
P4 P5 or P6 one of those has to be mated

1638
02:55:26,630 --> 02:55:22,429

copy that

1639

02:55:30,830 --> 02:55:28,790

all right Kate so we can have a go to

1640

02:55:32,809 --> 02:55:30,840

published did you say to publish I have

1641

02:55:35,030 --> 02:55:32,819

the ogc to publish the Coca install can

1642

02:55:37,610 --> 02:55:35,040

you just check your Ingress Aid in for

1643

02:55:39,469 --> 02:55:37,620

us and we've got great clearances of

1644

02:55:41,990 --> 02:55:39,479

your mini workstation end effector just

1645

02:55:45,490 --> 02:55:42,000

watch that as we go towards your feet

1646

02:55:49,370 --> 02:55:45,500

about one meter okay

1647

02:55:50,750 --> 02:55:49,380

I am good for the calm Andy uh well

1648

02:55:53,469 --> 02:55:50,760

actually let me get some settings real

1649

02:55:55,990 --> 02:55:53,479

quick okay standby

1650

02:55:58,730 --> 02:55:56,000

Hopper settings are Bravo 3

1651
02:56:01,790 --> 02:55:58,740
counterclockwise two you're looking for

1652
02:56:05,870 --> 02:56:01,800
13 turns on bolt number one on cable

1653
02:56:10,969 --> 02:56:08,230
okay I copy throttle three

1654
02:56:14,450 --> 02:56:10,979
counterclockwise two

1655
02:56:18,769 --> 02:56:16,550
all right I'm good with the call

1656
02:56:23,570 --> 02:56:18,779
if you ever go to GC to publish

1657
02:56:27,650 --> 02:56:25,790
NASA astronaut Victor Glover now making

1658
02:56:30,889 --> 02:56:27,660
his way over to the bartolomeo science

1659
02:56:32,809 --> 02:56:30,899
platform on board the Canada arm 2. NASA

1660
02:56:35,870 --> 02:56:32,819
astronaut Kate Rubens in control of the

1661
02:56:37,730 --> 02:56:35,880
Canada arm 2 inside the space station

1662
02:56:39,710 --> 02:56:37,740
once Glover makes his way over to the

1663
02:56:42,170 --> 02:56:39,720

bartolomeo platform he'll meet up with

1664

02:56:43,790 --> 02:56:42,180

NASA astronauts NASA astronaut Mike

1665

02:56:45,530 --> 02:56:43,800

Hopkins who's currently at the

1666

02:56:47,870 --> 02:56:45,540

bartolomeo platform

1667

02:56:50,269 --> 02:56:47,880

Hopkins is working on releasing cable

1668

02:56:57,530 --> 02:56:50,279

clamps from the bartolomeo science

1669

02:57:02,210 --> 02:57:00,230

these clamps need to be removed and

1670

02:57:03,950 --> 02:57:02,220

opened up in order to remove a cab link

1671

02:57:20,150 --> 02:57:03,960

that needs to get routed in order to

1672

02:57:25,990 --> 02:57:23,389

and I scared you're published

1673

02:57:29,929 --> 02:57:26,000

yeah if you could take the body in

1674

02:57:34,070 --> 02:57:32,389

start with 10 centimeters

1675

02:57:41,469 --> 02:57:34,080

the end starting with 10 centimeters let

1676
02:57:41,479 --> 02:57:45,410
good motion continue

1677
02:57:45,420 --> 02:57:59,530
update

1678
02:57:59,540 --> 02:58:07,370
uh complete

1679
02:58:13,370 --> 02:58:10,429
and Andy 11's released we're now two

1680
02:58:14,870 --> 02:58:13,380
hours into the 233rd spacewalk in

1681
02:58:17,150 --> 02:58:14,880
support of space station maintenance

1682
02:58:20,690 --> 02:58:17,160
assembly and upgrades the spacewalk

1683
02:58:22,790 --> 02:58:20,700
officially began at 5 28 A.M this

1684
02:58:32,690 --> 02:58:22,800
morning and is set to last approximately

1685
02:58:38,630 --> 02:58:36,349
I got the same settings Bravo three kind

1686
02:58:40,910 --> 02:58:38,640
of clockwise too

1687
02:58:47,929 --> 02:58:40,920
that's correct and we expect 13 turns on

1688
02:58:47,939 --> 02:58:51,410

go ahead Ike

1689

02:58:51,420 --> 02:58:54,910

we need to make tables

1690

02:58:59,929 --> 02:58:57,530

in today's space walk the space walking

1691

02:59:02,090 --> 02:58:59,939

Duo of NASA astronaut Victor Glover and

1692

02:59:04,130 --> 02:59:02,100

Mike Hopkins egress the hatch and

1693

02:59:06,650 --> 02:59:04,140

brought out the kolka or Columbus Ka

1694

02:59:08,330 --> 02:59:06,660

band antenna they made their way over to

1695

02:59:10,490 --> 02:59:08,340

the Columbus module of the space station

1696

02:59:13,010 --> 02:59:10,500

and removed four bolts on the Columbus

1697

02:59:15,530 --> 02:59:13,020

panels they then installed the Coca

1698

02:59:17,389 --> 02:59:15,540

where the bolts were and secured kolka

1699

02:59:19,490 --> 02:59:17,399

to the Columbus module

1700

02:59:22,130 --> 02:59:19,500

NASA astronaut Victor Glover then routed

1701
02:59:24,530 --> 02:59:22,140
kolka cables and now the duo is heading

1702
02:59:26,990 --> 02:59:24,540
to the bartolomeo science platform

1703
02:59:29,150 --> 02:59:27,000
where they'll remove clamps holding

1704
02:59:51,349 --> 02:59:29,160
cabling in place which will then be

1705
03:00:01,730 --> 02:59:56,230
hey p686 mated liver forward over Center

1706
03:00:07,450 --> 03:00:05,030
I have P3 j3 note 5.

1707
03:00:14,630 --> 03:00:07,460
10 still

1708
03:00:14,640 --> 03:00:19,250
clever forward over Center have made it

1709
03:00:19,260 --> 03:00:28,429
three made it to j3

1710
03:00:33,110 --> 03:00:30,910
the duo now working together to connect

1711
03:00:39,530 --> 03:00:33,120
cables on the bartolomeo science

1712
03:01:35,030 --> 03:00:43,010
if he for good poems good Emi band G4 is

1713
03:01:39,650 --> 03:01:37,429

all right

1714

03:01:55,929 --> 03:01:39,660

the p4j4 made it lever forward over

1715

03:01:59,809 --> 03:01:58,309

in this view here you see NASA

1716

03:02:01,370 --> 03:01:59,819

astronauts Mike Hopkins and Victor

1717

03:02:03,050 --> 03:02:01,380

Glover working together to install

1718

03:02:05,630 --> 03:02:03,060

cables on the bartolomeo science

1719

03:02:08,090 --> 03:02:05,640

platform you also see a great view of

1720

03:02:10,070 --> 03:02:08,100

the SpaceX crew Dragon resilience which

1721

03:02:13,610 --> 03:02:10,080

both spacewalkers arrived on back in

1722

03:02:13,620 --> 03:02:20,150

a little discoloration in the center

1723

03:02:20,160 --> 03:02:24,710

and the socket looks good

1724

03:02:24,720 --> 03:02:36,349

copy

1725

03:02:41,929 --> 03:02:40,309

needed cover forward over Center

1726
03:02:47,769 --> 03:02:41,939
all right Andy confirm I'm go for one

1727
03:02:53,630 --> 03:02:50,510
yep any order for one and two it's in

1728
03:02:57,950 --> 03:02:55,370
okay

1729
03:03:01,610 --> 03:02:57,960
two good friends could be My Band no

1730
03:03:01,620 --> 03:03:04,610
half

1731
03:03:14,990 --> 03:03:08,870
made it

1732
03:03:19,309 --> 03:03:17,630
day one no five good pins get em other

1733
03:03:21,110 --> 03:03:19,319
band j-1s

1734
03:03:22,320 --> 03:03:21,120
go forward

1735
03:03:36,170 --> 03:03:22,330
whatever is that

1736
03:03:43,550 --> 03:03:37,550
needed

1737
03:03:43,560 --> 03:03:49,070
P1 made it to J1

1738
03:03:53,150 --> 03:03:51,469

that should be all of the uh all the

1739

03:03:54,530 --> 03:03:53,160

connections so you can verify that all

1740

03:03:56,090 --> 03:03:54,540

your tools and tethers are clear of the

1741

03:04:00,710 --> 03:03:56,100

work site and then we'll take a glove

1742

03:04:00,720 --> 03:04:08,530

but

1743

03:04:19,429 --> 03:04:12,349

tools and tethers are all

1744

03:04:19,439 --> 03:04:29,150

it's dry

1745

03:04:35,269 --> 03:04:32,230

and no change to the gloves

1746

03:04:37,250 --> 03:04:35,279

coffee no change to the gloves uh you

1747

03:04:39,170 --> 03:04:37,260

can now work with Kate and sweetie to

1748

03:04:41,150 --> 03:04:39,180

take you to the Coca cable back off

1749

03:04:47,410 --> 03:04:41,160

position which will continue to the

1750

03:04:50,870 --> 03:04:49,370

I'm good

1751

03:04:53,150 --> 03:04:50,880

all right

1752

03:04:54,590 --> 03:04:53,160

okay so we say you have a go to both

1753

03:04:56,769 --> 03:04:54,600

back off and take me all the way to the

1754

03:05:02,570 --> 03:04:56,779

Barcelona

1755

03:05:08,140 --> 03:05:05,389

and uh just before you start uh Hopper

1756

03:05:11,290 --> 03:05:08,150

how many uh clamps Have You released

1757

03:05:11,290 --> 03:05:11,300

[Applause]

1758

03:05:17,030 --> 03:05:13,910

seven eight nine

1759

03:05:20,150 --> 03:05:17,040

I can get 10 real quick come in a good

1760

03:05:32,030 --> 03:05:20,160

position or I can get out of bike's way

1761

03:05:35,510 --> 03:05:33,170

okay

1762

03:05:37,190 --> 03:05:35,520

um I think we'll leave that for Ike so

1763

03:05:40,550 --> 03:05:37,200

if um

1764

03:05:48,830 --> 03:05:40,560

translate back up and remove your poor

1765

03:05:48,840 --> 03:05:56,929

okay stand by Katy

1766

03:06:00,889 --> 03:05:58,550

actually let's go ahead to the Coco back

1767

03:06:02,150 --> 03:06:00,899

off thank you offer from

1768

03:06:22,550 --> 03:06:02,160

okay

1769

03:06:22,560 --> 03:06:24,710

yeah

1770

03:06:24,720 --> 03:06:48,950

bit motion

1771

03:06:53,630 --> 03:06:50,809

and like this is a published location

1772

03:06:54,590 --> 03:06:53,640

copy stay here four seconds you say

1773

03:07:02,410 --> 03:06:54,600

complete

1774

03:07:02,420 --> 03:07:06,469

you're clear

1775

03:07:12,410 --> 03:07:08,510

and Andy I did go ahead and release the

1776

03:07:30,309 --> 03:07:14,870

the 48 clamps have been released thank

1777

03:07:35,929 --> 03:07:33,230

and Hopper once you've um

1778

03:07:38,389 --> 03:07:35,939

released your poor man's fair lead then

1779

03:07:41,269 --> 03:07:38,399

you can translate uh back down again to

1780

03:07:43,010 --> 03:07:41,279

the port side of bartholomeo and we'll

1781

03:08:02,990 --> 03:07:43,020

get that we'll get your safety tether

1782

03:08:12,830 --> 03:08:06,349

all right safety further

1783

03:08:16,969 --> 03:08:15,290

coming back down

1784

03:08:19,610 --> 03:08:16,979

and the rich man's fair lead is still in

1785

03:08:25,250 --> 03:08:23,210

this man's still on place

1786

03:08:26,330 --> 03:08:25,260

okay Hopper it's caught on the crew lock

1787

03:08:27,889 --> 03:08:26,340

bag

1788

03:08:29,510 --> 03:08:27,899

you wanted to stay on that yeah that's

1789

03:08:32,570 --> 03:08:29,520

okay okay that's like where the

1790

03:08:34,490 --> 03:08:32,580

wristband proves anyway perfect okay so

1791

03:08:37,670 --> 03:08:34,500

no

1792

03:08:39,650 --> 03:08:37,680

big change sweet yeah it's an astronaut

1793

03:08:41,389 --> 03:08:39,660

Mike Hopkins continuing to work through

1794

03:08:43,790 --> 03:08:41,399

procedures to release clamps on the

1795

03:08:45,530 --> 03:08:43,800

bartolomeo science platform Hopper's

1796

03:08:47,030 --> 03:08:45,540

location and his safety tether is clear

1797

03:08:50,809 --> 03:08:47,040

then you can go ahead and continue to

1798

03:08:58,790 --> 03:08:53,349

you too

1799

03:09:02,809 --> 03:09:00,950

okay easy one escort

1800

03:09:03,889 --> 03:09:02,819

I can't Felicia you have to go to the

1801
03:09:06,830 --> 03:09:03,899
publish

1802
03:10:02,090 --> 03:09:06,840
two-minute maneuver to borrow the mayor

1803
03:10:02,100 --> 03:10:17,090
happy

1804
03:10:17,100 --> 03:10:24,349
all right

1805
03:10:24,359 --> 03:11:32,990
good motion continue

1806
03:11:37,190 --> 03:11:34,849
and like your imposition home from the

1807
03:11:39,650 --> 03:11:37,200
Barlow Mayo backup on your go we can go

1808
03:11:41,990 --> 03:11:39,660
in for the bartolomeo worksite prep

1809
03:11:45,830 --> 03:11:42,000
all right I'll be ready for me to

1810
03:12:03,410 --> 03:11:45,840
get my PTT School

1811
03:12:03,420 --> 03:12:34,190
ready okay you have to go

1812
03:12:37,849 --> 03:12:35,990
and lke we don't have a specific

1813
03:12:40,910 --> 03:12:37,859

distance here so I'm just going to take

1814

03:12:42,950 --> 03:12:40,920

you in and uh

1815

03:12:44,210 --> 03:12:42,960

we'll start with about a meter but you

1816

03:12:47,389 --> 03:12:44,220

can give me a call if you got a better

1817

03:12:49,130 --> 03:12:47,399

number okay this is not a published

1818

03:12:50,389 --> 03:12:49,140

negative okay

1819

03:12:52,010 --> 03:12:50,399

um

1820

03:13:02,630 --> 03:12:52,020

start with the meter that sounds good

1821

03:13:02,640 --> 03:13:09,710

the obviously motion hit motion

1822

03:13:09,720 --> 03:13:19,550

okay uh stop motion

1823

03:13:27,710 --> 03:13:24,710

so I see this I see 10 13 1 2 3 4.

1824

03:13:29,929 --> 03:13:27,720

that's the remaining one dropper uh one

1825

03:13:33,050 --> 03:13:29,939

two three four and ten I do 13 later

1826

03:13:35,269 --> 03:13:33,060

okay I think I can reach

1827

03:13:39,889 --> 03:13:35,279

for those

1828

03:13:45,710 --> 03:13:43,070

the settings you're using

1829

03:13:49,070 --> 03:13:45,720

four three counterclockwise too

1830

03:13:53,450 --> 03:13:51,170

next up for our space Walkers today

1831

03:13:55,790 --> 03:13:53,460

Hopkins and Glover will work together in

1832

03:13:58,429 --> 03:13:55,800

order to Route cabling on the bartolomeo

1833

03:14:01,070 --> 03:13:58,439

external science payload platform

1834

03:14:03,229 --> 03:14:01,080

for you to do it uh okay GTA complete

1835

03:14:05,809 --> 03:14:03,239

did you say complete

1836

03:14:10,190 --> 03:14:05,819

this cabling needs to be routed in order

1837

03:14:14,870 --> 03:14:12,769

clamps on the starboard strut and four

1838

03:14:16,670 --> 03:14:14,880

ta clamps for the

1839

03:14:19,370 --> 03:14:16,680

power cable the compost power cables is

1840

03:14:23,269 --> 03:14:21,050

that's a perimeter

1841

03:14:25,610 --> 03:14:23,279

and the last thing I copied was uh That

1842

03:14:28,849 --> 03:14:25,620

You released clamp number seven eight

1843

03:14:34,269 --> 03:14:31,910

all right okay and I did uh six and five

1844

03:14:39,710 --> 03:14:34,279

as well

1845

03:14:41,690 --> 03:14:39,720

together to release the remaining ones

1846

03:14:47,090 --> 03:14:41,700

okay GT settings Bravo 3

1847

03:14:51,950 --> 03:14:49,790

okay and if I'm in your way

1848

03:14:54,830 --> 03:14:51,960

otherwise I'll try and get four okay

1849

03:15:40,550 --> 03:14:54,840

I'll start over with ten okay

1850

03:15:48,050 --> 03:15:42,469

and it's released

1851

03:15:52,370 --> 03:15:50,030

this view from NASA astronaut Victor

1852

03:15:54,710 --> 03:15:52,380

Glover's helmet cam as the duo Works to

1853

03:15:56,630 --> 03:15:54,720

remove clamps on the bartolomeo science

1854

03:15:58,610 --> 03:15:56,640

platform

1855

03:16:00,410 --> 03:15:58,620

these clamps need to be opened up and

1856

03:16:02,030 --> 03:16:00,420

removed in order to remove the cabling

1857

03:16:04,490 --> 03:16:02,040

that needs to get routed in order to

1858

03:16:06,349 --> 03:16:04,500

activate bartolomeo

1859

03:16:17,090 --> 03:16:06,359

as you can see here the crew is working

1860

03:16:53,510 --> 03:16:19,130

number one is released

1861

03:16:53,520 --> 03:17:03,590

ah

1862

03:17:35,750 --> 03:17:05,450

she was released

1863

03:17:41,630 --> 03:17:38,469

and number three is really

1864

03:17:43,490 --> 03:17:41,640

copy three you can store the PTT and the

1865

03:17:53,590 --> 03:17:43,500

next thing we'll do is demate the Papas

1866

03:17:59,210 --> 03:17:57,110

and we can demate them in any order P1

1867

03:18:01,910 --> 03:17:59,220

through P6

1868

03:18:03,290 --> 03:18:01,920

um lke you'll be mating the Caps that

1869

03:18:09,290 --> 03:18:03,300

you have on your mini workstation you'll

1870

03:18:12,769 --> 03:18:10,670

I'm gonna go ahead and give you those

1871

03:18:14,809 --> 03:18:12,779

like you can be working out while I

1872

03:18:16,910 --> 03:18:14,819

release the other four absolutely great

1873

03:18:19,130 --> 03:18:16,920

idea okay

1874

03:18:21,650 --> 03:18:19,140

Here Comes P5

1875

03:18:23,090 --> 03:18:21,660

let me grab the cats real quick

1876

03:18:24,889 --> 03:18:23,100
over Center

1877

03:18:39,469 --> 03:18:24,899
and I just a reminder to leave the

1878

03:18:39,479 --> 03:18:42,410
to DMI band

1879

03:18:45,830 --> 03:18:44,450
the five

1880

03:18:47,929 --> 03:18:45,840
key

1881

03:18:51,950 --> 03:18:47,939
uh let me get six too and I'll pass them

1882

03:18:51,960 --> 03:18:55,010
there's six

1883

03:18:55,020 --> 03:18:59,570
let you check

1884

03:18:59,580 --> 03:19:05,210
you got it

1885

03:19:05,220 --> 03:19:15,550
did not checks it says

1886

03:19:15,560 --> 03:19:23,030
[Applause]

1887

03:19:30,490 --> 03:19:25,849
on warm

1888

03:19:36,229 --> 03:19:32,030

copy

1889

03:19:36,239 --> 03:19:43,630

cat

1890

03:19:48,469 --> 03:19:46,370

views from both helmet cams of our space

1891

03:19:50,450 --> 03:19:48,479

Walkers today as they work together to

1892

03:19:53,570 --> 03:19:50,460

Route cabling for the bartolomeo

1893

03:19:58,910 --> 03:19:53,580

external science payload platform

1894

03:20:09,590 --> 03:20:00,410

three

1895

03:20:17,750 --> 03:20:12,349

and four

1896

03:20:21,530 --> 03:20:20,150

copy they're all demated

1897

03:20:24,530 --> 03:20:21,540

so I

1898

03:20:26,809 --> 03:20:24,540

um you'll be sorry you'll be doing a

1899

03:20:29,630 --> 03:20:26,819

large translation with the cable bundles

1900

03:20:31,550 --> 03:20:29,640

uh in your hand so before we start that

1901

03:20:34,729 --> 03:20:31,560

uh I'll have you verify that your

1902

03:20:37,790 --> 03:20:34,739

cooling is at a comfortable level that

1903

03:20:40,070 --> 03:20:37,800

your Ingress Aid is tucked your visors

1904

03:20:41,750 --> 03:20:40,080

are where you'd like them to be the

1905

03:20:42,950 --> 03:20:41,760

glove heaters are comfortable you've got

1906

03:20:47,389 --> 03:20:42,960

your heels out and your tools and

1907

03:20:51,530 --> 03:20:49,309

feel about

1908

03:20:54,410 --> 03:20:51,540

tools and tethers are clear I still have

1909

03:20:56,330 --> 03:20:54,420

a rep to the cap to be adjustable on the

1910

03:20:58,969 --> 03:20:56,340

Caps that are on five and six

1911

03:21:01,130 --> 03:20:58,979

uh Ingress 8 has my end effector to it

1912

03:21:10,550 --> 03:21:01,140

and it's tucked in fields are good on

1913

03:21:14,870 --> 03:21:12,769

and we're about nine minutes away from

1914

03:21:21,889 --> 03:21:14,880

Sunset but it's probably already getting

1915

03:21:27,650 --> 03:21:24,950

and if you want you can release your uh

1916

03:21:28,849 --> 03:21:27,660

mg mws ret from that adjustable to the

1917

03:21:31,490 --> 03:21:28,859

caps

1918

03:21:34,309 --> 03:21:31,500

and then you can retrieve both corals of

1919

03:21:36,050 --> 03:21:34,319

the popless cables and keep the top coil

1920

03:21:37,610 --> 03:21:36,060

closest to your body and you can use

1921

03:21:53,990 --> 03:21:37,620

your mini workstation end effector as

1922

03:21:54,000 --> 03:22:00,349

I for your right look at that Moon

1923

03:22:04,670 --> 03:22:03,170

you see it

1924

03:22:05,809 --> 03:22:04,680

I'm gonna have my right back to my

1925

03:22:09,229 --> 03:22:05,819

workstation

1926

03:22:09,239 --> 03:22:13,130

that's pretty incredible

1927

03:22:21,170 --> 03:22:15,469

okay I've got the I've got both going to

1928

03:22:28,190 --> 03:22:24,469

you have those bundles uh so we're ready

1929

03:22:31,010 --> 03:22:28,200

to uh begin motion just give you a

1930

03:22:33,590 --> 03:22:31,020

couple notes and reminders if you feel

1931

03:22:35,870 --> 03:22:33,600

any resistance stop motion please don't

1932

03:22:38,690 --> 03:22:35,880

put any loads into the cables or to the

1933

03:22:41,450 --> 03:22:38,700

arm and also finally before dropping

1934

03:22:43,849 --> 03:22:41,460

that bottom coil I'm sure that the cable

1935

03:22:45,229 --> 03:22:43,859

slack is pulled taut towards you we

1936

03:22:49,729 --> 03:22:45,239

don't want any cable sock on the

1937

03:23:40,929 --> 03:22:54,710

ub2 copies DB1 copy I'm one M2 copy

1938

03:23:45,290 --> 03:23:43,490

as a reminder we are taking your

1939

03:23:47,030 --> 03:23:45,300

questions today using the hashtag

1940

03:23:49,429 --> 03:23:47,040

asknasa

1941

03:23:52,130 --> 03:23:49,439

one question we we received today was

1942

03:23:53,929 --> 03:23:52,140

how long does a spacewalk take most

1943

03:23:56,030 --> 03:23:53,939

spacewalks are about six and a half

1944

03:23:59,450 --> 03:23:56,040

hours though the longest spacewalk ever

1945

03:24:01,729 --> 03:23:59,460

recorded happened back in 2011 and it

1946

03:24:15,889 --> 03:24:01,739

took eight hours and 56 minutes and was

1947

03:24:15,899 --> 03:24:20,269

picture

1948

03:24:24,650 --> 03:24:22,729

ah

1949

03:24:26,330 --> 03:24:24,660

do you want as I said did you see the

1950

03:24:27,889 --> 03:24:26,340

picture by your left hand yeah it is

1951
03:24:35,570 --> 03:24:27,899
cool

1952
03:24:35,580 --> 03:24:40,910
okay

1953
03:24:46,929 --> 03:24:43,550
one correction that longest spacewalk

1954
03:24:49,610 --> 03:24:46,939
ever completed was actually in 2001 not

1955
03:24:52,090 --> 03:24:49,620
2011. so again the longest spacewalk

1956
03:24:55,790 --> 03:24:52,100
that ever occurred happened on March 11

1957
03:24:58,010 --> 03:24:55,800
2001 lasting 8 hours and 56 minutes that

1958
03:25:04,550 --> 03:24:58,020
spacewalk was completed by Jim Voss and

1959
03:25:04,560 --> 03:25:08,150
obviously abortion

1960
03:25:08,160 --> 03:25:12,830
motion continue

1961
03:25:32,870 --> 03:25:14,690
okay how far I see the cables clear of

1962
03:27:05,050 --> 03:26:32,269
foreign

1963
03:27:08,870 --> 03:27:07,309

so you're going to have tension on a

1964

03:27:11,030 --> 03:27:08,880

couple but a couple will still be loose

1965

03:27:13,070 --> 03:27:11,040

I could see that right now yeah and then

1966

03:27:15,830 --> 03:27:13,080

the memory wants to go off the income to

1967

03:27:21,650 --> 03:27:15,840

the to the right starter okay

1968

03:27:25,910 --> 03:27:23,750

okay Andy most of the bottom coil is

1969

03:27:33,290 --> 03:27:25,920

down

1970

03:27:37,190 --> 03:27:35,330

okay that's your Capital Southwest

1971

03:27:43,150 --> 03:27:37,200

midpoint we're going to Papa's connector

1972

03:27:47,990 --> 03:27:45,950

and Hopper I think I saw you close of

1973

03:27:57,130 --> 03:27:48,000

what was it all four

1974

03:28:02,750 --> 03:28:01,490

copy then you can retrieve your PGT and

1975

03:28:04,550 --> 03:28:02,760

we'll install

1976

03:28:12,309 --> 03:28:04,560

count number 11 on the Nader side of

1977

03:28:26,330 --> 03:28:14,690

and this is where we also want to verify

1978

03:28:29,269 --> 03:28:27,950

and I grab it out motion here are you

1979

03:28:30,889 --> 03:28:29,279

good for me to continue with the cables

1980

03:28:32,150 --> 03:28:30,899

with hopper

1981

03:28:35,150 --> 03:28:32,160

continue

1982

03:28:38,870 --> 03:28:37,070

do you see the cables out oh yeah yeah

1983

03:28:42,229 --> 03:28:38,880

okay are they still free yeah they're

1984

03:28:44,870 --> 03:28:42,239

still free okay now over two hours and

1985

03:28:46,790 --> 03:28:44,880

30 minutes into today's space walk

1986

03:28:48,710 --> 03:28:46,800

our space walking Duo of Mike Hopkins

1987

03:28:50,690 --> 03:28:48,720

and Victor Glover continue to work

1988

03:28:52,790 --> 03:28:50,700

through procedures in order to Route

1989

03:29:30,469 --> 03:28:52,800

cables on the bartolomeo external

1990

03:29:30,479 --> 03:29:55,690

foreign

1991

03:31:01,309 --> 03:30:01,610

Bravo One clockwise two expect 13 turns

1992

03:31:07,370 --> 03:31:04,790

and I there's your published in uh X Y

1993

03:31:09,110 --> 03:31:07,380

and Z let me know if you'd like the uh a

1994

03:31:10,910 --> 03:31:09,120

big yaw that we were talking about okay

1995

03:31:15,530 --> 03:31:10,920

I think I can reach you from your GTA

1996

03:31:17,690 --> 03:31:15,890

um

1997

03:31:21,410 --> 03:31:17,700

[Music]

1998

03:31:28,550 --> 03:31:21,420

and a half tones 11.9 on the torque

1999

03:31:33,650 --> 03:31:31,729

so hopper for you you can verify that

2000

03:31:36,170 --> 03:31:33,660

the clearance with that uh starboard

2001
03:31:39,170 --> 03:31:36,180
Optical 2 interface uh you can pull the

2002
03:31:43,130 --> 03:31:39,180
cables taut to the platform handrail

2003
03:31:46,610 --> 03:31:43,140
8909 and then apply a Twist to hold

2004
03:31:51,110 --> 03:31:49,309
your way up along the end cone to zero

2005
03:32:02,590 --> 03:31:51,120
nine three nine zero nine three three

2006
03:32:08,870 --> 03:32:05,809
can I you can begin prep on the topless

2007
03:32:10,429 --> 03:32:08,880
connector panel so you can remove the J5

2008
03:32:12,490 --> 03:32:10,439
Terminator

2009
03:32:17,150 --> 03:32:12,500
and then the

2010
03:32:40,090 --> 03:32:17,160
j1234 Caps please do not demate the j6

2011
03:32:44,510 --> 03:32:42,590
we're in a brief expected Handover

2012
03:32:46,490 --> 03:32:44,520
between communication satellites and

2013
03:32:47,809 --> 03:32:46,500

we'll regain communication with the crew

2014

03:32:50,269 --> 03:32:47,819

shortly

2015

03:32:51,769 --> 03:32:50,279

as a reminder based on updated guidance

2016

03:32:53,630 --> 03:32:51,779

teams and Mission Control are now

2017

03:32:55,190 --> 03:32:53,640

wearing masks at all times while on

2018

03:32:57,349 --> 03:32:55,200

console and supporting Mission

2019

03:32:59,510 --> 03:32:57,359

operations except for brief periods of

2020

03:33:01,729 --> 03:32:59,520

time to eat or drink as am I during

2021

03:33:04,130 --> 03:33:01,739

today's spacewalk coverage

2022

03:33:04,550 --> 03:33:04,140

right I'm back with you after Handover

2023

03:33:05,809 --> 03:33:04,560

[Music]

2024

03:33:07,790 --> 03:33:05,819

um

2025

03:33:11,389 --> 03:33:07,800

yeah just to repeat you can remove the

2026

03:33:16,610 --> 03:33:11,399

J5 Terminator and the j1234 cap but not

2027

03:33:21,710 --> 03:33:19,130

the J5 Terminator is off

2028

03:33:24,229 --> 03:33:21,720

before cap is off

2029

03:33:25,910 --> 03:33:24,239

um it's also on that cat keeper working

2030

03:33:30,769 --> 03:33:25,920

on three now

2031

03:33:30,779 --> 03:33:42,170

okay

2032

03:33:46,670 --> 03:33:45,410

three uncaps cap on the cap keeper no

2033

03:33:46,680 --> 03:34:11,450

copy

2034

03:34:16,610 --> 03:34:13,429

A2 cap is off

2035

03:34:32,290 --> 03:34:16,620

on the cat keeper

2036

03:34:39,110 --> 03:34:35,570

and like once you've removed the J1 cap

2037

03:34:40,969 --> 03:34:39,120

then you can sew one of the open hooks

2038

03:34:45,830 --> 03:34:40,979

from the White Cap keeper on the j6

2039

03:34:45,840 --> 03:34:52,809

okay

2040

03:34:58,490 --> 03:34:56,750

J1 cap is off one two the cap keeper

2041

03:35:01,190 --> 03:34:58,500

this one looks good

2042

03:35:03,950 --> 03:35:01,200

and the cap keeper

2043

03:35:08,210 --> 03:35:03,960

has a hook to j6 Terminator and this

2044

03:35:12,349 --> 03:35:10,130

this view from NASA astronaut Victor

2045

03:35:14,269 --> 03:35:12,359

Glover's helmet cam as he continues to

2046

03:35:16,010 --> 03:35:14,279

work through procedures to Route cabling

2047

03:35:25,610 --> 03:35:16,020

on the bartolomeo external science

2048

03:35:25,620 --> 03:35:35,570

work

2049

03:35:42,889 --> 03:35:38,630

and Annie the first two are tires are

2050

03:35:47,990 --> 03:35:43,450

as

2051

03:35:54,250 --> 03:35:50,690

now if you can see in the wgs but it

2052

03:35:58,070 --> 03:35:56,570

yeah it's a little bit hard to see um

2053

03:36:01,190 --> 03:35:58,080

but I'll take your word for it so just

2054

03:36:05,030 --> 03:36:01,200

to confirm you did the zero nine three

2055

03:36:11,150 --> 03:36:08,929

oh that's eight nine zero nine

2056

03:36:12,710 --> 03:36:11,160

first one and then 939 now I'm going up

2057

03:36:25,790 --> 03:36:12,720

to nine three three

2058

03:36:32,269 --> 03:36:28,870

any adjustables on the cat keeper

2059

03:36:36,469 --> 03:36:32,279

you can copy the adjustables on the cap

2060

03:36:45,469 --> 03:36:38,809

both

2061

03:36:50,870 --> 03:36:49,550

the question Andy a cat keeper and the

2062

03:36:53,630 --> 03:36:50,880

adjustable is actually helping me keep

2063

03:36:58,090 --> 03:36:53,640

the bundle in a nice place I think can I

2064

03:36:59,929 --> 03:36:58,100

have uncapped uh J P5

2065

03:37:03,110 --> 03:36:59,939

Bluetooth

2066

03:37:07,429 --> 03:37:03,120

city of my band can I make G5 G5 and in

2067

03:37:43,190 --> 03:37:10,849

yep that's no issue so you can demate P5

2068

03:37:48,710 --> 03:37:45,969

and Andy one of these uh

2069

03:37:51,349 --> 03:37:48,720

one of these cables has got kind of a

2070

03:37:52,969 --> 03:37:51,359

loop coming out of it there's just a

2071

03:37:54,950 --> 03:37:52,979

wire size

2072

03:37:58,130 --> 03:37:54,960

I'm going to release that Loop pull it a

2073

03:38:00,590 --> 03:37:58,140

little tighter and then I'll put the

2074

03:38:02,630 --> 03:38:00,600

I'll put it back in

2075

03:38:04,790 --> 03:38:02,640

this is a wire tie that's just on the

2076
03:38:24,650 --> 03:38:04,800
bundles

2077
03:38:24,660 --> 03:38:47,090
foreign

2078
03:38:54,170 --> 03:38:49,790
copy then you can mate

2079
03:39:29,570 --> 03:38:54,180
P1 P2 P3 and P4 in any order

2080
03:39:29,580 --> 03:39:51,309
foreign

2081
03:39:56,389 --> 03:39:54,050
space Walkers continuing to work through

2082
03:39:58,550 --> 03:39:56,399
procedures in order to Route cabling on

2083
03:40:00,769 --> 03:39:58,560
the bartolomeo external science payload

2084
03:40:06,490 --> 03:40:00,779
platform this cabling needs to get

2085
03:40:11,510 --> 03:40:09,950
copy and a big picture for you Hopper

2086
03:40:13,370 --> 03:40:11,520
instead of trying to take pictures in

2087
03:40:17,750 --> 03:40:13,380
the dark we'll have you started start

2088
03:40:17,760 --> 03:40:23,689

after that

2089

03:40:23,699 --> 03:40:29,110

MP3 is complete so I'm heading back down

2090

03:40:33,950 --> 03:40:31,210

copy

2091

03:40:35,809 --> 03:40:33,960

following this task NASA astronaut Mike

2092

03:40:37,670 --> 03:40:35,819

Hopkins is going to work on removing

2093

03:40:39,229 --> 03:40:37,680

another set of cabling that's going to

2094

03:40:40,929 --> 03:40:39,239

be used to hook up an antenna to

2095

03:40:42,950 --> 03:40:40,939

bartolomeo

2096

03:40:44,689 --> 03:40:42,960

I'm going down I'm just going to release

2097

03:40:47,809 --> 03:40:44,699

some PA clamps and then I got to release

2098

03:40:50,389 --> 03:40:47,819

the 13 and

2099

03:40:56,090 --> 03:40:50,399

I'm good okay

2100

03:40:56,100 --> 03:41:21,050

the goal for GTA

2101
03:41:21,060 --> 03:41:25,550
VGA

2102
03:41:25,560 --> 03:42:22,670
foreign

2103
03:42:26,889 --> 03:42:24,349
to my right

2104
03:42:51,469 --> 03:42:26,899
I'm sorry sorry to my left arm left

2105
03:43:13,070 --> 03:42:53,570
motion

2106
03:43:18,170 --> 03:43:15,229
if you're just tuning in with us today

2107
03:43:21,469 --> 03:43:18,180
we're a little over two hours and 45

2108
03:43:23,030 --> 03:43:21,479
minutes into the 233rd spacewalk in

2109
03:43:25,429 --> 03:43:23,040
support of space station maintenance

2110
03:43:28,189 --> 03:43:25,439
upgrades and installation today's

2111
03:43:30,590 --> 03:43:28,199
spacewalk officially began at 5 28 a.m

2112
03:43:32,750 --> 03:43:30,600
Central Time and since then our space

2113
03:43:34,849 --> 03:43:32,760

walking Duo of NASA astronaut Mike

2114

03:43:37,910 --> 03:43:34,859

Hopkins and Victor Glover work together

2115

03:43:40,910 --> 03:43:37,920

to remove the kolka Columbus Ka band

2116

03:43:42,830 --> 03:43:40,920

antenna out of the airlock and brought

2117

03:43:45,170 --> 03:43:42,840

it with them over to the Columbus module

2118

03:43:47,030 --> 03:43:45,180

of the space station they then work

2119

03:43:49,969 --> 03:43:47,040

together to remove bolts on the Columbus

2120

03:43:51,830 --> 03:43:49,979

panels and then install the kolka where

2121

03:43:54,769 --> 03:43:51,840

the removed bolts were

2122

03:43:57,769 --> 03:43:54,779

too following this the duo worked

2123

03:44:00,110 --> 03:43:57,779

together to Route coca cabling and then

2124

03:44:01,910 --> 03:44:00,120

headed to the bartolomeo science payload

2125

03:44:03,710 --> 03:44:01,920

platform

2126
03:44:06,170 --> 03:44:03,720
here the duo worked together to remove

2127
03:44:07,790 --> 03:44:06,180
clamps holding cabling in place which

2128
03:44:09,410 --> 03:44:07,800
was then routed in order to activate

2129
03:44:12,590 --> 03:44:09,420
bartolomeo

2130
03:44:14,269 --> 03:44:12,600
currently Hopkins is heading over to a

2131
03:44:16,429 --> 03:44:14,279
different part of our limous in order to

2132
03:44:21,469 --> 03:44:16,439
remove another set of cabling and Route

2133
03:44:21,479 --> 03:44:28,610
oh God

2134
03:44:28,620 --> 03:45:13,309
foreign

2135
03:45:13,319 --> 03:45:18,490
cable

2136
03:45:22,969 --> 03:45:20,630
property so just to confirm you've

2137
03:45:30,469 --> 03:45:22,979
released all the TA clamps you've

2138
03:45:39,410 --> 03:45:35,410

I have uh the jack is released yeah

2139

03:45:44,469 --> 03:45:39,420

or j7 and 13 is released then I have the

2140

03:45:49,790 --> 03:45:47,809

copy so you can release the Twist on the

2141

03:45:51,650 --> 03:45:49,800

antenna cable wire tie as needed to

2142

03:45:56,150 --> 03:45:51,660

provide slack and then verify your

2143

03:46:00,290 --> 03:45:58,370

Roger that

2144

03:46:02,469 --> 03:46:00,300

I'll probably need a little bit more GTA

2145

03:46:05,150 --> 03:46:02,479

do that all right

2146

03:46:07,490 --> 03:46:05,160

can I get the

2147

03:46:37,910 --> 03:46:07,500

30 centimeters toward my feet

2148

03:46:37,920 --> 03:46:52,130

good lotion

2149

03:46:52,140 --> 03:47:09,110

and I accept 30 centimeters continue

2150

03:47:13,910 --> 03:47:11,269

okay that's good starboard and if you

2151
03:47:20,689 --> 03:47:13,920
can take anybody in 10 centimeters

2152
03:47:27,610 --> 03:47:22,670
obviously motion

2153
03:47:45,650 --> 03:47:30,650
watch yourself

2154
03:47:56,269 --> 03:47:49,070
okay that's good GTA complete this is a

2155
03:48:01,849 --> 03:47:59,689
okay Andy all four of them's uh J1 two

2156
03:48:04,070 --> 03:48:01,859
three and four I'm only able to get the

2157
03:48:06,290 --> 03:48:04,080
levers to like straight up and down

2158
03:48:08,870 --> 03:48:06,300
forward so they go over Center

2159
03:48:10,490 --> 03:48:08,880
I'm trying to get a very high level uh

2160
03:48:12,650 --> 03:48:10,500
to see if there's

2161
03:48:14,090 --> 03:48:12,660
maybe not fully mated when I started

2162
03:48:17,150 --> 03:48:14,100
moving the lever but

2163
03:48:21,830 --> 03:48:17,160

they all look like they're

2164

03:48:21,840 --> 03:48:53,830

foreign

2165

03:49:03,769 --> 03:48:57,110

if you haven't already you could uh

2166

03:49:03,779 --> 03:49:06,830

or

2167

03:49:31,070 --> 03:49:08,330

and while you're looking at it you can

2168

03:49:34,790 --> 03:49:33,229

so far the linkage looks good it goes

2169

03:49:37,969 --> 03:49:34,800

full forward over Center

2170

03:49:44,750 --> 03:49:37,979

while I've got it off

2171

03:49:49,309 --> 03:49:47,510

so you can try to make it again uh just

2172

03:49:51,830 --> 03:49:49,319

checking the alignment and the side load

2173

03:49:53,990 --> 03:49:51,840

side loads and if you need to you can

2174

03:49:59,510 --> 03:49:54,000

push and pull on the back shelf and

2175

03:50:07,790 --> 03:50:02,090

I will try all of that again

2176
03:50:11,570 --> 03:50:09,950
I've got a handrail here on the

2177
03:50:14,570 --> 03:50:11,580
encounter Columbus that I'm using the

2178
03:50:14,580 --> 03:50:31,790
I'm putting a bit of force into it

2179
03:50:37,610 --> 03:50:35,150
yeah so J1 and P1 are fully mated

2180
03:50:40,010 --> 03:50:37,620
with the lever aft over Center

2181
03:50:42,590 --> 03:50:40,020
and then I go to

2182
03:50:45,590 --> 03:50:42,600
hover forward and it just stops at the

2183
03:50:47,030 --> 03:50:45,600
midpoint levers perpendicular to the

2184
03:50:50,929 --> 03:50:47,040
back shell right now

2185
03:50:50,939 --> 03:51:15,550
all right copy standby

2186
03:51:20,929 --> 03:51:18,469
this view from NASA astronaut Victor

2187
03:51:22,550 --> 03:51:20,939
Glover's helmet cam is he he works to

2188
03:51:24,710 --> 03:51:22,560

ensure there's a good connection between

2189

03:51:46,510 --> 03:51:24,720

the cables he's been routing on the

2190

03:51:50,030 --> 03:51:49,070

and I get just want to confirm when

2191

03:51:52,189 --> 03:51:50,040

you're

2192

03:51:54,650 --> 03:51:52,199

sliding down

2193

03:51:56,689 --> 03:51:54,660

um the plug onto the jack that the two

2194

03:52:00,050 --> 03:51:56,699

half shells are are meeting in a good

2195

03:52:03,410 --> 03:52:02,090

that's where when I say it's mated with

2196

03:52:04,969 --> 03:52:03,420

the liver house that's what I'm talking

2197

03:52:07,610 --> 03:52:04,979

about they're flush

2198

03:52:10,309 --> 03:52:07,620

yeah it is completely uh centered up and

2199

03:52:12,110 --> 03:52:10,319

ready to move the lever forward and

2200

03:52:14,689 --> 03:52:12,120

that's why I got a better high level for

2201
03:52:16,250 --> 03:52:14,699
you to make sure I can see both sides if

2202
03:52:18,830 --> 03:52:16,260
they were completely flushed together

2203
03:52:20,330 --> 03:52:18,840
they're not quite symmetric and the blue

2204
03:52:22,490 --> 03:52:20,340
lines don't line up if you're from there

2205
03:52:24,110 --> 03:52:22,500
you can remove these connectors but if

2206
03:52:27,530 --> 03:52:24,120
they were ready for me to move the lever

2207
03:52:29,570 --> 03:52:27,540
I would say for all four there's no uh

2208
03:52:31,490 --> 03:52:29,580
things no they're not sideways or

2209
03:52:33,950 --> 03:52:31,500
anything they're all coming straight out

2210
03:52:35,689 --> 03:52:33,960
of the connector panel they're all level

2211
03:52:39,229 --> 03:52:35,699
flush

2212
03:52:41,030 --> 03:52:39,239
uh no no big gaps all the linkages look

2213
03:52:42,410 --> 03:52:41,040

good right you know I watch talk with

2214

03:52:45,229 --> 03:52:42,420

you made all these so they are capable

2215

03:52:52,189 --> 03:52:45,239

of going forward over Center they're all

2216

03:52:57,889 --> 03:52:54,530

except I've got five made it fully but

2217

03:53:04,250 --> 03:53:01,150

lever straight up and down

2218

03:53:05,030 --> 03:53:04,260

yeah we we copy all like

2219

03:53:09,170 --> 03:53:05,040

um

2220

03:53:11,150 --> 03:53:09,180

drew his suggesting to double check that

2221

03:53:13,010 --> 03:53:11,160

they're snapping in place sometimes

2222

03:53:14,630 --> 03:53:13,020

there's a little bit of tightness that

2223

03:53:16,790 --> 03:53:14,640

you need to overcome in the very last

2224

03:53:19,550 --> 03:53:16,800

little bit of the the mate you kind of

2225

03:53:21,889 --> 03:53:19,560

have to push both on the Jack and the

2226

03:53:31,070 --> 03:53:21,899

plug side and just kind of get it to to

2227

03:53:31,080 --> 03:53:37,070

okay start again

2228

03:53:42,290 --> 03:53:39,889

yep the last five or six that I snapped

2229

03:53:44,030 --> 03:53:42,300

in place the same thing so

2230

03:53:45,229 --> 03:53:44,040

unless these have something different

2231

03:53:47,330 --> 03:53:45,239

about them

2232

03:53:50,990 --> 03:53:47,340

I would say that that's

2233

03:53:57,050 --> 03:53:53,450

on my previous attempts

2234

03:53:59,530 --> 03:53:57,060

and uh yeah it is it is snap clicked

2235

03:54:01,849 --> 03:53:59,540

nated

2236

03:54:03,769 --> 03:54:01,859

minimum Gap

2237

03:54:05,450 --> 03:54:03,779

and every other way I could describe to

2238

03:54:06,469 --> 03:54:05,460

you that it was ready for me to go lever

2239

03:54:10,550 --> 03:54:06,479

forward

2240

03:54:15,950 --> 03:54:13,010

okay we appreciate the extra effort I

2241

03:54:16,550 --> 03:54:15,960

and we copy all I think

2242

03:54:18,530 --> 03:54:16,560

um

2243

03:54:20,929 --> 03:54:18,540

we'll ask copper to come over and maybe

2244

03:54:23,269 --> 03:54:20,939

try a different uh body position to see

2245

03:54:25,729 --> 03:54:23,279

if uh if he has any Joy

2246

03:54:28,610 --> 03:54:25,739

so if Hopper if you could Stow the uh

2247

03:54:35,809 --> 03:54:28,620

Aeros antenna cable and try to head over

2248

03:54:35,819 --> 03:54:38,929

that's good

2249

03:54:42,590 --> 03:54:41,630

and Ike let me know if you want an Acca

2250

03:54:50,510 --> 03:54:42,600

if you want to try a different position

2251
03:54:54,950 --> 03:54:52,250
for one thing I'm thinking with another

2252
03:54:57,830 --> 03:54:54,960
set of hands I can I can push on that

2253
03:55:01,189 --> 03:54:57,840
half shell piece that's going forward to

2254
03:55:02,689 --> 03:55:01,199
drive the pin if you want yeah let me

2255
03:55:18,469 --> 03:55:02,699
get uh

2256
03:55:18,479 --> 03:55:49,570
okay I'm on my way

2257
03:55:55,929 --> 03:55:53,330
and once you get the two hands up there

2258
03:55:59,090 --> 03:55:55,939
uh try also to to see if you can

2259
03:56:05,210 --> 03:55:59,100
minimize any side loads that might also

2260
03:56:05,220 --> 03:56:10,550
we copy

2261
03:56:14,210 --> 03:56:12,290
and I will also take you up in your

2262
03:56:15,950 --> 03:56:14,220
offer of uh when you have two an extra

2263
03:56:31,849 --> 03:56:15,960

set of hands up there to push on the

2264

03:56:35,389 --> 03:56:34,490

okay what do you think if I go to that

2265

03:56:38,030 --> 03:56:35,399

uh

2266

03:56:38,750 --> 03:56:38,040

back out of the way if you want or

2267

03:56:41,450 --> 03:56:38,760

um

2268

03:56:56,830 --> 03:56:41,460

I think you're I don't know down here on

2269

03:57:01,370 --> 03:56:59,570

following some difficulties ensuring a

2270

03:57:03,229 --> 03:57:01,380

good connection during the bartolomeo

2271

03:57:05,090 --> 03:57:03,239

cable routing NASA astronaut Mike

2272

03:57:06,710 --> 03:57:05,100

Hopkins is now going to head over and

2273

03:57:08,809 --> 03:57:06,720

offer a second set of hands to Victor

2274

03:57:10,849 --> 03:57:08,819

Glover so they can work together to

2275

03:57:12,769 --> 03:57:10,859

ensure proper location and leverage of

2276

03:57:18,469 --> 03:57:12,779

the cabling as they work to complete

2277

03:57:32,630 --> 03:57:20,990

and it's all for these huh yeah I can

2278

03:57:37,189 --> 03:57:34,370

you look at where the levers are you see

2279

03:57:56,870 --> 03:57:37,199

they're almost identical yeah I know

2280

03:58:13,490 --> 03:57:59,510

okay

2281

03:58:18,290 --> 03:58:15,830

you got a good look in there

2282

03:58:31,670 --> 03:58:18,300

double check and I agree

2283

03:58:51,710 --> 03:58:33,410

okay

2284

03:58:51,720 --> 03:59:03,349

well

2285

03:59:38,689 --> 03:59:04,910

you hear me

2286

03:59:58,550 --> 03:59:41,090

okay Andy

2287

04:00:02,889 --> 04:00:00,710

you push on that too can you get a thumb

2288

04:00:09,769 --> 04:00:02,899

down there

2289

04:00:39,650 --> 04:00:13,370

yeah oh Sandy yeah you got ice and I

2290

04:00:43,429 --> 04:00:41,210

yeah I don't know what it can be it

2291

04:00:50,809 --> 04:00:43,439

looks like the pins line up I mean what

2292

04:00:58,070 --> 04:00:52,729

that feels like a set of heart stuff

2293

04:01:02,150 --> 04:00:59,630

it's just

2294

04:01:03,650 --> 04:01:02,160

yeah diameter of the pins I don't know

2295

04:01:05,469 --> 04:01:03,660

it looks like the pins line up so I'm

2296

04:01:18,950 --> 04:01:05,479

not sure

2297

04:01:18,960 --> 04:01:23,269

now

2298

04:01:23,279 --> 04:01:26,090

yeah

2299

04:01:26,100 --> 04:01:30,950

I bet you

2300

04:01:36,050 --> 04:01:34,130

can see those are

2301
04:01:38,750 --> 04:01:36,060
how far we got to go right you see the

2302
04:01:40,790 --> 04:01:38,760
gold and then the silver line

2303
04:01:47,809 --> 04:01:40,800
that's how far this actually still needs

2304
04:01:47,819 --> 04:01:55,550
amen

2305
04:02:01,010 --> 04:01:59,570
that is that lip fitting

2306
04:02:02,150 --> 04:02:01,020
goes forward it'll go all the way

2307
04:02:04,010 --> 04:02:02,160
forward

2308
04:02:05,570 --> 04:02:04,020
then

2309
04:02:08,990 --> 04:02:05,580
you know it's hitting you see how the

2310
04:02:12,469 --> 04:02:10,790
um it's got a look to it and is that

2311
04:02:15,769 --> 04:02:12,479
hitting and not

2312
04:02:17,150 --> 04:02:15,779
getting it going any further

2313
04:02:22,429 --> 04:02:17,160

you know what I mean

2314

04:02:22,439 --> 04:02:29,210

all right

2315

04:02:31,729 --> 04:02:30,950

I don't think so because if you take it

2316

04:02:41,630 --> 04:02:31,739

off

2317

04:02:44,990 --> 04:02:43,070

okay Andy you guys got any other

2318

04:02:47,210 --> 04:02:45,000

suggestions

2319

04:02:51,349 --> 04:02:47,220

yeah we're still discussing down here

2320

04:02:51,359 --> 04:03:02,530

ah

2321

04:03:02,540 --> 04:03:09,710

I just hit the same hard spot

2322

04:03:14,269 --> 04:03:12,469

of far

2323

04:03:17,510 --> 04:03:14,279

and

2324

04:03:25,849 --> 04:03:17,520

it's engaging in yeah the back shells

2325

04:03:32,150 --> 04:03:30,349

okay so let me describe to that show

2326

04:03:35,330 --> 04:03:32,160

you

2327

04:03:38,570 --> 04:03:35,340

there's a an outer part

2328

04:03:42,110 --> 04:03:38,580

it's kind of got the gold coloring

2329

04:03:44,150 --> 04:03:42,120

and that starts closest to the cable

2330

04:03:46,969 --> 04:03:44,160

and that's about the centimeter

2331

04:03:49,070 --> 04:03:46,979

centimeter and a half

2332

04:03:50,750 --> 04:03:49,080

and then you've got a fin

2333

04:03:52,670 --> 04:03:50,760

over

2334

04:03:54,469 --> 04:03:52,680

coded

2335

04:03:56,870 --> 04:03:54,479

up and

2336

04:03:58,849 --> 04:03:56,880

and that's uh you know maybe a half

2337

04:04:01,130 --> 04:03:58,859

third of the centimeter

2338

04:04:06,950 --> 04:04:01,140

and then it's uh you've got two steps

2339

04:04:11,150 --> 04:04:09,410

um from that back shell and so when that

2340

04:04:13,969 --> 04:04:11,160

silver

2341

04:04:18,590 --> 04:04:13,979

is getting even

2342

04:04:24,349 --> 04:04:21,830

with the rest of the NG mpgl but it's

2343

04:04:26,469 --> 04:04:24,359

going into that's where it stops

2344

04:04:32,330 --> 04:04:26,479

looks like it's traveling about an inch

2345

04:04:37,429 --> 04:04:35,269

you guys have a good view in that wvf

2346

04:04:41,570 --> 04:04:37,439

yeah we got a good view and we copy

2347

04:04:45,710 --> 04:04:44,570

can you see the where it's where it's

2348

04:04:50,809 --> 04:04:45,720

stopping

2349

04:04:55,189 --> 04:04:52,969

and all four

2350

04:04:57,050 --> 04:04:55,199

are the same is that right

2351
04:04:59,570 --> 04:04:57,060
I'll save

2352
04:05:14,410 --> 04:04:59,580
that that's affirmative

2353
04:05:14,420 --> 04:06:29,809
all right stand by

2354
04:06:29,819 --> 04:07:09,969
foreign

2355
04:07:14,929 --> 04:07:12,950
while Not Unusual due to Cable stiffness

2356
04:07:17,510 --> 04:07:14,939
our spacewalkers are having difficulty

2357
04:07:18,950 --> 04:07:17,520
mating bartolomeo cables teams on the

2358
04:07:20,809 --> 04:07:18,960
ground are continuing to troubleshoot

2359
04:07:22,849 --> 04:07:20,819
while NASA astronauts Mike Hopkins and

2360
04:07:33,429 --> 04:07:22,859
Victor Glover work together on working

2361
04:07:38,990 --> 04:07:37,189
all right uh Hopper and Ike uh we need a

2362
04:07:41,630 --> 04:07:39,000
little bit more time to discuss the

2363
04:07:43,790 --> 04:07:41,640

floor plan here but in the meantime we'd

2364

04:07:47,389 --> 04:07:43,800

like your help on troubleshooting a

2365

04:07:49,849 --> 04:07:47,399

problem with Coca we're having a

2366

04:07:50,830 --> 04:07:49,859

contract failure so we'll need to look

2367

04:07:54,410 --> 04:07:50,840

at

2368

04:07:56,269 --> 04:07:54,420

uh two of the cables so if you can make

2369

04:08:01,250 --> 04:07:56,279

or Hopper if you can make your way back

2370

04:08:01,260 --> 04:08:13,389

okay that didn't work

2371

04:08:20,090 --> 04:08:17,990

and I care for you and your go to demate

2372

04:08:46,990 --> 04:08:20,100

um the connectors and then we'll take

2373

04:08:57,110 --> 04:08:50,870

and I specifically we'd love pictures of

2374

04:08:57,120 --> 04:09:04,330

two

2375

04:09:08,870 --> 04:09:06,590

and we'd also just like to double check

2376

04:09:17,210 --> 04:09:08,880

that um

2377

04:09:17,220 --> 04:09:25,250

that is correct

2378

04:09:30,710 --> 04:09:28,010

and like I said the pins look like they

2379

04:09:33,830 --> 04:09:30,720

they match up I mean

2380

04:09:36,590 --> 04:09:33,840

I'm seeing

2381

04:09:38,870 --> 04:09:36,600

I've been pinholes in the Jack side and

2382

04:09:40,429 --> 04:09:38,880

the plug only has four but they look

2383

04:09:42,769 --> 04:09:40,439

like you know it's the same type of

2384

04:09:46,670 --> 04:09:42,779

connector they match

2385

04:09:46,680 --> 04:09:55,790

okay copy

2386

04:10:04,429 --> 04:09:59,149

hey Andy I'm back it's uh

2387

04:10:08,570 --> 04:10:06,349

talking about where they go into uh

2388

04:10:10,969 --> 04:10:08,580

Columbus correct that's right so we're

2389

04:10:14,809 --> 04:10:10,979

looking for P1 and P2 we'll take one of

2390

04:10:21,830 --> 04:10:14,819

them at a time so you can disconnect P1

2391

04:10:21,840 --> 04:10:41,450

okay it didn't work

2392

04:10:41,460 --> 04:10:47,929

okay um it's one beside no side

2393

04:10:47,939 --> 04:10:51,290

and

2394

04:10:57,649 --> 04:10:54,229

I'm a corpus uh

2395

04:10:57,659 --> 04:11:02,870

I could do DMI band

2396

04:11:02,880 --> 04:11:06,889

puppy

2397

04:11:06,899 --> 04:11:21,649

so reconnected

2398

04:11:26,090 --> 04:11:24,590

over Center connected

2399

04:11:28,070 --> 04:11:26,100

copy

2400

04:11:42,790 --> 04:11:28,080

um we'll repeat the same thing for P2

2401
04:11:47,330 --> 04:11:45,410
NASA astronaut Mike Hopkins wrapping up

2402
04:11:49,670 --> 04:11:47,340
inspections and reconnection of a couple

2403
04:11:52,729 --> 04:11:49,680
of cables previously installed earlier

2404
04:11:56,389 --> 04:11:52,739
on today's spacewalk of the kolka to

2405
04:11:56,399 --> 04:12:03,170
foreign

2406
04:12:03,180 --> 04:12:14,389
side

2407
04:12:14,399 --> 04:12:19,189
City in my band on the opposite

2408
04:12:22,910 --> 04:12:21,649
copy sounds like it's good as well so

2409
04:12:25,610 --> 04:12:22,920
you can reconnect that one as well

2410
04:12:25,620 --> 04:12:40,490
mark

2411
04:12:40,500 --> 04:12:53,269
foreign

2412
04:13:20,410 --> 04:12:56,809
Center

2413
04:13:24,469 --> 04:13:22,729

NASA astronaut Mike Hopkins just

2414

04:13:26,269 --> 04:13:24,479

wrapping up inspections and reconnection

2415

04:13:28,250 --> 04:13:26,279

of a couple of cables previously

2416

04:13:30,889 --> 04:13:28,260

installed on today's space walk during

2417

04:13:33,889 --> 04:13:30,899

the kolka installation again the kolka

2418

04:13:35,929 --> 04:13:33,899

stands for Columbus Ka band antenna and

2419

04:13:38,149 --> 04:13:35,939

that coca will enable an independent

2420

04:13:40,849 --> 04:13:38,159

high bandwidth Communications link to

2421

04:13:47,510 --> 04:13:40,859

European ground stations

2422

04:13:47,520 --> 04:14:53,090

put on the photos

2423

04:14:53,100 --> 04:16:36,950

all right

2424

04:16:36,960 --> 04:17:33,889

foreign

2425

04:17:43,490 --> 04:17:38,030

Ty I got two more wire ties

2426

04:17:43,500 --> 04:17:48,229

okay

2427

04:17:52,670 --> 04:17:50,689

now three hours and 19 minutes into

2428

04:17:55,309 --> 04:17:52,680

today's space walk so far today our

2429

04:17:58,250 --> 04:17:55,319

space Walkers egress the hatch after

2430

04:18:01,189 --> 04:17:58,260

beginning today's space walk at 5 28 a.m

2431

04:18:02,809 --> 04:18:01,199

central time that began the 233rd

2432

04:18:05,450 --> 04:18:02,819

spacewalk in support of space station

2433

04:18:07,309 --> 04:18:05,460

maintenance and assembly

2434

04:18:10,250 --> 04:18:07,319

the duo worked together to remove the

2435

04:18:12,349 --> 04:18:10,260

polka or Columbus Ka band antenna from

2436

04:18:14,090 --> 04:18:12,359

the airlock with them and then brought

2437

04:18:15,110 --> 04:18:14,100

it to the Columbus module of the space

2438

04:18:17,210 --> 04:18:15,120

station

2439

04:18:19,130 --> 04:18:17,220

they then work together to remove bolts

2440

04:18:21,830 --> 04:18:19,140

on the Columbus panels and install the

2441

04:18:23,990 --> 04:18:21,840

kolka where the bolts were removed

2442

04:18:27,229 --> 04:18:24,000

following this Coco was secured to the

2443

04:18:30,050 --> 04:18:27,239

Columbus module and cables on kolka were

2444

04:18:31,910 --> 04:18:30,060

routed in order to connect it

2445

04:18:34,670 --> 04:18:31,920

at this time the team is troubleshooting

2446

04:18:36,349 --> 04:18:34,680

cable connections on the kolka and our

2447

04:18:39,670 --> 04:18:36,359

brainstorming ideas that they will relay

2448

04:18:44,149 --> 04:18:41,990

after this the duo headed to the

2449

04:18:46,309 --> 04:18:44,159

bartolomeo science platform where they

2450

04:18:48,469 --> 04:18:46,319

removed clamps holding cabling in place

2451

04:18:50,809 --> 04:18:48,479

which was then routed in order to

2452

04:18:52,849 --> 04:18:50,819

activate bartolomeo

2453

04:18:54,830 --> 04:18:52,859

teams on the ground are trouble shooting

2454

04:18:56,929 --> 04:18:54,840

some issues with the bartolomeo cable

2455

04:21:05,210 --> 04:18:56,939

connections and we will relay procedures

2456

04:21:10,370 --> 04:21:08,750

okay Andy I'm at the panel

2457

04:21:13,010 --> 04:21:10,380

um

2458

04:21:15,469 --> 04:21:13,020

copy

2459

04:21:19,429 --> 04:21:15,479

you are at the apcu connector panel so

2460

04:21:26,030 --> 04:21:19,439

you can disconnect the heiress cable P2

2461

04:22:33,170 --> 04:21:29,090

okay P2

2462

04:22:33,180 --> 04:22:38,410

okay we disconnected

2463

04:22:38,420 --> 04:22:43,309

copy it's disconnected so you can

2464

04:22:43,319 --> 04:22:48,550

go ahead no oh I'll take your call

2465

04:22:48,560 --> 04:22:52,429

so uh

2466

04:22:52,439 --> 04:22:56,030

five good pins

2467

04:22:56,040 --> 04:23:00,189

DMI van

2468

04:23:05,870 --> 04:23:03,469

copy sounds good so you can meet the

2469

04:23:07,849 --> 04:23:05,880

antenna plug that you brought that you

2470

04:23:11,689 --> 04:23:07,859

just routed and you can connect that to

2471

04:23:13,729 --> 04:23:11,699

the panel J2 which is now free and uh

2472

04:23:14,990 --> 04:23:13,739

just before you connect again just

2473

04:23:17,710 --> 04:23:15,000

double check or see if each other is

2474

04:23:17,720 --> 04:23:24,410

right there

2475

04:23:39,889 --> 04:23:27,830

and take each other is clear

2476

04:23:44,809 --> 04:23:42,530

five good pins interesting this one has

2477

04:24:07,849 --> 04:23:44,819

four pins instead of two

2478

04:24:14,389 --> 04:24:10,790

and connected over Center

2479

04:24:16,969 --> 04:24:14,399

copy now you can make the errors plug to

2480

04:24:19,610 --> 04:24:16,979

the antenna cable jack so you can remove

2481

04:24:22,429 --> 04:24:19,620

the Jack cap and Stow that on your mini

2482

04:24:24,830 --> 04:24:22,439

workstation and then you now three hours

2483

04:24:27,290 --> 04:24:24,840

and 26 minutes into today's space walk

2484

04:24:29,450 --> 04:24:27,300

NASA astronauts Mike Hopkins and Victor

2485

04:24:31,610 --> 04:24:29,460

Glover have encountered issues mating

2486

04:24:32,929 --> 04:24:31,620

the cable connections to the bartolomeo

2487

04:24:34,670 --> 04:24:32,939

science platform

2488

04:24:36,229 --> 04:24:34,680

they were able to soft dock the

2489

04:24:38,510 --> 04:24:36,239

connections and could move the connector

2490

04:24:40,670 --> 04:24:38,520

level level approximately halfway to

2491

04:24:42,130 --> 04:24:40,680

closed but could not get the lever to

2492

04:24:44,689 --> 04:24:42,140

move all the way to the mated position

2493

04:24:46,010 --> 04:24:44,699

the team in Mission Control is working a

2494

04:24:48,729 --> 04:24:46,020

troubleshooting plan for these

2495

04:24:53,929 --> 04:24:52,010

meanwhile kolka or the Columbus Ka band

2496

04:24:55,969 --> 04:24:53,939

antenna which was installed earlier on

2497

04:24:57,710 --> 04:24:55,979

today's spacewalk did not see the

2498

04:25:00,290 --> 04:24:57,720

indications that the ground team was

2499

04:25:01,250 --> 04:25:00,300

expecting after activating the kolka

2500

04:25:03,950 --> 04:25:01,260

heaters

2501
04:25:06,290 --> 04:25:03,960
so Hopkins has demated and remated the

2502
04:25:07,849 --> 04:25:06,300
associated connections and they are

2503
04:25:10,210 --> 04:25:07,859
working to activate heaters a second

2504
04:25:13,910 --> 04:25:12,590
teams in Mission Control Houston are

2505
04:25:15,530 --> 04:25:13,920
discussing options with their

2506
04:25:18,530 --> 04:25:15,540
counterparts at the European space

2507
04:25:20,510 --> 04:25:18,540
control center in Cologne

2508
04:26:02,389 --> 04:25:20,520
once that's done you can translate back

2509
04:26:08,090 --> 04:26:04,610
are you doing Mike

2510
04:26:12,290 --> 04:26:10,370
making nice thoughts be nice to the

2511
04:26:13,630 --> 04:26:12,300
connectors open now

2512
04:26:19,550 --> 04:26:13,640
for work

2513
04:26:24,290 --> 04:26:22,309

okay so we switch we need some good

2514

04:27:33,110 --> 04:26:24,300

vibes out here

2515

04:27:38,510 --> 04:27:35,870

all right I sorry to keep you waiting

2516

04:27:40,370 --> 04:27:38,520

um we still don't have an exact plan yet

2517

04:27:44,570 --> 04:27:40,380

but in the meantime we'd like you to

2518

04:27:46,550 --> 04:27:44,580

demate The j6 Terminator

2519

04:27:50,929 --> 04:27:46,560

and then you can mate P6

2520

04:29:18,590 --> 04:27:52,290

B6

2521

04:29:18,600 --> 04:29:31,130

foreign

2522

04:29:38,450 --> 04:29:34,309

pin socket Studio my band

2523

04:29:38,460 --> 04:29:42,830

copyright

2524

04:29:47,990 --> 04:29:45,530

now over three hours and 31 minutes into

2525

04:29:49,969 --> 04:29:48,000

today's space walk which began at 5 28

2526

04:29:53,149 --> 04:29:49,979

am

2527

04:29:54,710 --> 04:29:53,159

5 28 a.m Central Time Hopkins and Glover

2528

04:29:56,630 --> 04:29:54,720

have encountered issues meeting the

2529

04:29:58,849 --> 04:29:56,640

cable connections to the bartolomeo

2530

04:30:00,530 --> 04:29:58,859

science platform they were able to soft

2531

04:30:02,630 --> 04:30:00,540

dock the connections and could move the

2532

04:30:04,849 --> 04:30:02,640

connector level approximately halfway to

2533

04:30:06,530 --> 04:30:04,859

closed but could not get the lever to

2534

04:30:09,050 --> 04:30:06,540

move all the way to the mated position

2535

04:30:10,309 --> 04:30:09,060

the team in Mission Control is working a

2536

04:30:12,769 --> 04:30:10,319

troubleshooting plan for these

2537

04:30:14,469 --> 04:30:12,779

connectors we've got a good video from

2538

04:30:17,450 --> 04:30:14,479

you like

2539

04:30:19,250 --> 04:30:17,460

meanwhile kolka or the Columbus Ka band

2540

04:30:20,689 --> 04:30:19,260

antenna which was installed earlier on

2541

04:30:22,550 --> 04:30:20,699

today's spacewalk

2542

04:30:25,610 --> 04:30:22,560

did not see the indicators they were

2543

04:30:28,550 --> 04:30:25,620

expecting after activating the heater

2544

04:30:30,710 --> 04:30:28,560

flush with the so Hopkins has demated

2545

04:30:32,330 --> 04:30:30,720

and remated the associated connections

2546

04:30:33,530 --> 04:30:32,340

and they are working to activate heaters

2547

04:30:35,809 --> 04:30:33,540

a second time

2548

04:30:37,550 --> 04:30:35,819

in Mission Control are in discussion

2549

04:30:39,170 --> 04:30:37,560

regarding options with their

2550

04:30:42,710 --> 04:30:39,180

counterparts at the European space

2551
04:30:47,689 --> 04:30:44,630
if you look in there you can see the

2552
04:30:49,729 --> 04:30:47,699
pins the base of the pins is maybe just

2553
04:30:51,889 --> 04:30:49,739
over an inch they each also have a

2554
04:30:54,170 --> 04:30:51,899
little standoff around them so that's

2555
04:31:01,030 --> 04:30:54,180
also raised I think we may just be

2556
04:31:07,370 --> 04:31:04,550
the hard plastic on the inside yep

2557
04:31:10,010 --> 04:31:07,380
that's uh that's our thinking as well uh

2558
04:31:13,130 --> 04:31:10,020
the problem is that in order to securely

2559
04:31:14,630 --> 04:31:13,140
lock it in place we need that lever uh

2560
04:32:23,870 --> 04:31:14,640
all the way forward so we're still

2561
04:33:16,849 --> 04:32:47,149
foreign

2562
04:33:23,449 --> 04:33:20,150
maybe I'm back at the uh crew lock bag

2563
04:33:26,090 --> 04:33:23,459

I'm putting the cap

2564

04:33:29,869 --> 04:33:26,100

on a cap keeper yep you can put it on

2565

04:33:29,879 --> 04:33:37,990

after that and work

2566

04:33:43,730 --> 04:33:40,970

now three hours and 35 minutes into

2567

04:33:45,470 --> 04:33:43,740

today's space walk which began at 5 28

2568

04:33:47,629 --> 04:33:45,480

a.m Central Time

2569

04:33:49,490 --> 04:33:47,639

NASA astronauts Mike Hopkins and Victor

2570

04:33:51,529 --> 04:33:49,500

Glover have encountered issues mating

2571

04:33:57,170 --> 04:33:51,539

the cable connections to the bartolomeo

2572

04:34:04,490 --> 04:34:01,369

we will cap two of the plugs P1 P2 P3

2573

04:34:07,369 --> 04:34:04,500

and P4 because we'll leave this worksite

2574

04:34:09,830 --> 04:34:07,379

uh for a moment and once you've capped

2575

04:34:12,709 --> 04:34:09,840

two of them I then will send you back to

2576

04:34:15,410 --> 04:34:12,719

Coca and we'll be working on the Coca

2577

04:34:18,949 --> 04:34:15,420

cover removal

2578

04:34:20,390 --> 04:34:18,959

um so uh hopper for you you can remain

2579

04:34:22,970 --> 04:34:20,400

there we'll take a glove inspection and

2580

04:34:23,929 --> 04:34:22,980

have check while you wait for

2581

04:34:27,170 --> 04:34:23,939

um

2582

04:34:32,750 --> 04:34:31,129

hey okay and Andy for uh for one two

2583

04:34:35,629 --> 04:34:32,760

three and four

2584

04:34:37,849 --> 04:34:35,639

talking about the the Jack or the plug

2585

04:35:12,349 --> 04:34:37,859

size

2586

04:35:15,709 --> 04:35:14,090

again Hopkins and Glover have

2587

04:35:17,510 --> 04:35:15,719

encountered issues mating the cable

2588

04:35:20,150 --> 04:35:17,520

connections to the bartolomeo science

2589

04:35:21,769 --> 04:35:20,160

platform they were able to soft dock the

2590

04:35:23,750 --> 04:35:21,779

connections and could move the connector

2591

04:35:25,730 --> 04:35:23,760

level approximately halfway to closed

2592

04:35:27,650 --> 04:35:25,740

but could not get the lever to move all

2593

04:35:29,689 --> 04:35:27,660

the way to the mated position

2594

04:35:30,949 --> 04:35:29,699

the team in Mission Control is working a

2595

04:35:35,090 --> 04:35:30,959

troubleshooting plan for these

2596

04:35:39,590 --> 04:35:37,849

meanwhile kolka which is the Columbus Ka

2597

04:35:41,689 --> 04:35:39,600

band antenna which was installed earlier

2598

04:35:43,369 --> 04:35:41,699

on today's spacewalk did not see the

2599

04:35:46,070 --> 04:35:43,379

indications the ground was expecting

2600

04:35:48,890 --> 04:35:46,080

after activating the Columbus the Coca

2601
04:35:53,150 --> 04:35:51,709
Hopkins mated and demated the associated

2602
04:35:55,310 --> 04:35:53,160
connections

2603
04:35:58,010 --> 04:35:55,320
an attempt to activate the heaters a

2604
04:36:01,810 --> 04:35:59,330
in fact we don't need to have anything

2605
04:36:04,209 --> 04:36:01,820
at this point so we're going to get you

2606
04:36:06,769 --> 04:36:04,219
moving to the

2607
04:36:08,510 --> 04:36:06,779
pathos back off position which continues

2608
04:36:11,510 --> 04:36:08,520
to the Coca back off position so you can

2609
04:36:15,529 --> 04:36:11,520
work with Kate and suichi to take you to

2610
04:36:20,209 --> 04:36:17,390
okay don't get any help from coming that

2611
04:36:22,490 --> 04:36:20,219
way provide for that okay team so each

2612
04:36:25,010 --> 04:36:22,500
of you have a go to both back off

2613
04:36:26,330 --> 04:36:25,020

can I copy your go to both backup and

2614

04:36:28,129 --> 04:36:26,340

just to let you know a big picture to

2615

04:36:31,490 --> 04:36:28,139

take out your gcas we're going to take

2616

04:36:34,129 --> 04:36:31,500

you a station ask station Zenith station

2617

04:36:35,689 --> 04:36:34,139

port and then we'll get that uh big yaw

2618

04:36:38,410 --> 04:36:35,699

maneuver back in

2619

04:36:40,970 --> 04:36:38,420

sounds good

2620

04:36:42,830 --> 04:36:40,980

teams in Mission Control in discussion

2621

04:36:44,629 --> 04:36:42,840

with their counterparts at the European

2622

04:36:46,551 --> 04:36:44,639

space control center in Cologne have

2623

04:36:49,070 --> 04:36:46,561

recommended our spacewalkers work to

2624

04:36:50,990 --> 04:36:49,080

remove the kolka or Columbus Ka band

2625

04:36:53,510 --> 04:36:51,000

antenna which

2626
04:36:55,010 --> 04:36:53,520
antenna cover which was installed in

2627
04:36:57,470 --> 04:36:55,020
order to protect the antenna during

2628
04:36:59,390 --> 04:36:57,480
installation the cover is no longer

2629
04:37:30,590 --> 04:36:59,400
needed and will be jettisoned following

2630
04:37:30,600 --> 04:37:34,310
I was watching

2631
04:37:34,320 --> 04:38:41,869
good motion

2632
04:38:41,879 --> 04:39:59,990
foreign

2633
04:40:05,270 --> 04:40:02,868
hey Hopper while uh Ike's flying the arm

2634
04:40:08,330 --> 04:40:05,280
uh we'd like you to uh to ask you to

2635
04:40:09,708 --> 04:40:08,340
grab the black cap keeper from kolka it

2636
04:40:11,628 --> 04:40:09,718
should be up there by where the cable

2637
04:40:13,550 --> 04:40:11,638
bundles were and if you could grab that

2638
04:40:15,230 --> 04:40:13,560

and transfer it over to the popos

2639

04:40:17,090 --> 04:40:15,240

connector panel we'd appreciate it

2640

04:40:19,310 --> 04:40:17,100

because we'll need those caps there

2641

04:40:47,090 --> 04:40:19,320

later potentially if we need to leave

2642

04:40:47,100 --> 04:41:06,050

uh

2643

04:41:10,310 --> 04:41:08,330

yeah because this is the Apple Sparkle

2644

04:41:13,190 --> 04:41:10,320

position that we can continue on to uh

2645

04:41:15,230 --> 04:41:13,200

cocoa color removal if you guys already

2646

04:41:45,170 --> 04:41:15,240

yeah we're ready you have to go all the

2647

04:41:50,690 --> 04:41:48,170

Andy I'm going to lead the uh

2648

04:41:56,448 --> 04:41:50,700

large small adjustable here because I

2649

04:41:56,458 --> 04:42:00,590

removal

2650

04:42:04,310 --> 04:42:02,330

okay

2651
04:42:06,650 --> 04:42:04,320
like this we have two minutes the joke

2652
04:42:08,690 --> 04:42:06,660
has obviously

2653
04:42:11,750 --> 04:42:08,700
uh Hopper you can leave it if you want

2654
04:42:13,730 --> 04:42:11,760
but I shouldn't shouldn't eat it so uh

2655
04:42:18,650 --> 04:42:13,740
but either way we need to get it over to

2656
04:42:22,610 --> 04:42:20,750
to that

2657
04:42:33,890 --> 04:42:22,620
good motion

2658
04:42:33,900 --> 04:42:57,708
leave it yeah okay

2659
04:42:57,718 --> 04:43:14,208
a clear underneath you

2660
04:43:14,218 --> 04:43:35,030
um

2661
04:43:38,930 --> 04:43:36,830
and I once we get to the cold cut back

2662
04:43:41,090 --> 04:43:38,940
off we've got a third one to go in for

2663
04:43:42,350 --> 04:43:41,100

the cocoa cover removal if you're good

2664

04:43:44,990 --> 04:43:42,360

we'll do a little config and then take

2665

04:43:45,000 --> 04:44:04,490

uh okay

2666

04:44:10,550 --> 04:44:08,270

maybe I'm Gonna Catch the

2667

04:44:21,970 --> 04:44:10,560

black cat keeper to one of the folks on

2668

04:45:02,770 --> 04:44:24,530

now for once you've attempted them there

2669

04:45:08,208 --> 04:45:05,990

now three hours and 46 minutes into

2670

04:45:10,910 --> 04:45:08,218

today's space walk which began at 5 28

2671

04:45:12,350 --> 04:45:10,920

a.m Central Time Hopkins and Glover have

2672

04:45:14,090 --> 04:45:12,360

encountered issues mating the cable

2673

04:45:16,730 --> 04:45:14,100

connections to the bartolomeo science

2674

04:45:18,470 --> 04:45:16,740

platform they were able to soft dock the

2675

04:45:20,690 --> 04:45:18,480

connections and could move the connector

2676
04:45:22,788 --> 04:45:20,700
level approximately halfway to closed

2677
04:45:24,890 --> 04:45:22,798
but could not get the lever to move all

2678
04:45:26,208 --> 04:45:24,900
the way to the mated position the team

2679
04:45:27,410 --> 04:45:26,218
in Mission Control is working a

2680
04:45:30,708 --> 04:45:27,420
troubleshooting plan for these

2681
04:45:35,810 --> 04:45:33,830
meanwhile the polka or Columbus Ka band

2682
04:45:37,788 --> 04:45:35,820
antenna which was installed earlier on

2683
04:45:39,410 --> 04:45:37,798
today's spacewalk did not see the

2684
04:45:42,230 --> 04:45:39,420
indications the ground was expecting

2685
04:45:44,628 --> 04:45:42,240
after activating the Coca heaters

2686
04:45:46,490 --> 04:45:44,638
Hopkins demated and remated the

2687
04:45:48,530 --> 04:45:46,500
associated Connections in an attempt to

2688
04:45:53,090 --> 04:45:48,540

activate the heater however the heater

2689

04:45:56,208 --> 04:45:54,650

in addition to continuing

2690

04:45:58,070 --> 04:45:56,218

troubleshooting with their counterparts

2691

04:46:00,530 --> 04:45:58,080

at the European space control center in

2692

04:46:02,690 --> 04:46:00,540

Cologne the plan is to continue with

2693

04:46:12,288 --> 04:46:02,700

removing the Coca cover per the

2694

04:46:24,050 --> 04:46:15,050

this cover is no longer needed and will

2695

04:46:24,060 --> 04:46:56,830

okay okay complete

2696

04:46:56,840 --> 04:47:01,850

hey lke are you in position

2697

04:47:08,448 --> 04:47:03,708

uh you know I'm sorry are we doing the

2698

04:47:14,930 --> 04:47:11,270

well so we are removing the mli as part

2699

04:47:20,990 --> 04:47:16,390

okay

2700

04:47:29,628 --> 04:47:24,110

hey this is published uh for the cocoa

2701
04:47:36,770 --> 04:47:33,350
so there should be I think a a large

2702
04:47:39,110 --> 04:47:36,780
small adjustable that the hopper left I

2703
04:47:40,430 --> 04:47:39,120
should be there on the cover handrail so

2704
04:47:41,868 --> 04:47:40,440
you can grab that and hand it to pop

2705
04:47:48,050 --> 04:47:41,878
Hopper and Hopper can put it in the crew

2706
04:47:53,270 --> 04:47:51,410
we might use it for the cover removal

2707
04:47:56,270 --> 04:47:53,280
I give it to them after we get the cover

2708
04:48:00,050 --> 04:47:56,280
off sure no problem we just uh want to

2709
04:48:00,060 --> 04:48:04,270
yeah we'll take it off

2710
04:48:10,670 --> 04:48:07,788
all right um Hopper then you can remove

2711
04:48:14,030 --> 04:48:10,680
the temporary mli tab a that's the one

2712
04:48:17,208 --> 04:48:14,040
by bolt 2 and then you can pass MLA

2713
04:48:21,830 --> 04:48:17,218

around the Nader side to Ike and then

2714

04:48:21,840 --> 04:48:26,930

okay a is released

2715

04:48:26,940 --> 04:48:31,868

okay let me uh

2716

04:48:36,590 --> 04:48:34,310

well the team in Mission Control Houston

2717

04:48:38,690 --> 04:48:36,600

continues to consider a forward plan on

2718

04:48:40,250 --> 04:48:38,700

the bartolomeo power connections the

2719

04:48:43,310 --> 04:48:40,260

team is moving forward with the planned

2720

04:48:45,890 --> 04:48:43,320

kolka or Columbus Ka band antenna cover

2721

04:48:47,510 --> 04:48:45,900

removal as planned the cover was placed

2722

04:48:49,788 --> 04:48:47,520

in order to protect the antenna during

2723

04:48:51,470 --> 04:48:49,798

installation because it is no longer

2724

04:48:52,610 --> 04:48:51,480

needed it will be jettisoned following

2725

04:48:54,590 --> 04:48:52,620

its removal

2726

04:48:56,208 --> 04:48:54,600

and to avoid contact with the silver

2727

04:49:26,448 --> 04:48:56,218

tape surfaces once we remove the

2728

04:49:32,570 --> 04:49:28,670

okay I could probably give it a few

2729

04:49:32,580 --> 04:49:40,730

so

2730

04:49:40,740 --> 04:49:48,070

you have MLA

2731

04:49:53,990 --> 04:49:51,288

and I you can install the integrated

2732

04:50:05,990 --> 04:49:54,000

coca velcro tabs back on Tab Bravo and

2733

04:50:12,050 --> 04:50:09,110

okay let's see

2734

04:50:16,850 --> 04:50:12,060

you can probably come up and get the

2735

04:50:20,650 --> 04:50:19,368

me too yeah I may have to get off the

2736

04:50:40,448 --> 04:50:20,660

arm anyway so

2737

04:50:45,470 --> 04:50:43,310

NASA astronauts Mike Hopkins and Victor

2738

04:50:47,330 --> 04:50:45,480

Glover continuing to work together to

2739

04:50:49,910 --> 04:50:47,340

remove the cover on the kolka or

2740

04:50:51,948 --> 04:50:49,920

Columbus Ka band antenna which was

2741

04:50:54,470 --> 04:50:51,958

installed earlier on today's spacewalk

2742

04:50:55,788 --> 04:50:54,480

the cover on the Coca it was installed

2743

04:50:59,030 --> 04:50:55,798

to protect the antenna during

2744

04:51:01,670 --> 04:50:59,040

installation but is no longer needed

2745

04:51:03,650 --> 04:51:01,680

Glover will jettison the cover wall on

2746

04:51:05,930 --> 04:51:03,660

the Canada arm too

2747

04:51:07,670 --> 04:51:05,940

on Earth the cover weighs about 34

2748

04:51:09,890 --> 04:51:07,680

pounds of course in the microgravity

2749

04:51:11,930 --> 04:51:09,900

environment environment of space it

2750

04:51:37,250 --> 04:51:11,940

weighs nothing but still of course has

2751
04:51:44,030 --> 04:51:39,708
that's the tab just that little one with

2752
04:51:47,990 --> 04:51:45,288
um

2753
04:51:50,570 --> 04:51:48,000
that was covering up

2754
04:51:52,190 --> 04:51:50,580
the other tabs right it was over the top

2755
04:51:56,090 --> 04:51:52,200
of them

2756
04:51:56,100 --> 04:52:04,730
I think so

2757
04:52:13,010 --> 04:52:07,190
and like it's just to uh cover up the

2758
04:52:17,448 --> 04:52:15,890
okay yep full Tabs are back

2759
04:52:21,230 --> 04:52:17,458
connected

2760
04:52:21,240 --> 04:52:24,890
through

2761
04:52:30,770 --> 04:52:27,770
mli

2762
04:52:32,750 --> 04:52:30,780
is back to uh itself which is attached

2763
04:52:34,610 --> 04:52:32,760

to the 15.

2764

04:52:36,650 --> 04:52:34,620

puppy looks good and uh just to check

2765

04:52:40,250 --> 04:52:36,660

you covered the velcro tabs as well on

2766

04:52:50,628 --> 04:52:41,930

houses

2767

04:52:56,390 --> 04:52:53,810

okay complete

2768

04:53:01,250 --> 04:52:56,400

I you can take your brq rats and put it

2769

04:53:01,260 --> 04:53:23,150

or

2770

04:53:27,190 --> 04:53:25,310

if your key red is on the cocoa cover

2771

04:53:29,448 --> 04:53:27,200

handrail

2772

04:53:30,890 --> 04:53:29,458

copy and then just a reminder of a

2773

04:53:32,448 --> 04:53:30,900

caution to avoid contact with the

2774

04:53:33,470 --> 04:53:32,458

antenna dish once the temperate cover is

2775

04:53:35,390 --> 04:53:33,480

removed

2776

04:53:37,910 --> 04:53:35,400

so with that uh I think you can grab

2777

04:54:02,868 --> 04:53:37,920

your PDT and you're looking for Alpha

2778

04:54:02,878 --> 04:54:06,590

the house is sitting counterclockwise

2779

04:54:06,600 --> 04:54:31,128

and 10 by Hike

2780

04:54:35,510 --> 04:54:33,530

and Andy I was uh

2781

04:54:37,730 --> 04:54:35,520

trying to tighten up that

2782

04:54:40,250 --> 04:54:37,740

you know why

2783

04:54:42,590 --> 04:54:40,260

and I inadvertently pulled the fits in

2784

04:54:45,590 --> 04:54:42,600

I'm reinstalling

2785

04:54:47,770 --> 04:54:45,600

and it's reinstalled

2786

04:54:50,510 --> 04:54:47,780

copy that

2787

04:54:57,310 --> 04:54:50,520

[Applause]

2788

04:55:02,810 --> 04:55:01,250

Andy Alpha seven counter two

2789

04:55:05,330 --> 04:55:02,820

that's a good read back so you can

2790

04:55:10,670 --> 04:55:05,340

release the temporary cover bolts uh

2791

04:55:10,680 --> 04:55:29,150

or

2792

04:55:29,160 --> 04:55:34,930

you know Zenith salt is removed

2793

04:55:34,940 --> 04:55:41,150

coffee do you have a turn count just

2794

04:55:41,160 --> 04:56:03,550

foreign

2795

04:56:07,190 --> 04:56:05,448

copy

2796

04:56:21,350 --> 04:56:07,200

sorry that's the meter fault the meter

2797

04:56:21,360 --> 04:56:32,170

foreign

2798

04:56:36,110 --> 04:56:34,670

T once you've done that then you can

2799

04:56:38,208 --> 04:56:36,120

check your Ingress Aid and your mini

2800

04:56:42,530 --> 04:56:38,218

workstation and if you need to you can

2801
04:56:44,810 --> 04:56:42,540
see a GCA to put the Coca cover

2802
04:56:46,670 --> 04:56:44,820
uh handrail in the bottom of your work

2803
04:56:52,610 --> 04:56:46,680
envelope and then next thing will be to

2804
04:57:04,380 --> 04:56:54,350
it works

2805
04:57:04,390 --> 04:57:23,330
[Music]

2806
04:57:27,110 --> 04:57:25,788
and then once it's open you think that's

2807
04:57:28,730 --> 04:57:27,120
a good time to take it or do you want me

2808
04:57:30,708 --> 04:57:28,740
to get the cover all the way off

2809
04:57:32,930 --> 04:57:30,718
obviously get it all the way off and

2810
04:57:40,970 --> 04:57:32,940
let's get away from

2811
04:57:45,050 --> 04:57:42,288
unless you think it's going to get in

2812
04:57:47,628 --> 04:57:45,060
your way no no

2813
04:57:49,788 --> 04:57:47,638

okay okay you ready for the GTA

2814

04:57:51,708 --> 04:57:49,798

paper and we don't have publish here we

2815

04:57:54,110 --> 04:57:51,718

are just going to take you uh station

2816

04:57:56,448 --> 04:57:54,120

forward and station Venus simultaneously

2817

04:57:58,610 --> 04:57:56,458

we're gonna go real slow here and give

2818

04:58:04,670 --> 04:57:58,620

us any Deltas as he needed

2819

04:58:04,680 --> 04:58:08,810

toward my back

2820

04:59:02,470 --> 04:58:10,610

two centimeters

2821

04:59:06,830 --> 04:59:04,970

we're in a brief expected Handover

2822

04:59:10,010 --> 04:59:06,840

between satellites and we'll regain

2823

04:59:12,948 --> 04:59:10,020

Communications with the crew shortly

2824

04:59:20,810 --> 04:59:12,958

where's my head 30 centimeters puppy

2825

04:59:20,820 --> 04:59:30,948

motion

2826

04:59:30,958 --> 04:59:36,650

okay that's 30 centimeters

2827

04:59:40,310 --> 04:59:38,208

okay I'm gonna

2828

04:59:41,448 --> 04:59:40,320

open the cover of some here and then we

2829

04:59:44,570 --> 04:59:41,458

may need a

2830

04:59:47,810 --> 04:59:44,580

more centimeters in that same direction

2831

04:59:47,820 --> 04:59:54,410

the antenna helper I'll see it yes

2832

04:59:54,420 --> 04:59:57,350

there it is

2833

05:00:07,310 --> 05:00:00,650

okay 30 more centimeters

2834

05:00:07,320 --> 05:00:12,050

copy study mentors 30 centimeters

2835

05:00:17,390 --> 05:00:15,368

and obviously most emotional

2836

05:00:26,628 --> 05:00:17,400

thank you

2837

05:00:30,650 --> 05:00:28,910

NASA astronauts Mike Hopkins and Victor

2838

05:00:33,230 --> 05:00:30,660

Glover continuing to work together

2839

05:00:35,628 --> 05:00:33,240

together to remove the kolka or Columbus

2840

05:00:37,550 --> 05:00:35,638

Ka band antenna cover

2841

05:00:39,708 --> 05:00:37,560

this cover was placed in order to

2842

05:00:42,110 --> 05:00:39,718

protect the antenna during installation

2843

05:00:43,788 --> 05:00:42,120

because this cover is no longer needed

2844

05:00:47,628 --> 05:00:43,798

it will be jettisoned off of the Canada

2845

05:00:56,150 --> 05:00:47,638

arm by NASA astronaut Victor Glover

2846

05:00:56,160 --> 05:01:03,460

uh

2847

05:01:11,270 --> 05:01:05,770

[Music]

2848

05:01:16,550 --> 05:01:14,090

and lke before you jettison the cover

2849

05:01:19,490 --> 05:01:16,560

you'll be retrieved you'll be retrieving

2850

05:01:22,310 --> 05:01:19,500

the adjustable with the temporary mli so

2851

05:01:25,730 --> 05:01:22,320

if at that point you can also retrieve

2852

05:01:27,708 --> 05:01:25,740

the large small adjustable if you can't

2853

05:01:28,910 --> 05:01:27,718

hand it to Hopper that's fine you can

2854

05:01:34,128 --> 05:01:28,920

just keep that on your mini workstation

2855

05:01:34,138 --> 05:01:45,230

okay

2856

05:01:48,948 --> 05:01:47,330

all right Kate solution do we have a

2857

05:02:02,030 --> 05:01:48,958

published I've got the cover in the mli

2858

05:02:07,430 --> 05:02:03,948

all right Ike we're with you we have a

2859

05:02:07,440 --> 05:02:43,190

foreign

2860

05:02:43,200 --> 05:03:18,288

looking for

2861

05:03:18,298 --> 05:03:29,270

all right I think you're well clear

2862

05:03:33,410 --> 05:03:31,788

all right uh guys

2863

05:03:34,670 --> 05:03:33,420

um we're gonna switch it up here a

2864

05:03:36,830 --> 05:03:34,680

little bit

2865

05:03:39,708 --> 05:03:36,840

um well I'll give you the big picture uh

2866

05:03:41,868 --> 05:03:39,718

we'll take a club check and uh have a

2867

05:03:43,730 --> 05:03:41,878

check from both of you

2868

05:03:45,708 --> 05:03:43,740

um and then I'll just explain you what

2869

05:03:48,890 --> 05:03:45,718

we're going to do Hopper we'll have you

2870

05:03:53,090 --> 05:03:51,530

um crew lock bag there's a wire tie

2871

05:03:54,470 --> 05:03:53,100

caddy in there that you can retrieve and

2872

05:03:56,628 --> 05:03:54,480

once you have the wire tag caddy then

2873

05:03:58,850 --> 05:03:56,638

we'll get you to the go into the papoose

2874

05:04:01,310 --> 05:03:58,860

connector panel where you'll be mating

2875

05:04:04,550 --> 05:04:01,320

P1 and P2 and then wire tying them in

2876

05:04:06,590 --> 05:04:04,560

place for you like we're going to skip

2877

05:04:08,150 --> 05:04:06,600

going down to Barcelo Mayo so we'll

2878

05:04:20,930 --> 05:04:08,160

essentially have you going straight to

2879

05:04:26,690 --> 05:04:23,570

okay Andy copy

2880

05:04:30,590 --> 05:04:26,700

and uh Kate Oishi helicopter

2881

05:04:31,910 --> 05:04:30,600

we copy this is a Public's location

2882

05:04:33,830 --> 05:04:31,920

uh

2883

05:04:35,390 --> 05:04:33,840

the next thing

2884

05:04:37,310 --> 05:04:35,400

okay Andy can you say that one more time

2885

05:04:39,110 --> 05:04:37,320

for me

2886

05:04:39,890 --> 05:04:39,120

uh so for you so Kate and switches

2887

05:04:41,510 --> 05:04:39,900

should already have the words

2888

05:04:46,970 --> 05:04:41,520

essentially we're taking you straight to

2889

05:04:46,980 --> 05:04:52,910

okay now I'm not picking up any uh

2890

05:04:56,390 --> 05:04:54,830

picking up the cap Keepers and things so

2891

05:04:57,708 --> 05:04:56,400

let's go straight to this but that's

2892

05:04:58,550 --> 05:04:57,718

right never mind okay all right I'm

2893

05:05:00,708 --> 05:04:58,560

ready

2894

05:05:03,410 --> 05:05:00,718

uh however you need to come

2895

05:05:05,628 --> 05:05:03,420

out I'm getting the wire tie caddy out

2896

05:05:08,270 --> 05:05:05,638

of pre-lock bag one and then going to

2897

05:05:10,190 --> 05:05:08,280

the people's connector panel top Andy

2898

05:05:12,170 --> 05:05:10,200

are you ready yeah yeah so just for you

2899

05:05:14,510 --> 05:05:12,180

while you're doing the fly uh to the

2900

05:05:17,750 --> 05:05:14,520

jettison position you can retrieve the

2901

05:05:19,610 --> 05:05:17,760

temporary mli and the adjustable and

2902

05:05:27,490 --> 05:05:19,620

also the large small adjustable ones so

2903

05:05:33,650 --> 05:05:30,890

the adjustable floors more adjustable

2904

05:05:36,288 --> 05:05:33,660

and what else that there should also be

2905

05:05:42,708 --> 05:05:36,298

a small small adjustable uh holding the

2906

05:05:47,390 --> 05:05:45,590

I'll do that in a row Alicia Kate you

2907

05:05:49,010 --> 05:05:47,400

have a go

2908

05:05:51,830 --> 05:05:49,020

easier to publish

2909

05:06:51,650 --> 05:05:51,840

not the uh getting ready for the manual

2910

05:06:51,660 --> 05:06:56,810

see that

2911

05:07:10,730 --> 05:06:59,448

and Kate verified that step 8.5 is

2912

05:07:15,350 --> 05:07:13,010

Drew that's a negative we're not doing

2913

05:07:21,110 --> 05:07:15,360

bartolomeo clamps in Step eight decimal

2914

05:07:25,788 --> 05:07:23,628

and uh that's a firmative k but the

2915

05:07:29,030 --> 05:07:25,798

setup to get us into the maneuver for uh

2916

05:07:36,650 --> 05:07:29,040

moving on is is part of Step 8.5 so we

2917

05:07:36,660 --> 05:07:42,948

you copy eight decimal five is in work

2918

05:07:42,958 --> 05:07:50,948

hey Andy questions

2919

05:07:55,970 --> 05:07:53,868

and uh just for your awareness I in

2920

05:07:57,890 --> 05:07:55,980

order to get to the covered jettison

2921

05:07:59,990 --> 05:07:57,900

position we need to take you down to the

2922

05:08:01,310 --> 05:08:00,000

uh Barcelona position you won't be doing

2923

05:08:02,990 --> 05:08:01,320

anything down there we just need to fly

2924

05:08:08,390 --> 05:08:03,000

you there in order to get you to the

2925

05:08:11,990 --> 05:08:10,730

yeah that's fine pay for the mli it's

2926

05:08:14,030 --> 05:08:12,000

just the piece they wrote around the

2927

05:08:16,430 --> 05:08:14,040

bottom right the rest of the mli and the

2928

05:08:23,890 --> 05:08:16,440

cover stays on the cover

2929

05:08:27,890 --> 05:08:26,150

and we'd love to have the large small

2930

05:08:30,830 --> 05:08:27,900

adjustable and a small small adjustable

2931

05:08:33,110 --> 05:08:30,840

and the temporary inner light on my mini

2932

05:08:35,330 --> 05:08:33,120

Workstation

2933

05:08:37,368 --> 05:08:35,340

excellent thank you and when you get a

2934

05:08:46,090 --> 05:08:37,378

second we'd love a glove check and have

2935

05:08:50,270 --> 05:08:48,948

no change

2936

05:08:52,070 --> 05:08:50,280

Hopper

2937

05:09:01,610 --> 05:08:52,080

it's like ice so we're starting the

2938

05:09:01,620 --> 05:09:08,390

with emotions

2939

05:09:56,090 --> 05:09:11,330

continue

2940

05:09:56,100 --> 05:10:04,090

foreign

2941

05:10:09,470 --> 05:10:07,250

Space Walk which began at 5 28 a.m

2942

05:10:10,970 --> 05:10:09,480

Central Time NASA astronauts Mike

2943

05:10:12,410 --> 05:10:10,980

Hopkins and Victor Glover have

2944

05:10:14,090 --> 05:10:12,420

encountered issues mating the cable

2945

05:10:16,610 --> 05:10:14,100

connections to the bartolomeo science

2946

05:10:18,230 --> 05:10:16,620

platform they were able to soft dock the

2947

05:10:20,930 --> 05:10:18,240

connections and could move the connector

2948

05:10:23,090 --> 05:10:20,940

level lever approximately halfway to

2949

05:10:25,128 --> 05:10:23,100

closed but could not get the lever to

2950

05:10:27,110 --> 05:10:25,138

move all the way to the mated position

2951
05:10:28,610 --> 05:10:27,120
the team in Mission Control worked a

2952
05:10:30,948 --> 05:10:28,620
troubleshooting for these connector

2953
05:10:33,170 --> 05:10:30,958
connectors in which Hopkins will wire

2954
05:10:34,850 --> 05:10:33,180
tie the connectors follow and following

2955
05:10:36,590 --> 05:10:34,860
this he'll head to the airlock to grab

2956
05:10:38,628 --> 05:10:36,600
supplies for the next portion of the

2957
05:10:42,110 --> 05:10:38,638
spacewalk which will occur at the P6

2958
05:10:46,670 --> 05:10:44,390
meanwhile NASA astronaut Victor Glover

2959
05:10:49,550 --> 05:10:46,680
is working to jettison the kolka or

2960
05:10:51,470 --> 05:10:49,560
Columbus Ka band antenna cover which was

2961
05:10:54,230 --> 05:10:51,480
placed in order to protect the Coca

2962
05:10:56,030 --> 05:10:54,240
antenna during installation kolka was

2963
05:10:58,190 --> 05:10:56,040

installed by Hopkins and Glover earlier

2964

05:11:00,470 --> 05:10:58,200

in today's spacewalk

2965

05:11:02,390 --> 05:11:00,480

because the cover is no longer needed it

2966

05:11:03,770 --> 05:11:02,400

will be jettisoned by Glover on the

2967

05:11:05,270 --> 05:11:03,780

Canada arm too

2968

05:11:10,190 --> 05:11:05,280

following this he'll meet up with

2969

05:11:16,430 --> 05:11:12,890

I'm going to try to tie down the lever

2970

05:11:22,490 --> 05:11:16,440

uh to the nearest handrail to prevent it

2971

05:11:22,500 --> 05:12:06,250

okay

2972

05:12:06,260 --> 05:12:23,150

copy P1 to J1

2973

05:12:28,670 --> 05:12:25,970

105.

2974

05:12:30,770 --> 05:12:28,680

looking in my band

2975

05:12:32,340 --> 05:12:30,780

copy

2976

05:12:38,570 --> 05:12:32,350

station

2977

05:12:38,580 --> 05:12:57,310

and you have to go to GCA to publish

2978

05:13:01,970 --> 05:12:59,930

we're in a brief expected Handover

2979

05:13:03,948 --> 05:13:01,980

between satellites and we'll regain

2980

05:13:17,750 --> 05:13:03,958

communication and visual of the crew

2981

05:13:17,760 --> 05:13:23,110

okay

2982

05:13:41,708 --> 05:13:26,868

copy so I um is that wire tie going down

2983

05:13:45,948 --> 05:13:44,270

Mr last but it looks you guys figured

2984

05:13:49,368 --> 05:13:45,958

out you need to go into standby to load

2985

05:13:52,010 --> 05:13:49,378

the parameters for step nine

2986

05:13:54,410 --> 05:13:52,020

uh yeah now we are just talking about

2987

05:13:58,208 --> 05:13:54,420

the losing the camera parameters but now

2988

05:13:58,218 --> 05:14:56,030

okay copy that

2989

05:14:56,040 --> 05:15:00,890

I almost done with

2990

05:15:04,490 --> 05:15:02,570

like almost done with the configuration

2991

05:15:06,470 --> 05:15:04,500

there was a lot of reconfigure uh we're

2992

05:15:08,628 --> 05:15:06,480

setting you up for the clever jettison

2993

05:15:11,628 --> 05:15:08,638

this is going to be the very long uh

2994

05:15:28,128 --> 05:15:11,638

performance maneuver for the big cover

2995

05:15:28,138 --> 05:15:34,550

okay can you hear me now yes

2996

05:15:40,570 --> 05:15:36,830

all right Ike you're coming in broken To

2997

05:15:43,190 --> 05:15:40,580

None eb1 M1

2998

05:15:45,590 --> 05:15:43,200

contextual clear and I've got iCloud and

2999

05:15:47,890 --> 05:15:45,600

clear okay we're having problems uh

3000

05:15:52,868 --> 05:15:47,900

hearing Ike up here

3001

05:15:55,730 --> 05:15:52,878

I heard what Kate said okay he said uh

3002

05:15:58,550 --> 05:15:55,740

and he's ready to go all right Hopper

3003

05:16:00,590 --> 05:15:58,560

and we did copy Ike's last call so uh

3004

05:16:01,490 --> 05:16:00,600

like we've I think we've got good calm

3005

05:16:09,788 --> 05:16:01,500

with you again maybe that was a

3006

05:16:28,390 --> 05:16:11,930

it's all

3007

05:16:35,570 --> 05:16:31,128

yeah Hopper that looks really good in

3008

05:16:35,580 --> 05:17:12,650

foreign

3009

05:17:18,830 --> 05:17:15,230

and I did you hear that

3010

05:17:20,750 --> 05:17:18,840

okay he heard you on that one Kate

3011

05:17:23,208 --> 05:17:20,760

all right Hopper if you and the team are

3012

05:17:24,948 --> 05:17:23,218

okay with you acting as a relay for go

3013

05:17:27,530 --> 05:17:24,958

for motion I just want to make sure

3014

05:17:30,830 --> 05:17:27,540

everybody's good with this on the ground

3015

05:17:38,750 --> 05:17:30,840

yeah we didn't hear Ike's last call

3016

05:17:43,610 --> 05:17:41,750

said he had you uh declare Andy yeah I

3017

05:17:52,990 --> 05:17:43,620

copied Ike he came in uh very broken

3018

05:17:57,948 --> 05:17:55,310

Andy uh we're a little bit hesitant to

3019

05:18:00,110 --> 05:17:57,958

bring him uh to the Jellison person in

3020

05:18:04,490 --> 05:18:00,120

this conversation we need a direct clear

3021

05:18:31,128 --> 05:18:06,530

yeah we understand sweetie we're just

3022

05:18:34,310 --> 05:18:32,930

and Opera will you ask her if there's an

3023

05:18:43,490 --> 05:18:34,320

intermediate position or if it goes

3024

05:18:47,208 --> 05:18:45,770

yeah we haven't we've been in this uh

3025

05:18:49,610 --> 05:18:47,218

kind of similar to this location before

3026

05:18:51,230 --> 05:18:49,620

we haven't had con problems um but we do

3027

05:18:53,208 --> 05:18:51,240

not have an intermediate position we go

3028

05:19:03,110 --> 05:18:53,218

directly to the back opposition how are

3029

05:19:07,910 --> 05:19:05,270

we didn't hear any call from Mike Hopper

3030

05:19:25,430 --> 05:19:07,920

he says uh three by five and copy no

3031

05:19:29,510 --> 05:19:27,170

thank you so we're still passing here

3032

05:20:13,250 --> 05:19:29,520

waiting for a call from you guys

3033

05:22:30,610 --> 05:21:17,750

foreign

3034

05:22:35,090 --> 05:22:33,230

station Houston for a big picture for

3035

05:22:37,250 --> 05:22:35,100

Roblox we're going to give you a go to

3036

05:22:39,350 --> 05:22:37,260

proceed with the maneuver

3037

05:22:42,110 --> 05:22:39,360

um we feel like this is probably a

3038

05:22:45,048 --> 05:22:42,120

blockage issue uh we'll use relaycom if

3039

05:22:47,270 --> 05:22:45,058

we need to the final position for the uh

3040

05:22:49,250 --> 05:22:47,280

the jettison is a is a better location

3041

05:22:50,930 --> 05:22:49,260

for us if we need to somehow get off the

3042

05:22:52,788 --> 05:22:50,940

arm or move from that position back to

3043

05:22:55,850 --> 05:22:52,798

the structure so we're going to give a

3044

05:22:59,030 --> 05:22:55,860

go for that uh right now and you can

3045

05:23:00,890 --> 05:22:59,040

check comma on the way to verify uh that

3046

05:23:02,030 --> 05:23:00,900

we're going to get that back and if at

3047

05:23:04,010 --> 05:23:02,040

any point you're uncomfortable with that

3048

05:23:07,070 --> 05:23:04,020

you can use the pause button and we can

3049

05:23:10,850 --> 05:23:09,170

okay copy all we'll continue with the

3050

05:23:12,470 --> 05:23:10,860

maneuver we'll use Hopper as a relay if

3051
05:23:14,150 --> 05:23:12,480
we need to we'll check com on the way

3052
05:23:16,190 --> 05:23:14,160
during the maneuver so lke if you're

3053
05:23:17,628 --> 05:23:16,200
prepared to give us some talking as

3054
05:23:20,150 --> 05:23:17,638
you're headed out there so we know that

3055
05:23:25,670 --> 05:23:20,160
we have a positive confirmation of calm

3056
05:23:25,680 --> 05:23:33,190
and we talk for yourself

3057
05:23:33,200 --> 05:23:36,830
in motion

3058
05:23:36,840 --> 05:23:45,110
oh sure

3059
05:23:45,120 --> 05:23:54,410
so like if you're uh needing to continue

3060
05:23:54,420 --> 05:24:08,350
motion continue

3061
05:24:12,890 --> 05:24:10,670
and like if you need motions continue

3062
05:24:14,990 --> 05:24:12,900
like if you need another topic to talk

3063
05:24:18,770 --> 05:24:15,000

about we'll take a glove inspection have

3064

05:24:18,780 --> 05:24:29,570

yeah I'm using one of my hands right now

3065

05:24:29,580 --> 05:24:40,810

I have to try

3066

05:24:50,990 --> 05:24:43,788

all right Hopper I think you got the P1

3067

05:25:04,490 --> 05:24:54,470

okay you can make two mate P2 and wire

3068

05:25:04,500 --> 05:25:07,430

okay good

3069

05:25:37,208 --> 05:25:09,048

motion continue

3070

05:25:42,590 --> 05:25:40,128

NASA astronaut Victor Glover now on the

3071

05:25:44,390 --> 05:25:42,600

Canada arm 2 being controlled by NASA

3072

05:25:56,330 --> 05:25:44,400

astronaut Kate rubin's inside the space

3073

05:26:00,410 --> 05:25:59,270

Victor well NASA astronaut Victor Glover

3074

05:26:03,170 --> 05:26:00,420

will

3075

05:26:05,390 --> 05:26:03,180

be on the Canada arm too as he jettisons

3076

05:26:08,510 --> 05:26:05,400

the cocoa cover again the kolka is the

3077

05:26:10,250 --> 05:26:08,520

Columbus Ka band antenna and it had a

3078

05:26:11,930 --> 05:26:10,260

cover on it which was removed a short

3079

05:26:14,090 --> 05:26:11,940

time ago

3080

05:26:15,530 --> 05:26:14,100

the cover is no longer needed as it was

3081

05:26:17,448 --> 05:26:15,540

used to protect the antenna during

3082

05:26:57,548 --> 05:26:17,458

install and because of this it will soon

3083

05:26:57,558 --> 05:27:37,970

can we copy hike

3084

05:27:37,980 --> 05:28:02,750

continue

3085

05:28:02,760 --> 05:28:10,850

and Ike's almost there

3086

05:28:10,860 --> 05:28:17,170

let me copy your coffee

3087

05:28:17,180 --> 05:28:20,390

thank you

3088

05:28:27,770 --> 05:28:21,948

giving me a warm feeling to hear your

3089

05:28:35,628 --> 05:28:31,010

all right you're in position

3090

05:28:39,530 --> 05:28:37,010

are there breaks or anything for this

3091

05:28:41,330 --> 05:28:39,540

are we just GK complete

3092

05:28:43,128 --> 05:28:41,340

do not see a brakes on in the robo

3093

05:28:46,548 --> 05:28:43,138

procedure so I'll just call that GCA

3094

05:28:58,128 --> 05:28:46,558

complete he said complete

3095

05:28:58,138 --> 05:29:01,548

happy Mandy

3096

05:29:06,770 --> 05:29:04,368

yeah sorry I I copy you are in the

3097

05:29:09,048 --> 05:29:06,780

jettison position uh so just one last

3098

05:29:10,910 --> 05:29:09,058

time I want to confirm that you have the

3099

05:29:13,190 --> 05:29:10,920

large small adjustable the small small

3100

05:29:16,310 --> 05:29:13,200

adjustable and the temporary mli on your

3101

05:29:22,390 --> 05:29:18,230

all of those are ready to my mini

3102

05:29:28,670 --> 05:29:26,270

excellent we are then ready to get us in

3103

05:29:33,890 --> 05:29:30,230

um so

3104

05:29:36,470 --> 05:29:33,900

jettison main direction is at but we

3105

05:29:40,490 --> 05:29:36,480

also want you to

3106

05:29:46,990 --> 05:29:40,500

um jettison about 30 degrees Nader of

3107

05:29:52,128 --> 05:29:49,490

standby before I give you the final go

3108

05:29:52,138 --> 05:30:07,448

and goodbye

3109

05:30:12,830 --> 05:30:10,670

all right like you have a go so you can

3110

05:30:15,770 --> 05:30:12,840

release your ret from the temporary

3111

05:30:17,270 --> 05:30:15,780

cover and then jettison in the AFT and

3112

05:30:21,410 --> 05:30:17,280

30 degrees

3113

05:30:21,420 --> 05:30:27,708

a brt red is back to my workstation

3114

05:30:27,718 --> 05:30:31,430

got two hands on the cover

3115

05:30:36,410 --> 05:30:34,190

show myself facing ass

3116

05:30:38,628 --> 05:30:36,420

like the radiators

3117

05:30:40,368 --> 05:30:38,638

30 degrees or so

3118

05:30:45,110 --> 05:30:40,378

down

3119

05:30:49,010 --> 05:30:46,970

this view of NASA astronaut Victor

3120

05:30:52,670 --> 05:30:49,020

Glover as he prepares to jettison

3121

05:30:55,070 --> 05:30:52,680

nicolka or Columbus Ka band antenna

3122

05:30:58,310 --> 05:30:55,080

as it is no longer needed

3123

05:30:59,690 --> 05:30:58,320

okay here we go countdown three

3124

05:31:07,310 --> 05:30:59,700

two

3125

05:31:13,368 --> 05:31:11,090

the other way Focus covers jettison

3126
05:31:15,110 --> 05:31:13,378
and with that the Coca cover has been

3127
05:31:20,810 --> 05:31:15,120
jettisoned

3128
05:31:26,390 --> 05:31:24,708
and copy on board eyes as well so IQ can

3129
05:31:31,070 --> 05:31:26,400
work with Kate and sweetie to take you

3130
05:31:35,208 --> 05:31:33,948
all right and I have good gloves no

3131
05:31:37,610 --> 05:31:35,218
change anything they still look brand

3132
05:31:41,330 --> 05:31:39,020
excellent how's it have

3133
05:31:43,610 --> 05:31:41,340
[Music]

3134
05:31:45,410 --> 05:31:43,620
to still dry

3135
05:31:47,150 --> 05:31:45,420
excellent

3136
05:31:51,470 --> 05:31:47,160
all right Harper

3137
05:31:57,708 --> 05:31:54,048
uh Andy what do you got for me

3138
05:32:00,830 --> 05:31:57,718

at this point I got uh 51 and P2 are

3139

05:32:03,530 --> 05:32:00,840

made in wire tied

3140

05:32:04,788 --> 05:32:03,540

is that in your uh in your WBS it looks

3141

05:32:09,650 --> 05:32:04,798

really good

3142

05:32:14,030 --> 05:32:09,660

um we'd like you to cap P3 and P4 and j3

3143

05:32:17,030 --> 05:32:14,040

and j4 so uh cap the cables and also cap

3144

05:32:20,090 --> 05:32:17,040

the connectors on Columbus please and

3145

05:32:21,890 --> 05:32:20,100

then um after that you can retrieve the

3146

05:32:23,448 --> 05:32:21,900

White Cap keeper the black cap keeper

3147

05:32:26,270 --> 05:32:23,458

and the wire tie caddy that's there with

3148

05:32:27,708 --> 05:32:26,280

you and return to coolock bag one and

3149

05:32:32,448 --> 05:32:27,718

then clean up the Gap spanner as well

3150

05:32:32,458 --> 05:32:36,350

okay I copy that and work

3151

05:32:42,650 --> 05:32:39,650

the GPA now ready hey you have a good

3152

05:32:44,690 --> 05:32:42,660

GTA published the iqca to tell us for

3153

05:32:46,788 --> 05:32:44,700

taking you back to your ear as you just

3154

05:32:49,730 --> 05:32:46,798

saw NASA astronaut Victor Glover

3155

05:32:52,730 --> 05:32:49,740

jettison the Coca or Columbus Ka band

3156

05:32:56,150 --> 05:32:52,740

antenna cover which was removed earlier

3157

05:32:58,250 --> 05:32:56,160

by Hopkins and Glover this cover was no

3158

05:33:00,230 --> 05:32:58,260

longer needed and with the kolka cover

3159

05:33:02,448 --> 05:33:00,240

removed European space control

3160

05:33:06,410 --> 05:33:02,458

counterparts and cologne can confirm

3161

05:33:08,570 --> 05:33:06,420

good operation of the Coca heaters

3162

05:33:10,788 --> 05:33:08,580

the teams have determined that the four

3163

05:33:12,650 --> 05:33:10,798

bar De La Mayo connectors are achieving

3164

05:33:14,390 --> 05:33:12,660

a good electrical mate but are

3165

05:33:16,970 --> 05:33:14,400

physically prevented from locking in

3166

05:33:19,250 --> 05:33:16,980

place Hopkins is working to mate two of

3167

05:33:21,048 --> 05:33:19,260

the four bartolomeo power connectors and

3168

05:33:23,208 --> 05:33:21,058

is applying wire ties to prevent them

3169

05:33:24,708 --> 05:33:23,218

from being able to back out he will

3170

05:33:26,570 --> 05:33:24,718

demate and cap the remaining two

3171

05:33:28,610 --> 05:33:26,580

connectors and the final configuration

3172

05:33:37,850 --> 05:33:28,620

will provide zero fault tolerant power

3173

05:33:42,288 --> 05:33:39,890

not a whole lot of reference out here so

3174

05:33:44,750 --> 05:33:42,298

I'll Trust you for now

3175

05:34:07,788 --> 05:33:44,760

can confirm it is good motion all right

3176

05:34:12,350 --> 05:34:10,448

all right that's the esp2 getting closer

3177

05:34:53,868 --> 05:34:12,360

motion continue

3178

05:34:53,878 --> 05:35:36,110

foreign

3179

05:35:41,810 --> 05:35:38,470

all right

3180

05:35:43,670 --> 05:35:41,820

Hopper and we just received confirmation

3181

05:35:45,530 --> 05:35:43,680

that the Coca heater is up and running

3182

05:35:58,310 --> 05:35:45,540

and the heater is now in good shape

3183

05:36:04,070 --> 05:36:01,330

go over sooner

3184

05:36:05,270 --> 05:36:04,080

yeah we saw that and the least is to

3185

05:36:07,430 --> 05:36:05,280

believe that something's wrong with

3186

05:36:08,810 --> 05:36:07,440

those uh connectors since they came from

3187

05:36:10,548 --> 05:36:08,820

they were never capped before either

3188

05:36:17,948 --> 05:36:10,558

they came from the dummy connectors on

3189

05:36:22,250 --> 05:36:20,208

this helmet cam view from NASA

3190

05:36:24,530 --> 05:36:22,260

astronauts Mike Hopkins as he continues

3191

05:36:26,170 --> 05:36:24,540

to apply wire tires to the bartolomeo

3192

05:36:28,368 --> 05:36:26,180

connectors

3193

05:36:37,910 --> 05:36:28,378

so let me know when you're good for the

3194

05:36:37,920 --> 05:37:01,970

okay copy go for acfr Ingress

3195

05:37:07,610 --> 05:37:03,770

and Hopper are those the Caps from the

3196

05:37:11,990 --> 05:37:09,070

are

3197

05:37:13,670 --> 05:37:12,000

okay just want to double check because

3198

05:37:15,048 --> 05:37:13,680

there's a black cap keepers are there as

3199

05:37:19,910 --> 05:37:15,058

well but it should be the white one the

3200

05:37:19,920 --> 05:37:54,350

okay

3201

05:37:54,360 --> 05:38:43,070

motion continue good motion

3202

05:38:43,080 --> 05:38:48,230

and Andy which ones do you recommend for

3203

05:39:31,670 --> 05:38:51,708

for T3 and T4

3204

05:39:35,570 --> 05:39:33,650

and Ike there's your Publishers let me

3205

05:39:41,690 --> 05:39:35,580

know if you need any more yeah complete

3206

05:40:55,788 --> 05:39:43,850

someone breaks on before I get out and

3207

05:41:00,890 --> 05:40:57,288

all right Kate I think you got another

3208

05:41:01,970 --> 05:41:00,900

one for an apfr removal

3209

05:41:05,448 --> 05:41:01,980

all right

3210

05:41:10,368 --> 05:41:08,208

Let It Go just a second we recommend you

3211

05:41:14,330 --> 05:41:10,378

do a safety tether swamp before if you

3212

05:41:17,570 --> 05:41:16,310

my yellow Hook is a little far away so

3213

05:41:20,330 --> 05:41:17,580

I'd like it to be a little closer I'm

3214

05:41:21,890 --> 05:41:20,340

not going to take the apfr out but my

3215

05:41:23,690 --> 05:41:21,900

yellow hood

3216

05:41:26,750 --> 05:41:23,700

be closer to me for the uh okay I

3217

05:41:30,048 --> 05:41:26,760

understand yep no problem understand

3218

05:41:33,590 --> 05:41:30,058

thanks thank you okay and I copy your

3219

05:41:38,930 --> 05:41:36,410

now four hours and 43 minutes into

3220

05:41:41,510 --> 05:41:38,940

today's space walk again the kolka or

3221

05:41:42,948 --> 05:41:41,520

Columbus Ka band antenna heater is up

3222

05:41:53,208 --> 05:41:42,958

and running and the heater is in good

3223

05:41:58,310 --> 05:41:56,030

the Coco will enable an independent high

3224

05:42:01,548 --> 05:41:58,320

bandwidth communication link to European

3225

05:42:01,558 --> 05:42:58,270

foreign

3226

05:43:03,288 --> 05:43:01,250

position on tree for robo is still

3227

05:43:08,030 --> 05:43:03,298

missing the camera data monitored too

3228

05:43:11,830 --> 05:43:10,490

and we're working it down here you're

3229

05:43:17,208 --> 05:43:11,840

going to lose a camera for a second

3230

05:43:22,250 --> 05:43:19,910

hey can I jump in the com real quick for

3231

05:43:23,750 --> 05:43:22,260

Hopper

3232

05:43:44,330 --> 05:43:23,760

sure

3233

05:43:50,510 --> 05:43:46,250

stop motion that's good you see a

3234

05:43:50,520 --> 05:43:58,490

number

3235

05:44:03,948 --> 05:44:00,948

breaks around and then go for ABF all

3236

05:44:03,958 --> 05:44:07,788

hey Hopper uh real quick

3237

05:44:13,310 --> 05:44:11,390

uh if we if you could put a cap on P3

3238

05:44:16,010 --> 05:44:13,320

and P4 we'd appreciate it we know it

3239

05:44:19,010 --> 05:44:16,020

doesn't go on fully uh so if you could

3240

05:44:21,890 --> 05:44:19,020

take a long wire tie and use that to

3241

05:44:25,368 --> 05:44:21,900

secure the cap to a P3 and P4 we'd

3242

05:44:25,378 --> 05:44:31,850

okay we'll do

3243

05:44:37,190 --> 05:44:35,030

okay Andy my green Hook is locked

3244

05:44:39,288 --> 05:44:37,200

my red reel

3245

05:44:42,708 --> 05:44:39,298

it's locked I'm now unlocking the

3246

05:44:48,170 --> 05:44:45,708

just a second all right and helper just

3247

05:44:53,390 --> 05:44:48,180

for awareness the three twists on the

3248

05:45:06,770 --> 05:44:56,628

after that and which one can I use and

3249

05:45:06,780 --> 05:45:14,628

we have no preference

3250

05:45:14,638 --> 05:45:18,288

I think

3251

05:45:23,868 --> 05:45:20,448

all right I'm back with you ready for

3252

05:45:27,890 --> 05:45:25,730

yeah it didn't work my green Hook is

3253

05:45:30,288 --> 05:45:27,900

locked in my red reel uh I've got it

3254

05:45:32,150 --> 05:45:30,298

unlocked now and my red is off of that

3255

05:45:34,310 --> 05:45:32,160

I'm sure I have a good safety chain

3256

05:45:37,490 --> 05:45:34,320

through my

3257

05:45:41,030 --> 05:45:37,500

um Red Hook lowly beating strap my right

3258

05:45:43,010 --> 05:45:41,040

knee extender which is locked okay close

3259

05:45:44,330 --> 05:45:43,020

so if you think that's a good config I'm

3260

05:45:48,410 --> 05:45:44,340

ready to take my yellow Hook off the

3261

05:45:53,750 --> 05:45:51,110

yep that sounds good so you can uh

3262

05:46:03,650 --> 05:45:53,760

pick up your yellow hook and close and

3263

05:46:10,010 --> 05:46:07,910

and Andy yeah we see that Copper got it

3264

05:46:12,708 --> 05:46:10,020
over Center

3265

05:46:14,570 --> 05:46:12,718
anything particular happened or

3266

05:46:17,270 --> 05:46:14,580
any words

3267

05:46:22,910 --> 05:46:17,280
I have no idea

3268

05:46:24,890 --> 05:46:22,920
earlier I had it uh

3269

05:46:26,570 --> 05:46:24,900
in the closed and locked position and

3270

05:46:28,670 --> 05:46:26,580
was just trying to make sure there was

3271

05:46:33,830 --> 05:46:28,680
you know it was the same internal

3272

05:46:37,310 --> 05:46:35,868
and then I pulled it back out

3273

05:47:17,390 --> 05:46:37,320
and that

3274

05:47:20,510 --> 05:47:18,890
all right I need my yellow Hook is

3275

05:47:22,368 --> 05:47:20,520
locked on my green reel

3276

05:47:24,948 --> 05:47:22,378

green reel is unlocked my red wheel's

3277

05:47:27,110 --> 05:47:24,958

unlocked my green Hook is locked in my

3278

05:47:31,850 --> 05:47:27,120

red reel Red Hook low leading strap is

3279

05:47:35,628 --> 05:47:34,430

excellent sounds like a good config so

3280

05:47:39,048 --> 05:47:35,638

uh

3281

05:47:42,110 --> 05:47:39,058

you can remove the apfr or if you need

3282

05:47:45,470 --> 05:47:42,120

to get better access you can uh gc8 into

3283

05:47:45,480 --> 05:48:05,150

remove it from here

3284

05:48:10,970 --> 05:48:08,570

okay Kate I've got the apfr out of

3285

05:48:13,610 --> 05:48:10,980

we forgot to you have a go

3286

05:48:15,830 --> 05:48:13,620

uh to the next publisher okay next

3287

05:48:20,868 --> 05:48:15,840

problem solution

3288

05:48:26,868 --> 05:48:23,990

okay Andy where's this apsr going

3289

05:48:33,110 --> 05:48:26,878

in with five where you took it from with

3290

05:48:40,788 --> 05:48:35,208

since I messed this up once which way

3291

05:48:44,868 --> 05:48:43,310

and I Commission Now motion for the back

3292

05:48:47,448 --> 05:48:44,878

off

3293

05:48:59,628 --> 05:48:47,458

good visual and you have to go

3294

05:49:04,970 --> 05:49:01,850

and I the food plate should be pointing

3295

05:49:04,980 --> 05:49:18,948

you

3296

05:49:25,548 --> 05:49:21,170

hi Andy no joy on the next one I don't

3297

05:49:25,558 --> 05:49:38,810

you'd be a foreign

3298

05:49:42,830 --> 05:49:41,270

hey lke I'm uh really sorry I gave you

3299

05:49:44,448 --> 05:49:42,840

bad info there

3300

05:49:58,128 --> 05:49:44,458

um it needs to be the boot plate needs

3301

05:50:03,350 --> 05:50:00,288

practice for me

3302

05:50:04,970 --> 05:50:03,360

they went back on it

3303

05:50:07,070 --> 05:50:04,980

maybe I don't know if you guys can go

3304

05:50:09,650 --> 05:50:07,080

back and look at the video from

3305

05:50:16,970 --> 05:50:09,660

a few minutes ago and see if

3306

05:50:24,048 --> 05:50:20,090

yeah I'll be motion is complete thanks

3307

05:50:28,430 --> 05:50:26,510

I will be a repeat customer on Reuben's

3308

05:50:33,830 --> 05:50:28,440

Express thank you guys great working

3309

05:50:38,090 --> 05:50:35,810

I'm gonna go take some photos of you now

3310

05:50:54,948 --> 05:50:38,100

huh

3311

05:51:02,810 --> 05:50:57,110

who played pointing Mater

3312

05:51:25,670 --> 05:51:04,530

copy

3313

05:51:25,680 --> 05:51:31,330

foreign

3314

05:51:31,340 --> 05:51:38,270

back to the airlock

3315

05:51:42,410 --> 05:51:40,430

a couple things to clean up right here

3316

05:51:46,788 --> 05:51:42,420

but I will do that

3317

05:51:50,330 --> 05:51:48,530

maybe give me some good picture words

3318

05:51:52,548 --> 05:51:50,340

here uh

3319

05:51:54,410 --> 05:51:52,558

we're leaving vital email as it is right

3320

05:51:55,788 --> 05:51:54,420

now we didn't redo all those clamps or

3321

05:51:57,470 --> 05:51:55,798

anything

3322

05:52:00,350 --> 05:51:57,480

yep that's a firm we're going to leave

3323

05:52:03,890 --> 05:52:00,360

Bartolo Mayo so for you I will ask you

3324

05:52:05,930 --> 05:52:03,900

to clean up the crew lock bag so

3325

05:52:08,510 --> 05:52:05,940

um grab the white and black cap Keepers

3326

05:52:10,368 --> 05:52:08,520

the wire tie caddy Stow that back in the

3327

05:52:12,350 --> 05:52:10,378

crew lock bag retrieve the Gap spanner

3328

05:52:13,730 --> 05:52:12,360

Stow that back in acrylic bag and then

3329

05:52:15,350 --> 05:52:13,740

you can grab the acrylic bag and head

3330

05:52:20,090 --> 05:52:15,360

back to the airlock as well

3331

05:52:22,910 --> 05:52:20,100

then we'll do a P6 H fixtures and um

3332

05:52:30,350 --> 05:52:22,920

at the very end we may come back

3333

05:52:30,360 --> 05:52:55,330

okay I copy

3334

05:53:02,208 --> 05:52:59,868

and Hopper we see excellent job on wire

3335

05:53:04,390 --> 05:53:02,218

tying that cap in the video looks good

3336

05:53:08,270 --> 05:53:04,400

to us

3337

05:53:16,070 --> 05:53:10,788

getting the cat Keepers and heading back

3338

05:53:21,170 --> 05:53:18,170

okay I've got

3339

05:53:22,910 --> 05:53:21,180

the extra adjustables in the mli cover

3340

05:53:40,208 --> 05:53:22,920

I'm gonna work on my safety tether here

3341

05:53:40,218 --> 05:53:44,448

hey I extend by just a second

3342

05:53:44,458 --> 05:53:49,010

remember

3343

05:53:53,690 --> 05:53:51,350

on the port side of esp22 excuse me

3344

05:53:57,288 --> 05:53:53,700

starboard craft dsp2 yeah copy I just

3345

05:53:58,730 --> 05:53:57,298

wanted to uh double check the apfr

3346

05:54:00,288 --> 05:53:58,740

settings

3347

05:54:06,170 --> 05:54:00,298

um

3348

05:54:11,390 --> 05:54:09,010

I didn't change them

3349

05:54:12,730 --> 05:54:11,400

okay if you didn't change them nope

3350

05:54:16,250 --> 05:54:12,740

that's perfect if you didn't change him

3351

05:54:19,970 --> 05:54:18,048

well I changed it to get out of there I

3352

05:54:22,010 --> 05:54:19,980

was kind of Trapped in the corner I've

3353

05:54:23,750 --> 05:54:22,020

yeah I put it back to the way it was for

3354

05:54:32,030 --> 05:54:23,760

Papa foxy

3355

05:54:32,040 --> 05:54:59,330

yep you can head back to the airlock

3356

05:55:02,990 --> 05:55:01,490

all right I'm back at the crew walk or

3357

05:55:07,610 --> 05:55:03,000

the crew lock bag

3358

05:55:07,620 --> 05:55:12,770

Andy I'm back at the crew lock

3359

05:55:17,330 --> 05:55:14,930

B lke you're back at the

3360

05:55:19,070 --> 05:55:17,340

um crew lock just a second Hopper if you

3361

05:55:20,570 --> 05:55:19,080

could just take a look back towards the

3362

05:55:23,150 --> 05:55:20,580

populist connector panel and just have a

3363

05:55:26,390 --> 05:55:23,160

look at the uh the cables if the routing

3364

05:55:28,128 --> 05:55:26,400

looks good if you're comfortable uh with

3365

05:55:31,548 --> 05:55:28,138

everything or if we need to tack

3366

05:55:35,810 --> 05:55:33,948

okay I'm going to go ahead and uh

3367

05:55:39,590 --> 05:55:35,820

uh put the stuff in the crew lock bag

3368

05:55:39,600 --> 05:55:53,750

copy

3369

05:55:53,760 --> 05:56:17,350

yeah I'm at The Crew Love

3370

05:56:23,208 --> 05:56:19,910

and like

3371

05:56:25,250 --> 05:56:23,218

can take a one or two minute break while

3372

05:56:59,750 --> 05:56:25,260

we just get some words up to you stand

3373

05:56:59,760 --> 05:57:16,090

foreign

3374

05:57:24,190 --> 05:57:18,890

you can open the thermal cover and then

3375

05:57:26,208 --> 05:57:24,200

you can Stow the mli and the small small

3376

05:57:28,430 --> 05:57:26,218

adjustable and the large small

3377

05:57:30,048 --> 05:57:28,440

adjustable in the crew lock and then you

3378

05:57:32,448 --> 05:57:30,058

can retrieve crew lock bag number two

3379

05:57:34,910 --> 05:57:32,458

and crew lock bag number three

3380

05:57:43,310 --> 05:57:34,920

you can tip so to number two outside it

3381

05:57:50,570 --> 05:57:46,250

I'll be there Clown I'll work on the mli

3382

05:57:53,090 --> 05:57:50,580

and uh promo code is open

3383

05:57:55,788 --> 05:57:53,100

copy

3384

05:57:58,368 --> 05:57:55,798

now nearly five hours into today's space

3385

05:57:59,590 --> 05:57:58,378

walk which began at 5 28 a.m Central

3386

05:58:02,690 --> 05:57:59,600

Time

3387

05:58:05,030 --> 05:58:02,700

the crew first took out the Coca or

3388

05:58:06,350 --> 05:58:05,040

Columbus Ka band antenna from the crew

3389

05:58:07,670 --> 05:58:06,360

lock and brought it with them to the

3390

05:58:09,708 --> 05:58:07,680

Columbus module

3391

05:58:11,868 --> 05:58:09,718

there they removed bolts on the Columbus

3392

05:58:13,250 --> 05:58:11,878

panels in order to install install the

3393

05:58:15,650 --> 05:58:13,260

kolka

3394

05:58:18,530 --> 05:58:15,660

and then coca was installed and secured

3395

05:58:20,810 --> 05:58:18,540

to the Columbus module

3396

05:58:23,330 --> 05:58:20,820

following this NASA astronaut Victor

3397

05:58:24,708 --> 05:58:23,340

Glover routed kolka cables and the duo

3398

05:58:28,070 --> 05:58:24,718

headed to the bartolomeo science

3399

05:58:32,510 --> 05:58:30,170

NASA astronaut Mike Hopkins completed

3400

05:58:34,430 --> 05:58:32,520

bartolomeo cable mating

3401

05:58:36,230 --> 05:58:34,440

but was unable to fully lock down the

3402

05:58:37,368 --> 05:58:36,240

cables and so his wire tied them in

3403

05:58:40,190 --> 05:58:37,378

place

3404

05:58:41,448 --> 05:58:40,200

he's now performing cleanup of the area

3405

05:58:44,150 --> 05:58:41,458

so

3406

05:58:47,150 --> 05:58:44,160

the integral is attached to the v-ring

3407

05:58:49,368 --> 05:58:47,160

one end is attached Hopkins also removed

3408

05:58:52,430 --> 05:58:49,378

clamps holding cabling in place on the

3409

05:58:54,048 --> 05:58:52,440

co on the bar of the Mayo platform and

3410

05:58:58,250 --> 05:58:54,058

removed another set of cabling and

3411

05:59:02,150 --> 05:59:00,470

crew then removed a cover off the Coca

3412

05:59:04,010 --> 05:59:02,160

which was installed to protect the

3413

05:59:05,930 --> 05:59:04,020

antenna during installation

3414

05:59:08,390 --> 05:59:05,940

and because the cut cover was no longer

3415

05:59:10,310 --> 05:59:08,400

needed it was jettisoned

3416

05:59:12,770 --> 05:59:10,320

Glover then translated back to the

3417

05:59:14,270 --> 05:59:12,780

airlock and is now configuring bags that

3418

05:59:16,970 --> 05:59:14,280

will be needed for the next part of this

3419

05:59:18,170 --> 05:59:16,980

spacewalk which will occur out at the P6

3420

05:59:20,510 --> 05:59:18,180

truss

3421

05:59:22,490 --> 05:59:20,520

the final task of the day will be to

3422

05:59:25,250 --> 05:59:22,500

remove a h fixture which is a robotic

3423

05:59:27,650 --> 05:59:25,260

interface that is no longer needed the

3424

05:59:29,330 --> 05:59:27,660

crew will remove full four bolts and

3425

05:59:30,530 --> 05:59:29,340

work together to remove the plate from

3426

05:59:32,690 --> 05:59:30,540

the structure

3427

05:59:34,730 --> 05:59:32,700

this will open up for attach points that

3428

05:59:38,690 --> 05:59:34,740

will be used for future solar array

3429

05:59:43,548 --> 05:59:40,910

and we did receive good words that the

3430

05:59:45,850 --> 05:59:43,558

Coca heater is now up and running and

3431

05:59:52,070 --> 05:59:45,860

receiving data

3432

06:00:01,190 --> 05:59:55,250

Governor Brett attached to a small trash

3433

06:00:01,200 --> 06:00:11,628

the red attached to a white cat keeper

3434

06:00:11,638 --> 06:00:15,110

has

3435

06:00:15,120 --> 06:00:20,810

two of the plugs

3436

06:00:20,820 --> 06:00:25,430

and one two caps

3437

06:00:30,590 --> 06:00:28,010

and maybe that's attached also to an

3438

06:00:35,390 --> 06:00:32,868

and that adjustable has the wire tie

3439

06:00:40,788 --> 06:00:37,788

I mean it's also attached to the Wildcat

3440

06:00:40,798 --> 06:00:45,830

that has one two three four

3441

06:00:56,030 --> 06:00:47,990

it has four

3442

06:01:01,368 --> 06:00:58,010

outside of the bag and two adjustable

3443

06:01:15,250 --> 06:01:05,030

and I also have one large small rep

3444

06:01:20,930 --> 06:01:18,170

yep I think that everything sounds like

3445

06:01:23,810 --> 06:01:20,940

a good inventory so just the Gap spanner

3446

06:01:27,530 --> 06:01:25,670

the upstairs this thing and the camera

3447

06:01:28,850 --> 06:01:27,540

is sitting on a handrail and I'll put

3448

06:01:31,430 --> 06:01:28,860

that on me

3449

06:01:41,150 --> 06:01:31,440

because I'll need a phrase fixture

3450

06:02:51,890 --> 06:01:43,128

all right now I got to put all this back

3451
06:02:51,900 --> 06:02:59,930
foreign

3452
06:02:59,940 --> 06:03:29,390
um

3453
06:03:29,400 --> 06:03:42,900
foreign

3454
06:04:02,830 --> 06:03:55,140
[Applause]

3455
06:04:07,990 --> 06:04:05,570
as a reminder you can submit your

3456
06:04:10,610 --> 06:04:08,000
questions to us today using the hashtag

3457
06:04:14,868 --> 06:04:10,620
asknasa and we'll be answering them live

3458
06:04:14,878 --> 06:04:18,770
ah

3459
06:05:46,910 --> 06:04:47,530
a

3460
06:05:54,708 --> 06:05:46,920
wish

3461
06:05:59,628 --> 06:05:57,350
I would have thought that uh

3462
06:06:03,410 --> 06:05:59,638
their Rubens would have had snacks in

3463
06:06:07,610 --> 06:06:06,048

just this kind of an event

3464

06:06:10,250 --> 06:06:07,620

we thought that might be mean to show

3465

06:06:10,260 --> 06:06:13,670

are

3466

06:06:13,680 --> 06:06:20,330

we have snacks for you later don't worry

3467

06:06:20,340 --> 06:06:28,490

does Reagan have bacon up here oh man

3468

06:06:44,770 --> 06:06:30,650

that one we've got to figure out

3469

06:06:49,430 --> 06:06:47,570

you heard the crew joking about wanting

3470

06:06:51,830 --> 06:06:49,440

bacon and snacks during this spacewalk

3471

06:06:53,628 --> 06:06:51,840

after nearly five hours in a spacewalk

3472

06:06:55,970 --> 06:06:53,638

of grueling work you would be hungry

3473

06:06:57,948 --> 06:06:55,980

while the crew does not have food inside

3474

06:06:59,810 --> 06:06:57,958

this spacesuit they do have an in-suit

3475

06:07:02,090 --> 06:06:59,820

drink bag which is a plastic water

3476

06:07:04,430 --> 06:07:02,100

filled pouch which attaches to the

3477

06:07:05,930 --> 06:07:04,440

inside of the suit using velcro which

3478

06:07:09,048 --> 06:07:05,940

they are able to bite down and drink

3479

06:07:16,310 --> 06:07:12,410

okay I expect pre-lock bag I'm gonna put

3480

06:07:19,070 --> 06:07:18,288

coming out of the crew lock now showing

3481

06:08:10,670 --> 06:07:19,080

the

3482

06:08:10,680 --> 06:08:13,760

all right

3483

06:08:13,770 --> 06:08:22,970

[Applause]

3484

06:08:27,708 --> 06:08:26,030

station Houston on three for uh camera

3485

06:08:29,750 --> 06:08:27,718

routing uh we'd like if you guys are

3486

06:08:31,850 --> 06:08:29,760

okay with it to take the cameras and uh

3487

06:08:35,090 --> 06:08:31,860

use them to take a look at the Fort work

3488

06:08:44,448 --> 06:08:38,810

absolutely cameras are all yours

3489

06:08:47,150 --> 06:08:45,708

I don't know if you guys were

3490

06:08:49,430 --> 06:08:47,160

downlinking the interlock camera but

3491

06:08:53,330 --> 06:08:49,440

there was a cool shot of Ike coming out

3492

06:09:23,150 --> 06:08:53,340

so I've moved the airlock camera to

3493

06:09:28,690 --> 06:09:25,670

I'm Andy crew lock bag one now includes

3494

06:09:31,548 --> 06:09:28,700

a gap spanner

3495

06:09:33,770 --> 06:09:31,558

excellent and I think you said the

3496

06:09:35,090 --> 06:09:33,780

camera was on a handrail so once you

3497

06:09:38,628 --> 06:09:35,100

grab that then you can grab the crew

3498

06:09:42,410 --> 06:09:40,250

I'm gonna go turn around take a look at

3499

06:09:48,048 --> 06:09:44,570

about the configure the cables real

3500

06:09:49,730 --> 06:09:48,058

quick right yep that's right yeah as a

3501

06:09:52,910 --> 06:09:49,740

reminder we are taking your questions

3502

06:09:54,708 --> 06:09:52,920

today using the hashtag asknasa we did

3503

06:09:56,690 --> 06:09:54,718

have one come in where someone wanted to

3504

06:09:58,910 --> 06:09:56,700

know how the astronauts carry the tools

3505

06:10:00,770 --> 06:09:58,920

they need during the spacewalk you

3506

06:10:02,810 --> 06:10:00,780

actually just saw a great view of the

3507

06:10:04,490 --> 06:10:02,820

mini workstation which is kind of like a

3508

06:10:07,010 --> 06:10:04,500

backpack that the crew members use in

3509

06:10:09,230 --> 06:10:07,020

order to carry all their supplies it has

3510

06:10:10,730 --> 06:10:09,240

the tethers and all the other necessary

3511

06:10:11,868 --> 06:10:10,740

equipment that they need during this

3512

06:10:14,030 --> 06:10:11,878

spacewalk

3513

06:10:15,288 --> 06:10:14,040

your camera is now attached to my swing

3514

06:10:41,350 --> 06:10:15,298

arm

3515

06:10:47,270 --> 06:10:43,368

hey lke

3516

06:10:50,390 --> 06:10:47,280

um we wanted to give you an offer of uh

3517

06:10:52,610 --> 06:10:50,400

doing the airlock hatch pin

3518

06:10:54,890 --> 06:10:52,620

pipin r r activity which is one of the

3519

06:10:57,110 --> 06:10:54,900

get aheads while you're waiting for a

3520

06:10:59,090 --> 06:10:57,120

hopper to get back and just wanted to

3521

06:11:03,250 --> 06:10:59,100

know what you think about starting on

3522

06:11:03,260 --> 06:11:07,490

let me know what I need to do

3523

06:11:11,628 --> 06:11:09,590

that's true love back four right

3524

06:11:21,610 --> 06:11:11,638

that's the firm yep so you can go ahead

3525

06:11:25,150 --> 06:11:23,750

two and three attempts filled on the

3526

06:11:31,430 --> 06:11:25,160

circular hand roll

3527

06:11:36,288 --> 06:11:33,890

okay Andy the you know the only thing I

3528

06:11:38,810 --> 06:11:36,298

could be doing here is

3529

06:11:41,030 --> 06:11:38,820

you know potentially uh just using that

3530

06:11:43,850 --> 06:11:41,040

long wire tie

3531

06:11:45,770 --> 06:11:43,860

and uh you know kind of finishing up the

3532

06:11:47,270 --> 06:11:45,780

cleanup here on

3533

06:11:49,610 --> 06:11:47,280

the wire outside but if you guys aren't

3534

06:12:01,670 --> 06:11:49,620

worried about the big loops

3535

06:12:01,680 --> 06:12:10,448

complete one Twist on it and then

3536

06:12:16,850 --> 06:12:12,530

when uh

3537

06:12:19,970 --> 06:12:16,860

yeah Hopper the the main worry is from

3538

06:12:22,610 --> 06:12:19,980

Robo so if we could get the cables as

3539

06:12:24,948 --> 06:12:22,620

flush to Columbus uh without any kind of

3540

06:12:27,770 --> 06:12:24,958

Loops sticking up uh that'd probably be

3541

06:12:27,780 --> 06:12:50,270

okay

3542

06:12:50,280 --> 06:13:10,628

foreign

3543

06:13:15,288 --> 06:13:13,430

NASA astronaut Mike Hopkins translates

3544

06:13:17,150 --> 06:13:15,298

to the airlock NASA astronaut Victor

3545

06:13:20,270 --> 06:13:17,160

Glover is going to work on a get ahead

3546

06:13:22,250 --> 06:13:20,280

task involving an airlock hatch pit pin

3547

06:13:24,830 --> 06:13:22,260

r r essentially what he's going to do

3548

06:13:27,110 --> 06:13:24,840

during this procedure is remove a broken

3549

06:13:28,788 --> 06:13:27,120

pin in the airlock and replace it with a

3550

06:13:30,730 --> 06:13:28,798

new functioning pin

3551

06:13:34,190 --> 06:13:30,740

the new pip pin

3552

06:13:35,690 --> 06:13:34,200

the Eva scissors and then a trash bag

3553

06:13:39,890 --> 06:13:35,700

which I think you have on your mini

3554

06:13:44,090 --> 06:13:41,150

correct

3555

06:13:45,770 --> 06:13:44,100

and for the new pin and the Eva scissors

3556

06:13:49,788 --> 06:13:45,780

should be on one side of the divider in

3557

06:13:53,510 --> 06:13:51,410

yeah I see them and they are on the same

3558

06:14:03,890 --> 06:13:53,520

side of the divider should I do this

3559

06:14:08,090 --> 06:14:06,230

yeah I get sort of half in half out

3560

06:14:09,948 --> 06:14:08,100

whatever you think is the best position

3561

06:14:12,230 --> 06:14:09,958

to give you access so the first step

3562

06:14:22,788 --> 06:14:12,240

would be to remove the old

3563

06:14:22,798 --> 06:15:34,250

happy

3564

06:15:38,390 --> 06:15:36,830

okay Andy I'm down near the

3565

06:16:00,650 --> 06:15:38,400

big things

3566

06:16:36,610 --> 06:16:03,110

standby for a talk on

3567

06:16:41,510 --> 06:16:39,650

and we just received word that the two

3568

06:16:43,490 --> 06:16:41,520

cables that have been connected to the

3569

06:16:46,368 --> 06:16:43,500

bartolomeo external research science

3570

06:16:49,190 --> 06:16:46,378

platform appear to be providing good

3571

06:16:51,048 --> 06:16:49,200

electrical continuity and power as the

3572

06:17:04,128 --> 06:16:51,058

crew presses ahead toward removing the H

3573

06:17:04,138 --> 06:17:32,510

ah

3574

06:17:32,520 --> 06:18:04,990

foreign

3575

06:18:10,070 --> 06:18:07,730

this view from NASA astronaut Victor

3576

06:18:13,070 --> 06:18:10,080

Glover's helmet cam as he works on a get

3577

06:18:15,770 --> 06:18:13,080

ahead task in order to remove and

3578

06:18:34,850 --> 06:18:15,780

replace a broken pip pin inside the

3579

06:18:34,860 --> 06:18:39,250

I only got one more Loop

3580

06:18:39,260 --> 06:19:17,208

copy Hopper

3581

06:19:17,218 --> 06:19:27,850

foreign

3582

06:19:27,860 --> 06:19:34,730

should be on the forward hinge

3583

06:19:40,030 --> 06:19:36,770

and it should be pointing aft okay hold

3584

06:20:27,948 --> 06:19:42,948

let the bag go back into the

3585

06:20:27,958 --> 06:20:38,890

foreign

3586

06:20:42,590 --> 06:20:40,968

we have an excellent camera view that

3587

06:20:45,410 --> 06:20:42,600

looks really good we're happy with those

3588

06:20:49,850 --> 06:20:47,628

okay I got uh

3589

06:20:52,208 --> 06:20:49,860

more quick wire try here and I'll be

3590

06:20:54,708 --> 06:20:52,218

moving on my way

3591

06:20:55,610 --> 06:20:54,718

it seems quite a bit longer than the

3592

06:20:58,788 --> 06:20:55,620

others

3593

06:21:01,490 --> 06:20:58,798

the one on top I don't know if that's

3594

06:21:07,968 --> 06:21:01,500

the design or not but

3595

06:21:07,978 --> 06:21:24,590

quite a bit extra loops

3596

06:21:29,390 --> 06:21:26,390

okay so it's gonna have one will you be

3597

06:21:40,128 --> 06:21:31,850

it's kind of thicken up

3598

06:21:45,170 --> 06:21:42,468

that looks um excellent Harper we're

3599

06:21:47,030 --> 06:21:45,180

happy with that so that Loop is uh where

3600

06:21:55,250 --> 06:21:47,040

the other connectors are so we don't

3601
06:21:55,260 --> 06:21:58,310
okay Andy I'm ready

3602
06:21:58,320 --> 06:22:05,930
okay so it should be the forward hinge

3603
06:22:05,940 --> 06:22:09,590
four hinge

3604
06:22:14,570 --> 06:22:12,350
and then there should be a pit pin

3605
06:22:20,090 --> 06:22:14,580
pointing aft on that forward hinge so

3606
06:22:26,628 --> 06:22:21,590
and it should have a loose Lane you're

3607
06:22:31,548 --> 06:22:28,730
yeah you just grabbed it with your right

3608
06:22:35,990 --> 06:22:32,690
so

3609
06:22:37,548 --> 06:22:36,000
it's yeah that one is uh

3610
06:22:45,250 --> 06:22:37,558
the one I believe you were talking about

3611
06:22:51,230 --> 06:22:48,770
the line your looks normal so we uh we

3612
06:23:05,048 --> 06:22:51,240
think the detent is broken so does it

3613
06:23:14,150 --> 06:23:07,368

and like you can try to pull on the pit

3614

06:23:18,170 --> 06:23:16,850

until if I'm pulling this part that's

3615

06:23:20,990 --> 06:23:18,180

supposed to make you release so that's

3616

06:23:22,730 --> 06:23:21,000

why I was pulling the lanyard

3617

06:23:25,070 --> 06:23:22,740

um I don't think it just comes out but

3618

06:23:30,650 --> 06:23:25,080

when I pull the pit Bend part supposed

3619

06:23:36,010 --> 06:23:32,150

of the eighth of an inch before it

3620

06:23:44,990 --> 06:23:39,048

yeah I understand yeah

3621

06:23:45,000 --> 06:23:59,350

I think so

3622

06:24:03,830 --> 06:24:02,270

hey lke will you give us an inspection

3623

06:24:05,448 --> 06:24:03,840

of the other three Pippins so there

3624

06:24:07,368 --> 06:24:05,458

should be four in total so just kind of

3625

06:24:12,468 --> 06:24:07,378

pull on all all four of them just to see

3626
06:24:12,478 --> 06:24:18,830
all right

3627
06:24:18,840 --> 06:24:36,890
work

3628
06:24:41,930 --> 06:24:39,830
you asked hinge ask him

3629
06:24:44,208 --> 06:24:41,940
lanyard is we're kind of wrapped around

3630
06:24:46,788 --> 06:24:44,218
the hinge so that one I'm not able to

3631
06:24:49,070 --> 06:24:46,798
do much with pain just kind of holding

3632
06:24:51,410 --> 06:24:49,080
it in place

3633
06:24:53,090 --> 06:24:51,420
the pit portion of it seems to still

3634
06:24:54,110 --> 06:24:53,100
have some spring to it and I don't know

3635
06:24:56,690 --> 06:24:54,120
if it's

3636
06:25:00,708 --> 06:24:56,700
though

3637
06:25:27,110 --> 06:25:00,718
the Landers holding it down so tightly

3638
06:25:32,170 --> 06:25:29,208

for working on the Ford end seems fine

3639

06:26:01,330 --> 06:25:35,150

copy sounds like we might have four good

3640

06:26:08,708 --> 06:26:05,208

hey lke could you could you go back to

3641

06:26:11,990 --> 06:26:08,718

the first pit pin so the forward

3642

06:26:13,788 --> 06:26:12,000

hinge uh pinpointing afts the one that

3643

06:26:16,430 --> 06:26:13,798

we checked initially and just try to

3644

06:26:18,288 --> 06:26:16,440

pull on the pin itself not the lanyard

3645

06:26:22,670 --> 06:26:18,298

we just want to double check because

3646

06:26:27,830 --> 06:26:25,250

okay I just wanna so

3647

06:26:29,750 --> 06:26:27,840

if you can see I'll make sure to get it

3648

06:26:31,070 --> 06:26:29,760

inside this but get the tit pin so

3649

06:26:32,390 --> 06:26:31,080

there's a part of it that you pull to

3650

06:26:34,190 --> 06:26:32,400

make it come out

3651

06:26:35,810 --> 06:26:34,200

and I'm trying to not pull on that part

3652

06:26:37,250 --> 06:26:35,820

to make sure that it's staying in when

3653

06:26:39,230 --> 06:26:37,260

it's supposed to

3654

06:26:40,788 --> 06:26:39,240

maybe that's not you don't want me to

3655

06:26:42,170 --> 06:26:40,798

just release it not only like a 15

3656

06:26:44,030 --> 06:26:42,180

you're supposed to

3657

06:26:46,250 --> 06:26:44,040

is that correct yeah that's right

3658

06:26:47,208 --> 06:26:46,260

exactly we don't want you to depress the

3659

06:26:49,730 --> 06:26:47,218

little

3660

06:26:53,288 --> 06:26:49,740

plunger on top you know we just want to

3661

06:26:53,298 --> 06:26:58,730

disengaging the top the detent

3662

06:27:03,230 --> 06:27:01,250

okay well the point is like the whole

3663

06:27:04,788 --> 06:27:03,240

top portion so

3664

06:27:06,770 --> 06:27:04,798

it's uh

3665

06:27:08,690 --> 06:27:06,780

it's really easy to grab the plunger

3666

06:27:09,948 --> 06:27:08,700

part okay I don't know if you can see it

3667

06:27:12,530 --> 06:27:09,958

in my video

3668

06:27:15,288 --> 06:27:12,540

so this entire part

3669

06:27:17,570 --> 06:27:15,298

the cross portion moves and if I pull it

3670

06:27:19,070 --> 06:27:17,580

out it comes right out that's the pit

3671

06:27:22,010 --> 06:27:19,080

tipping part

3672

06:27:23,330 --> 06:27:22,020

so I've been pulling on the cable for

3673

06:27:25,968 --> 06:27:23,340

lanyard

3674

06:27:28,310 --> 06:27:25,978

but I'm not pulling on the PIN

3675

06:27:30,110 --> 06:27:28,320

I'm talking pretty good guys I'm I am

3676

06:27:33,350 --> 06:27:30,120

pulling hard on this thing if it was

3677

06:27:37,610 --> 06:27:35,690

if I pull on the pick portion it will

3678

06:27:43,548 --> 06:27:37,620

come out that's what I would expect to

3679

06:27:57,730 --> 06:27:46,430

yeah we we see and we understand just a

3680

06:28:03,530 --> 06:28:00,650

now nearly five and a half hours into

3681

06:28:05,030 --> 06:28:03,540

today's space walk which began at 5 28

3682

06:28:07,070 --> 06:28:05,040

a.m Central Time

3683

06:28:08,750 --> 06:28:07,080

again we did receive word that the two

3684

06:28:10,968 --> 06:28:08,760

cables that been have been connected to

3685

06:28:13,788 --> 06:28:10,978

bartolomeo appear to be providing good

3686

06:28:16,070 --> 06:28:13,798

electrical continuity and power however

3687

06:28:18,650 --> 06:28:16,080

the third cable was not yet able to be

3688

06:28:21,170 --> 06:28:18,660

connected and is secured via wire tie

3689

06:28:23,330 --> 06:28:21,180

and temporarily capped off because of

3690

06:28:25,730 --> 06:28:23,340

this bartolomeo is not yet functional

3691

06:28:27,850 --> 06:28:25,740

Glover continues to work a get ahead

3692

06:28:30,830 --> 06:28:27,860

task to replace a swap out of a broken

3693

06:28:32,448 --> 06:28:30,840

pin in the airlock following this the

3694

06:28:42,048 --> 06:28:32,458

crew will press ahead toward removing

3695

06:29:12,968 --> 06:28:43,570

um

3696

06:29:18,048 --> 06:29:15,650

all right Ike thanks for standing by so

3697

06:29:20,270 --> 06:29:18,058

we uh believe based on your reporting

3698

06:29:22,788 --> 06:29:20,280

that we have a good pit pin so no need

3699

06:29:24,590 --> 06:29:22,798

to change out a good pit bin so you can

3700

06:29:26,270 --> 06:29:24,600

uh Stow everything back in crew lock

3701
06:29:28,810 --> 06:29:26,280
back four and still cool lock back four

3702
06:29:30,890 --> 06:29:28,820
back in the airlock

3703
06:29:36,530 --> 06:29:30,900
okay and work

3704
06:29:36,540 --> 06:29:41,410
Sensations

3705
06:29:45,708 --> 06:29:43,788
you guys get the view from this side as

3706
06:29:50,030 --> 06:29:45,718
well

3707
06:29:50,040 --> 06:30:40,190
I think

3708
06:30:40,200 --> 06:31:03,288
foreign

3709
06:31:11,270 --> 06:31:07,730
all right Andy about four uh the Eva

3710
06:31:15,410 --> 06:31:11,280
filter in uh spare 15 back inside and

3711
06:31:19,548 --> 06:31:17,510
so next for you you can attach your

3712
06:31:22,368 --> 06:31:19,558
waste tether to the airlock waste each

3713
06:31:25,010 --> 06:31:22,378

other and then make sure all hooks are

3714

06:31:31,310 --> 06:31:25,020

closed and locked and we'll get ready to

3715

06:31:31,320 --> 06:31:55,548

instead of going down inside the airlock

3716

06:31:55,558 --> 06:31:59,628

all right come out the last step

3717

06:31:59,638 --> 06:32:50,030

good job

3718

06:32:54,530 --> 06:32:52,548

of Petersburg

3719

06:32:56,990 --> 06:32:54,540

puppy

3720

06:33:06,010 --> 06:32:57,000

working on putting my waist tether

3721

06:33:10,430 --> 06:33:08,868

next up for our space walking Duo

3722

06:33:13,128 --> 06:33:10,440

they'll head out to the port most

3723

06:33:14,868 --> 06:33:13,138

section of the Space Station's truss

3724

06:33:17,150 --> 06:33:14,878

they'll head out to P6 in order to

3725

06:33:19,490 --> 06:33:17,160

remove an H fixture which is not needed

3726

06:33:21,770 --> 06:33:19,500

on the solar arrays

3727

06:33:24,110 --> 06:33:21,780

the H fixture is a robotic interface

3728

06:33:26,570 --> 06:33:24,120

that again is no longer needed this

3729

06:33:28,368 --> 06:33:26,580

plate is secured by four bolts

3730

06:33:29,750 --> 06:33:28,378

and will be released by both crew

3731

06:33:31,730 --> 06:33:29,760

members who will then continue working

3732

06:33:34,310 --> 06:33:31,740

together to remove the plate from the

3733

06:33:35,990 --> 06:33:34,320

structure this will open up four attach

3734

06:33:39,590 --> 06:33:36,000

points that will be used for future

3735

06:33:41,510 --> 06:33:39,600

solar array power system upgrades

3736

06:33:43,548 --> 06:33:41,520

I have two big hooks to get a lot

3737

06:33:45,230 --> 06:33:43,558

they'll close black on black with

3738

06:33:47,270 --> 06:33:45,240

Crystal test

3739

06:33:50,930 --> 06:33:47,280

and that small Hook from that we saw

3740

06:33:50,940 --> 06:33:59,030

is wrapped around my PGT

3741

06:34:04,250 --> 06:34:01,070

and the small Hook is a lot to my right

3742

06:34:09,830 --> 06:34:07,250

all right that sounds like a good uh

3743

06:34:12,110 --> 06:34:09,840

config and I see Hoppers back at the

3744

06:34:14,330 --> 06:34:12,120

airlock so Hopper and you can set up the

3745

06:34:16,368 --> 06:34:14,340

slingshot uh well first of all you can

3746

06:34:18,048 --> 06:34:16,378

attempt so crew lock bag number one on

3747

06:34:20,570 --> 06:34:18,058

the airlock search for a handrail or you

3748

06:34:23,510 --> 06:34:20,580

can hand it into hike and he can stow it

3749

06:34:23,520 --> 06:34:30,410

I'm gonna go with option D

3750

06:34:30,420 --> 06:34:36,048

ude right

3751
06:34:36,058 --> 06:34:53,510
foreign

3752
06:34:53,520 --> 06:35:08,628
okay

3753
06:35:14,628 --> 06:35:11,750
and if you want to attach oh no you've

3754
06:35:14,638 --> 06:35:19,330
that much

3755
06:35:26,510 --> 06:35:22,070
yeah so for you Hopper you can set up

3756
06:35:29,030 --> 06:35:26,520
the slingshot so I seem sounds like he's

3757
06:35:30,190 --> 06:35:29,040
connected to the airlock waste tether so

3758
06:35:34,070 --> 06:35:30,200
you can

3759
06:35:36,048 --> 06:35:34,080
remove Ike's anchor hook safety tether

3760
06:35:41,090 --> 06:35:36,058
anchor hook and attach it to your red

3761
06:35:41,100 --> 06:36:00,830
all right and work

3762
06:36:05,868 --> 06:36:03,890
okay crew lock one bag I threw up one

3763
06:36:08,330 --> 06:36:05,878

two guys

3764

06:36:14,390 --> 06:36:08,340

and it's connected to your lock ready

3765

06:36:21,890 --> 06:36:15,350

okay

3766

06:36:25,128 --> 06:36:21,900

the first step in preparing to remove

3767

06:36:28,190 --> 06:36:25,138

the H fixture from the P6 Truss

3768

06:36:31,128 --> 06:36:28,200

involves a slingshot setup

3769

06:36:33,530 --> 06:36:31,138

this requires the astronauts to combine

3770

06:36:35,030 --> 06:36:33,540

tethers because they're so far out on

3771

06:36:36,708 --> 06:36:35,040

the space station

3772

06:36:38,868 --> 06:36:36,718

this technique was actually developed

3773

06:36:40,010 --> 06:36:38,878

when the shuttle was being built when

3774

06:36:42,288 --> 06:36:40,020

the shuttle was building the

3775

06:36:44,090 --> 06:36:42,298

International Space Station because the

3776

06:36:47,090 --> 06:36:44,100

space station got to a point that it was

3777

06:36:49,968 --> 06:36:47,100

getting so large they needed quite a bit

3778

06:36:51,350 --> 06:36:49,978

longer of a distance from the airlock in

3779

06:36:52,788 --> 06:36:51,360

your anchor hook

3780

06:37:12,288 --> 06:36:52,798

got it

3781

06:37:16,788 --> 06:37:14,810

okay it is now attached to my Red Hook

3782

06:37:17,990 --> 06:37:16,798

built built the starter lock black on

3783

06:37:20,690 --> 06:37:18,000

black

3784

06:37:23,570 --> 06:37:20,700

and a good pull test

3785

06:37:24,890 --> 06:37:23,580

copy you can pick up your own safety

3786

06:37:29,390 --> 06:37:24,900

teller anchor hook and sew it on your

3787

06:37:29,400 --> 06:37:34,250

I think

3788

06:37:38,270 --> 06:37:36,288

before I do that I'm going to go ahead

3789

06:37:41,510 --> 06:37:38,280

and get uh

3790

06:37:43,310 --> 06:37:41,520

my pre-lock bag that's all right

3791

06:37:47,750 --> 06:37:43,320

yep so you're picking up crew lock bag

3792

06:37:47,760 --> 06:37:53,750

I believe that's the one on your side

3793

06:38:01,548 --> 06:37:56,448

yes it's got that

3794

06:38:06,230 --> 06:38:04,490

excuse me I can yeah you see my paper

3795

06:38:09,170 --> 06:38:06,240

handles

3796

06:38:10,968 --> 06:38:09,180

I see uh your bus safer handle is down

3797

06:38:13,548 --> 06:38:10,978

you rotate

3798

06:38:16,548 --> 06:38:13,558

and the right safer handle is down hand

3799

06:38:18,890 --> 06:38:16,558

explorers and

3800

06:38:21,890 --> 06:38:18,900

crew continuing to work together to set

3801

06:38:29,510 --> 06:38:21,900

up the P6 slingshot setup for the p6h

3802

06:38:34,010 --> 06:38:31,670

a short time ago NASA astronaut Victor

3803

06:38:36,410 --> 06:38:34,020

Glover was working on a get ahead task

3804

06:38:37,690 --> 06:38:36,420

in the airlock to remove and replace a

3805

06:38:39,890 --> 06:38:37,700

pit pin

3806

06:38:42,530 --> 06:38:39,900

however he did not believe that it was

3807

06:38:44,750 --> 06:38:42,540

broken and after the ground consulted

3808

06:38:46,968 --> 06:38:44,760

with him they agreed so teams have now

3809

06:38:57,530 --> 06:38:46,978

decided not to perform the PIP pin as it

3810

06:39:05,750 --> 06:39:00,770

you can leave the large small if you

3811

06:39:05,760 --> 06:39:15,048

I'm leaving it behind this

3812

06:39:23,170 --> 06:39:17,810

there's a large small on the airlock the

3813

06:39:37,628 --> 06:39:25,250

we just need to be able to close the

3814

06:39:42,770 --> 06:39:40,430

we're in a brief expected Handover

3815

06:39:44,990 --> 06:39:42,780

between satellites and will be regain

3816

06:39:46,368 --> 06:39:45,000

visuals and Communications with the crew

3817

06:39:48,830 --> 06:39:46,378

shortly

3818

06:39:50,810 --> 06:39:48,840

as a reminder based on updated guidance

3819

06:39:53,030 --> 06:39:50,820

teams in Mission Control will now wear

3820

06:39:55,368 --> 06:39:53,040

masks at all times while on console and

3821

06:39:58,070 --> 06:39:55,378

supporting Mission operations except for

3822

06:40:13,250 --> 06:39:58,080

brief periods of time to eat or drink as

3823

06:40:20,570 --> 06:40:17,048

hey I am ready to go

3824

06:40:22,968 --> 06:40:20,580

all right you can translate to P1 model

3825

06:40:28,548 --> 06:40:22,978

marker

3826

06:40:28,558 --> 06:40:37,548

uh my ticket I am not getting the apfr

3827

06:40:40,490 --> 06:40:39,590

no we're going to skip that so you can

3828

06:40:41,930 --> 06:40:40,500

uh

3829

06:40:43,128 --> 06:40:41,940

as long as you've got crew lock bag

3830

06:40:45,948 --> 06:40:43,138

number two with you then you can

3831

06:40:51,890 --> 06:40:45,958

translate out to mile marker 9150 you're

3832

06:40:51,900 --> 06:40:59,830

happy

3833

06:41:05,150 --> 06:41:02,510

and lke um if you haven't done so

3834

06:41:11,030 --> 06:41:05,160

already you can put clue lock bag number

3835

06:41:26,990 --> 06:41:12,010

s

3836

06:41:37,548 --> 06:41:28,550

um

3837

06:41:42,230 --> 06:41:40,010

yeah your way Center will be coming true

3838

06:41:44,570 --> 06:41:42,240

that's right but so if you want you can

3839

06:41:49,548 --> 06:41:44,580

leave it open or

3840

06:41:57,590 --> 06:41:52,548

it's fine to close it off I'll shut it

3841

06:41:57,600 --> 06:42:03,830

thank you

3842

06:42:15,590 --> 06:42:06,230

and I while you wait we'll take a club

3843

06:42:43,730 --> 06:42:17,810

and copy Hopper you're at the Port Cedar

3844

06:42:43,740 --> 06:43:06,368

um

3845

06:43:11,090 --> 06:43:09,288

you just heard the call for a glove and

3846

06:43:13,430 --> 06:43:11,100

hap check these checks are done

3847

06:43:15,708 --> 06:43:13,440

regularly throughout the spacewalk

3848

06:43:17,628 --> 06:43:15,718

the glove check ensures that there is

3849

06:43:18,650 --> 06:43:17,638

not any damage during the spacewalk on

3850

06:43:21,350 --> 06:43:18,660

the gloves

3851
06:43:23,390 --> 06:43:21,360
and the hap stands for helmet absorption

3852
06:43:25,250 --> 06:43:23,400
pad and the astronauts check to ensure

3853
06:43:31,810 --> 06:43:25,260
nothing is leaking and the inside of the

3854
06:44:17,048 --> 06:43:35,810
my gloves still look new

3855
06:44:17,058 --> 06:44:23,090
on the mile marker

3856
06:44:31,430 --> 06:44:26,030
you're heading to 9150

3857
06:44:31,440 --> 06:44:40,010
or 3651

3858
06:44:45,530 --> 06:44:43,128
okay I got three six five two and three

3859
06:44:47,690 --> 06:44:45,540
six five one

3860
06:44:55,190 --> 06:44:47,700
all right so you can put your own anchor

3861
06:44:55,200 --> 06:45:32,690
and work

3862
06:45:39,650 --> 06:45:36,230
okay everyone thinker hook

3863
06:45:42,890 --> 06:45:39,660

is two three six five one they'll close

3864

06:45:45,110 --> 06:45:42,900

our lock back on black suit full test

3865

06:45:52,430 --> 06:45:45,120

see

3866

06:45:52,440 --> 06:46:03,310

some words on the wrist

3867

06:46:11,390 --> 06:46:06,110

all right sounds good so you feel red is

3868

06:46:17,150 --> 06:46:13,368

excellent It's good config so you can

3869

06:46:18,650 --> 06:46:17,160

tether to Ike's anchor hook via his

3870

06:46:29,330 --> 06:46:18,660

safety tether cable and then you can

3871

06:46:29,340 --> 06:47:02,810

there is in place

3872

06:47:08,270 --> 06:47:05,570

82 anchor hooks

3873

06:47:11,390 --> 06:47:08,280

to the pass to 3652 they'll close our

3874

06:47:14,750 --> 06:47:11,400

left back I'm back good focused like

3875

06:47:17,930 --> 06:47:14,760

you're a go to really show a stutter

3876

06:47:21,948 --> 06:47:20,570

all right uh Hopper at this point we'll

3877

06:47:33,128 --> 06:47:21,958

take a glove inspection and have check

3878

06:47:41,330 --> 06:47:36,110

and a big picture for both of you uh

3879

06:47:47,510 --> 06:47:43,670

now go ahead with your

3880

06:47:52,010 --> 06:47:49,128

yes

3881

06:47:53,948 --> 06:47:52,020

no change to the gloves and the door I

3882

06:47:56,208 --> 06:47:53,958

have

3883

06:47:58,610 --> 06:47:56,218

all right sounds good so just big

3884

06:48:01,368 --> 06:47:58,620

picture we're gonna go out to p6h Victor

3885

06:48:03,708 --> 06:48:01,378

removal and that's probably going to be

3886

06:48:05,990 --> 06:48:03,718

it for today uh we don't see a point

3887

06:48:07,910 --> 06:48:06,000

going back out to Columbus or bartolomeo

3888

06:48:09,230 --> 06:48:07,920

we don't think we'll have enough in case

3889

06:48:15,770 --> 06:48:09,240

we have to do troubleshooting out there

3890

06:48:23,030 --> 06:48:20,090

okay 52 51.

3891

06:48:24,468 --> 06:48:23,040

so uh Hopper you can tether back get

3892

06:48:28,490 --> 06:48:24,478

back into your lock on the internal

3893

06:48:28,500 --> 06:48:37,968

and shutting the thermal covers

3894

06:48:37,978 --> 06:48:45,468

thermal cover is closed

3895

06:48:45,478 --> 06:48:49,310

and uh big picture

3896

06:48:49,320 --> 06:48:54,468

foreign

3897

06:48:59,030 --> 06:48:56,270

that you'll be done with the H fixture

3898

06:49:01,490 --> 06:48:59,040

test at about the PT of six and a half

3899

06:49:03,708 --> 06:49:01,500

hours and then we'll use the last half

3900

06:49:10,448 --> 06:49:03,718

hour or so to get back inside if you

3901
06:49:10,458 --> 06:49:16,610
me too

3902
06:49:21,110 --> 06:49:19,548
and Hopper you're heading out to P6 long

3903
06:49:28,010 --> 06:49:21,120
spacer you're looking for a handrail

3904
06:49:28,020 --> 06:49:37,150
five three one one okay

3905
06:50:14,090 --> 06:49:40,420
and just a reminder

3906
06:50:14,100 --> 06:50:18,530
foreign

3907
06:50:22,448 --> 06:50:20,448
and you're also heading out to the P6

3908
06:50:29,150 --> 06:50:22,458
long spacer you're looking for handrail

3909
06:50:29,160 --> 06:50:34,788
five three zero nine

3910
06:51:14,868 --> 06:50:37,548
College Park in place

3911
06:51:14,878 --> 06:51:26,208
foreign

3912
06:51:31,128 --> 06:51:28,788
cable is hooked on something further

3913
06:51:31,910 --> 06:51:31,138

started I'm heading backwards figure it

3914

06:51:39,708 --> 06:51:31,920

out

3915

06:51:45,170 --> 06:51:43,070

hey Andy I think uh I am that's where I

3916

06:52:12,048 --> 06:51:45,180

need to

3917

06:52:15,708 --> 06:52:14,030

all right they decided to do its own

3918

06:52:18,350 --> 06:52:15,718

Poor Man's fair lead I've got my

3919

06:52:21,128 --> 06:52:18,360

favorite reels and I'm headed back

3920

06:52:27,230 --> 06:52:24,288

copy a like and uh some more good news

3921

06:52:30,170 --> 06:52:27,240

the uh four out of six cables that we

3922

06:52:32,048 --> 06:52:30,180

were able to mate at the Papa's

3923

06:52:34,430 --> 06:52:32,058

connector panel they all seem to be good

3924

06:52:44,270 --> 06:52:34,440

so at least we got

3925

06:52:44,280 --> 06:52:55,368

awesome awesome

3926

06:53:02,448 --> 06:53:00,350

okay Andy I'm at uh 5311.

3927

06:53:04,010 --> 06:53:02,458

maybe drop my Greenhouse

3928

06:53:05,868 --> 06:53:04,020

yep you're dropping your green hook

3929

06:53:08,330 --> 06:53:05,878

there and then you're heading out to the

3930

06:53:15,110 --> 06:53:08,340

BGA H fixture and stowing your crew lock

3931

06:53:27,650 --> 06:53:16,730

and I just have to thank each other

3932

06:53:27,660 --> 06:53:32,150

what handrail is your son Hopper

3933

06:53:36,468 --> 06:53:34,910

where you'll see my it's just uh right

3934

06:53:43,030 --> 06:53:36,478

about where you'll see my safety

3935

06:53:51,288 --> 06:53:45,830

yeah you're looking for five three zero

3936

06:53:57,310 --> 06:53:52,910

three zero nine

3937

06:54:03,890 --> 06:54:00,590

now approaching the six hour mark into

3938

06:54:05,990 --> 06:54:03,900

today's space walk this is the 233rd

3939

06:54:08,030 --> 06:54:06,000

spacewalk in support of assembly

3940

06:54:10,190 --> 06:54:08,040

maintenance and upgrades

3941

06:54:12,650 --> 06:54:10,200

so far today NASA astronauts Mike

3942

06:54:14,750 --> 06:54:12,660

Hopkins and Victor Glover have worked

3943

06:54:17,628 --> 06:54:14,760

together to remove the kolka or Columbus

3944

06:54:20,030 --> 06:54:17,638

Ka band antenna from

3945

06:54:21,830 --> 06:54:20,040

from the airlock and work together to

3946

06:54:23,030 --> 06:54:21,840

bring it to the Columbus module of the

3947

06:54:25,430 --> 06:54:23,040

space station

3948

06:54:28,670 --> 06:54:25,440

they then removed bolts on the Columbus

3949

06:54:30,650 --> 06:54:28,680

panels and installed culpa they then

3950

06:54:32,330 --> 06:54:30,660

worked together to secure the Coca to

3951

06:54:34,670 --> 06:54:32,340

the Columbus module

3952

06:54:37,128 --> 06:54:34,680

following that Glover routed kolka

3953

06:54:39,468 --> 06:54:37,138

cables and we have received word that

3954

06:54:40,610 --> 06:54:39,478

kolka is up and running and working as

3955

06:54:42,830 --> 06:54:40,620

it should be

3956

06:54:45,288 --> 06:54:42,840

the duo then headed to the bartolomeo

3957

06:54:47,810 --> 06:54:45,298

external science payload platform and

3958

06:54:49,548 --> 06:54:47,820

worked to Route cables to bartolomeo

3959

06:54:51,288 --> 06:54:49,558

two of the cables that have been

3960

06:54:53,510 --> 06:54:51,298

connected to Bar lemail appear to be

3961

06:54:55,968 --> 06:54:53,520

providing good electrical continuity and

3962

06:54:58,310 --> 06:54:55,978

power however the third cable was not

3963

06:55:00,530 --> 06:54:58,320

able to be connected and is currently

3964

06:55:03,468 --> 06:55:00,540

secured via wire tie and temporarily

3965

06:55:04,788 --> 06:55:03,478

capped off because of this bartolomeo is

3966

06:55:07,070 --> 06:55:04,798

not yet functional

3967

06:55:09,048 --> 06:55:07,080

however the current configuration of

3968

06:55:10,548 --> 06:55:09,058

Bartolo Mayo is in a safe configuration

3969

06:55:13,548 --> 06:55:10,558

and the teams will continue to

3970

06:55:15,708 --> 06:55:13,558

troubleshoot after today's spacewalk

3971

06:55:17,930 --> 06:55:15,718

the crew then removed a cover off of the

3972

06:55:20,270 --> 06:55:17,940

kolka which was installed to protect the

3973

06:55:22,128 --> 06:55:20,280

antenna during installation because the

3974

06:55:23,448 --> 06:55:22,138

cover was no longer needed it was then

3975

06:55:25,490 --> 06:55:23,458

jettisoned

3976

06:55:29,090 --> 06:55:25,500

the final task of the day is to remove

3977

06:55:31,730 --> 06:55:29,100

an H fixture from the P6 truss the H

3978

06:55:33,708 --> 06:55:31,740

fixture is a robotic interface that is

3979

06:55:35,628 --> 06:55:33,718

no longer needed the crew is currently

3980

06:55:37,610 --> 06:55:35,638

heading out to the P6 truss where they

3981

06:55:39,350 --> 06:55:37,620

will remove four bolts and will work

3982

06:55:40,430 --> 06:55:39,360

together to remove the plate from the

3983

06:55:43,010 --> 06:55:40,440

structure

3984

06:55:44,930 --> 06:55:43,020

doing so will open up four attach points

3985

06:55:50,900 --> 06:55:44,940

that will be used for future solar array

3986

06:55:50,910 --> 06:55:54,190

[Music]

3987

06:56:06,110 --> 06:55:57,490

5309 confirmed Networks

3988

06:56:06,120 --> 06:56:10,128

maybe on that four Bravo

3989

06:56:19,670 --> 06:56:12,650

copy so you can Stow your crew lock bag

3990

06:56:19,680 --> 06:56:43,090

right here

3991

06:56:47,690 --> 06:56:45,770

and Hopper once you've attempt stood

3992

06:56:54,110 --> 06:56:47,700

your crew lock bag you can retrieve the

3993

06:56:54,120 --> 06:57:05,330

I do

3994

06:57:14,150 --> 06:57:09,468

all right Andy four Stitch to 5309 green

3995

06:57:18,530 --> 06:57:16,128

you can head out to the each fixture

3996

06:57:23,990 --> 06:57:18,540

worksite and still your crew lock bag on

3997

06:57:24,000 --> 06:58:07,190

foreign

3998

06:58:07,200 --> 06:58:51,708

there's a fixture

3999

06:58:59,570 --> 06:58:54,048

right Andy I'm at the

4000

06:59:04,128 --> 06:59:02,270

all right you can uh Stow your mind more

4001
06:59:10,190 --> 06:59:04,138
inboard or outboard I think mine is

4002
06:59:10,200 --> 06:59:14,750
the H fixture that is

4003
06:59:14,760 --> 06:59:22,010
so it's above the ECU

4004
06:59:22,020 --> 06:59:28,968
yes thanks for that reminder

4005
06:59:28,978 --> 06:59:36,468
yeah I think I am not telly ECU

4006
06:59:36,478 --> 06:59:42,830
I'm sure

4007
06:59:53,590 --> 06:59:45,708
I'm getting out my two fires

4008
06:59:58,850 --> 06:59:56,208
yep so once you have the plier set and

4009
07:00:00,110 --> 06:59:58,860
the combo wrench then you can attach an

4010
07:00:11,090 --> 07:00:00,120
adjustable

4011
07:00:16,368 --> 07:00:13,190
this view from NASA astronaut Mike

4012
07:00:18,170 --> 07:00:16,378
Hopkins helmet cam is he gets some tools

4013
07:00:20,208 --> 07:00:18,180

out of any workstation that will be

4014

07:00:26,570 --> 07:00:20,218

required for the H6

4015

07:00:30,770 --> 07:00:28,968

the H fixture is a robotic interface

4016

07:00:32,990 --> 07:00:30,780

that is no longer needed and the plate

4017

07:00:34,910 --> 07:00:33,000

is secured by four bolts

4018

07:00:37,430 --> 07:00:34,920

the crew members will work together to

4019

07:00:39,530 --> 07:00:37,440

remove the bolts and then remove the

4020

07:00:41,090 --> 07:00:39,540

plate from the structure this will open

4021

07:00:43,010 --> 07:00:41,100

up four attach points that will be used

4022

07:00:52,190 --> 07:00:43,020

for future solar array power system

4023

07:00:52,200 --> 07:00:58,968

picture

4024

07:00:58,978 --> 07:01:05,270

okay I have the adjustable attacks

4025

07:01:12,530 --> 07:01:08,510

and we have good Wes from Hopper and we

4026
07:01:14,150 --> 07:01:12,540
do also have uh wvs from UI it's a kind

4027
07:01:16,368 --> 07:01:14,160
of coming and going but right now it

4028
07:01:23,448 --> 07:01:16,378
looks okay

4029
07:01:28,250 --> 07:01:26,570
and I'm ready for PGT settings

4030
07:01:30,650 --> 07:01:28,260
all right I just want to make sure you

4031
07:01:33,530 --> 07:01:30,660
also have a small trash bag ready just

4032
07:01:35,530 --> 07:01:33,540
in case of Bolt failure and then PG said

4033
07:01:42,288 --> 07:01:35,540
PGT settings are Bravo 7

4034
07:01:42,298 --> 07:01:46,868
of those seven counterclock guys one

4035
07:01:46,878 --> 07:02:07,510
good read back

4036
07:02:12,788 --> 07:02:10,270
in work

4037
07:02:22,390 --> 07:02:12,798
and we'd like

4038
07:02:28,850 --> 07:02:26,208

Hopkins Now using his PGT or pistol grip

4039

07:02:31,850 --> 07:02:28,860

tool in order to remove Bolts from the h

4040

07:02:31,860 --> 07:02:43,150

foreign

4041

07:02:48,350 --> 07:02:46,430

the PGT is essentially a space drill

4042

07:03:05,690 --> 07:02:48,360

that astronauts use during space walks

4043

07:03:05,700 --> 07:03:11,170

before it returns

4044

07:03:16,490 --> 07:03:14,990

could you say bolt four two turns

4045

07:03:20,650 --> 07:03:16,500

okay Andy I'm ready for those settings

4046

07:03:30,530 --> 07:03:23,868

Ike that's Bravo seven counterclockwise

4047

07:03:37,548 --> 07:03:32,448

second counterclock one

4048

07:03:42,770 --> 07:03:39,948

both three two turns and Ike you can

4049

07:03:44,868 --> 07:03:42,780

release one to two turns uh release the

4050

07:03:51,650 --> 07:03:44,878

torque any order please report number of

4051
07:03:58,510 --> 07:03:54,288
that's the original one

4052
07:03:58,520 --> 07:04:22,010
copy about two two turns

4053
07:04:22,020 --> 07:04:26,708
into the next step

4054
07:04:37,010 --> 07:04:30,410
so Hopper just to confirm all four bolts

4055
07:04:42,830 --> 07:04:40,070
okay now you can fully release all the

4056
07:04:46,010 --> 07:04:42,840
four bolts in any order same settings

4057
07:04:54,788 --> 07:04:46,020
Bravo 7 counterclockwise one

4058
07:05:00,350 --> 07:04:56,530
in

4059
07:05:04,788 --> 07:05:00,360
yeah 12 total so I did the math for you

4060
07:05:04,798 --> 07:05:28,490
thank you

4061
07:05:33,890 --> 07:05:31,490
okay Andy I got a little Fidelis I got

4062
07:05:36,910 --> 07:05:33,900
four turns on one but I got two turns

4063
07:05:42,708 --> 07:05:39,110

copy that you just want to test my math

4064

07:05:45,890 --> 07:05:42,718

skills so you can fully release all four

4065

07:05:47,990 --> 07:05:45,900

bolts same settings Bravo seven

4066

07:05:49,910 --> 07:05:48,000

counterclockwise one

4067

07:05:52,010 --> 07:05:49,920

bolt one

4068

07:05:53,628 --> 07:05:52,020

please no more than eight turns and then

4069

07:05:58,368 --> 07:05:53,638

two three and four no more than ten

4070

07:05:58,378 --> 07:06:04,910

work

4071

07:06:22,030 --> 07:06:08,270

all right same for example one

4072

07:06:26,208 --> 07:06:24,468

we just heard confirmation that the

4073

07:06:59,868 --> 07:06:26,218

first bolt on the H fixture has been

4074

07:07:03,048 --> 07:07:01,788

we've all one took four more turns it's

4075

07:07:05,390 --> 07:07:03,058

fully released

4076
07:07:14,628 --> 07:07:05,400
about two to two more I'm sorry seven

4077
07:07:43,490 --> 07:07:16,730
fully released

4078
07:08:14,510 --> 07:07:45,708
five turns on both three is fully

4079
07:08:14,520 --> 07:08:37,070
all three fully released

4080
07:08:49,968 --> 07:08:39,350
all four

4081
07:08:52,310 --> 07:08:49,978
released so you can now install the two

4082
07:08:55,310 --> 07:08:52,320
pliers into the H fixture channels until

4083
07:09:08,090 --> 07:08:55,320
the markzery really reached if you need

4084
07:09:12,650 --> 07:09:10,430
and with that we just heard confirmation

4085
07:09:15,288 --> 07:09:12,660
that all four bolts on the H fixture

4086
07:09:17,390 --> 07:09:15,298
have been released next up a special

4087
07:09:19,730 --> 07:09:17,400
pair of pliers will be installed in

4088
07:09:29,030 --> 07:09:19,740

order to help remove the H fixture from

4089

07:09:34,810 --> 07:09:31,390

and Tim turns

4090

07:09:37,390 --> 07:09:34,820

to fully released

4091

07:09:39,650 --> 07:09:37,400

copy that Hopper so you can also install

4092

07:09:58,788 --> 07:09:39,660

the pliers into the each fixture

4093

07:09:58,798 --> 07:10:52,690

foreign

4094

07:10:58,788 --> 07:10:56,628

so once you have both pliers in the H

4095

07:11:00,468 --> 07:10:58,798

fixture channels and really pushed in

4096

07:11:02,690 --> 07:11:00,478

until the marks are reached then you can

4097

07:11:04,190 --> 07:11:02,700

take your Crow's foot from the combo

4098

07:11:12,048 --> 07:11:04,200

wrench and put that in the H fixture

4099

07:11:12,058 --> 07:11:29,090

okay

4100

07:11:29,100 --> 07:12:11,230

foreign

4101
07:12:16,128 --> 07:12:14,208
and uh just a reminder to have a tether

4102
07:12:17,810 --> 07:12:16,138
on the H fixture for both of you there

4103
07:12:24,230 --> 07:12:17,820
should be an adjustable go into the H

4104
07:12:24,240 --> 07:12:45,730
and he wants

4105
07:12:50,448 --> 07:12:48,288
we're in a brief expected Handover

4106
07:12:52,250 --> 07:12:50,458
between satellites and we'll regain

4107
07:12:53,570 --> 07:12:52,260
Communications with our space Walkers

4108
07:12:59,030 --> 07:12:53,580
here shortly

4109
07:13:02,390 --> 07:13:01,070
we just have a Handover I think I copied

4110
07:13:05,150 --> 07:13:02,400
you said you have a tether to the H

4111
07:13:05,160 --> 07:13:48,410
each color

4112
07:13:53,990 --> 07:13:50,830
foreign

4113
07:13:56,208 --> 07:13:54,000

this view from NASA astronaut Mike

4114

07:13:59,390 --> 07:13:56,218

Hopkins helmet cam as he works to

4115

07:14:23,868 --> 07:13:59,400

install pliers to the H fixture in order

4116

07:14:23,878 --> 07:14:55,520

foreign

4117

07:15:00,350 --> 07:14:57,110

[Music]

4118

07:15:02,208 --> 07:15:00,360

yeah so just a reminder both of the

4119

07:15:04,788 --> 07:15:02,218

pliers need to be inserted at the same

4120

07:15:10,368 --> 07:15:04,798

time to press the detent out of place

4121

07:16:07,548 --> 07:15:12,048

yep

4122

07:16:11,448 --> 07:16:09,170

well

4123

07:16:17,030 --> 07:16:11,458

I think you're going to rotate

4124

07:16:22,368 --> 07:16:20,270

in different body positions

4125

07:16:27,170 --> 07:16:22,378

yeah I went perpendicular

4126
07:16:27,180 --> 07:16:42,590
I started

4127
07:16:42,600 --> 07:17:19,030
ah

4128
07:17:30,310 --> 07:17:22,310
so if you're having trouble with the

4129
07:17:30,320 --> 07:17:37,548
is going to be any better

4130
07:17:37,558 --> 07:17:48,590
they're going slowly

4131
07:17:54,590 --> 07:17:52,070
from ev2 can you see my uh

4132
07:17:58,190 --> 07:17:54,600
like rims there's a ridge

4133
07:17:58,200 --> 07:18:06,948
penis flyer

4134
07:18:11,448 --> 07:18:09,590
so you said there's a a ridge kind of

4135
07:18:14,208 --> 07:18:11,458
blocking you from rotating the fire is

4136
07:18:18,468 --> 07:18:16,070
yeah

4137
07:18:25,730 --> 07:18:18,478
in my videos

4138
07:18:35,868 --> 07:18:27,468

yeah I think we see it so that's why you

4139

07:18:40,910 --> 07:18:38,690

Hopkins and Glover continuing to try to

4140

07:18:49,270 --> 07:18:40,920

install pliers in order to pry the H

4141

07:18:53,750 --> 07:18:52,310

so I it looks like yours might be in do

4142

07:18:57,170 --> 07:18:53,760

you want to give it a go with the combo

4143

07:19:00,770 --> 07:18:58,968

okay and works

4144

07:19:26,810 --> 07:19:00,780

yeah I think the bottom one just went a

4145

07:19:26,820 --> 07:19:53,990

foreign

4146

07:19:58,070 --> 07:19:55,388

hey

4147

07:20:01,490 --> 07:19:58,080

good job I feel like we were all the way

4148

07:20:03,650 --> 07:20:01,500

cvso Hopper but they were uh

4149

07:20:07,548 --> 07:20:03,660

you know just the captain tape piece was

4150

07:20:12,530 --> 07:20:09,170

I think you might be able to just pop

4151
07:20:43,730 --> 07:20:15,590
no I'm not even close

4152
07:20:43,740 --> 07:20:57,708
thank you

4153
07:21:02,110 --> 07:20:59,868
so that last few inches of Vine getting

4154
07:21:04,250 --> 07:21:02,120
in there was just kind of jiggling it

4155
07:21:06,948 --> 07:21:04,260
you know how in the video it kind of

4156
07:21:08,570 --> 07:21:06,958
just went in plain yeah it was in the

4157
07:21:11,510 --> 07:21:08,580
same plane and then they just rotated

4158
07:21:13,730 --> 07:21:11,520
Brian actually came in from the side but

4159
07:21:16,368 --> 07:21:13,740
on the part vaping you

4160
07:21:18,110 --> 07:21:16,378
I kind of split it in and then right at

4161
07:21:27,968 --> 07:21:18,120
the last minute it went flushing flame

4162
07:21:33,770 --> 07:21:30,770
we received word that Glover was able to

4163
07:21:37,788 --> 07:21:33,780

get his H fixture removed from the plate

4164

07:21:41,150 --> 07:21:39,350

all right we see you there uh working

4165

07:21:46,388 --> 07:21:41,160

Hopper we'll give it another minute or

4166

07:21:50,208 --> 07:21:48,590

and it looks like you have one of them

4167

07:21:52,250 --> 07:21:50,218

in at least so if you want to give it a

4168

07:21:56,030 --> 07:21:52,260

try with the combo wrench that's fine

4169

07:22:03,048 --> 07:21:58,368

I finally got it yeah that looks good

4170

07:22:10,128 --> 07:22:06,830

four it's released and with that Hopkins

4171

07:22:16,190 --> 07:22:10,138

was able to remove his H mixture from

4172

07:22:22,368 --> 07:22:17,388

very nice

4173

07:22:26,810 --> 07:22:24,770

it's just uh once you get it in the

4174

07:22:30,968 --> 07:22:26,820

right spot

4175

07:22:37,910 --> 07:22:34,968

all right so um you can reinstall mli if

4176
07:22:40,610 --> 07:22:37,920
you removed it and grab some quick

4177
07:22:42,948 --> 07:22:40,620
imagery of the GSC pen

4178
07:22:46,368 --> 07:22:42,958
now we'll skip the imagery for for now

4179
07:22:47,930 --> 07:22:46,378
so you can just uh reinstall mli if you

4180
07:22:50,448 --> 07:22:47,940
removed it and then Stow the tools on

4181
07:22:51,888 --> 07:22:50,458
the H fixture in your crew lock bags and

4182
07:22:55,128 --> 07:22:51,898
then we'll get hidden back towards the

4183
07:23:04,788 --> 07:22:58,310
a little fixture in the bag

4184
07:23:04,798 --> 07:23:10,010
on the brt

4185
07:23:14,270 --> 07:23:11,930
picking up my tethers

4186
07:23:16,368 --> 07:23:14,280
I'm gonna head back

4187
07:23:18,548 --> 07:23:16,378
your pictures I go back firstly when I

4188
07:23:21,708 --> 07:23:18,558

need to see pictures always get pictures

4189

07:23:23,750 --> 07:23:21,718

no no need for pictures today uh we're

4190

07:23:25,490 --> 07:23:23,760

happy we'll head back uh just before you

4191

07:23:27,708 --> 07:23:25,500

head back we'll take a glove inspection

4192

07:23:31,730 --> 07:23:27,718

a Hab check and a gauntlets check please

4193

07:23:56,628 --> 07:23:44,270

okay

4194

07:24:02,690 --> 07:23:59,750

EBT happens Drive got some

4195

07:24:05,030 --> 07:24:02,700

on my palm of my right glove here facing

4196

07:24:07,250 --> 07:24:05,040

my pinky just some like you know eraser

4197

07:24:09,230 --> 07:24:07,260

another

4198

07:24:12,110 --> 07:24:09,240

RTV

4199

07:24:17,150 --> 07:24:12,120

calling taxi it's all still attached

4200

07:24:24,770 --> 07:24:19,250

coffee then just check your confidence

4201
07:24:24,780 --> 07:24:28,788
okay 81 is

4202
07:24:34,190 --> 07:24:30,410
I have

4203
07:24:36,650 --> 07:24:34,200
rough glove looks good

4204
07:24:39,770 --> 07:24:36,660
I thought there's little

4205
07:24:42,650 --> 07:24:39,780
the damage to the uh

4206
07:24:44,868 --> 07:24:42,660
and with the successful remover removal

4207
07:24:47,330 --> 07:24:44,878
of both H fixtures

4208
07:24:49,670 --> 07:24:47,340
a slot is opened up that will be used

4209
07:24:52,250 --> 07:24:49,680
for future solar power array systems

4210
07:24:53,930 --> 07:24:52,260
upgrades the crew is now performing a

4211
07:24:56,090 --> 07:24:53,940
glove and hap check and will then head

4212
07:24:57,410 --> 07:24:56,100
back to the airlock to begin Ingress

4213
07:24:59,330 --> 07:24:57,420

procedures

4214

07:25:01,730 --> 07:24:59,340

mli back in place if you removed it

4215

07:25:20,868 --> 07:25:03,530

didn't remove any

4216

07:25:20,878 --> 07:25:23,708

I'm heading back

4217

07:25:30,048 --> 07:25:28,310

to the elaboration you got it okay

4218

07:25:32,270 --> 07:25:30,058

um sir just before you guys head back

4219

07:25:38,330 --> 07:25:32,280

I'm sorry uh we're gonna need a picture

4220

07:25:45,948 --> 07:25:40,060

working

4221

07:26:06,730 --> 07:25:48,288

okay I copyright so just the pictures

4222

07:26:10,548 --> 07:26:09,110

and like you're you've picked up or

4223

07:26:14,330 --> 07:26:10,558

you're gonna pick up a green Hook from

4224

07:26:24,948 --> 07:26:17,330

hi 309 I'm on the way there

4225

07:26:24,958 --> 07:26:28,990

we copy Hopper thank you

4226
07:26:33,468 --> 07:26:31,548
as the spacewalkers perform some

4227
07:26:35,150 --> 07:26:33,478
close-out imagery let's take a look back

4228
07:26:37,190 --> 07:26:35,160
at all that has been accomplished in

4229
07:26:39,770 --> 07:26:37,200
today's space walk now nearing the six

4230
07:26:42,350 --> 07:26:39,780
and a half hour mark today's space walk

4231
07:26:44,990 --> 07:26:42,360
is the 233rd in support of assembly

4232
07:26:47,388 --> 07:26:45,000
maintenance and upgrades

4233
07:26:49,310 --> 07:26:47,398
to start the day off NASA astronauts

4234
07:26:51,650 --> 07:26:49,320
Mike Hopkins and Victor Glover worked

4235
07:26:55,070 --> 07:26:51,660
together to remove the polka or Columbus

4236
07:26:56,330 --> 07:26:55,080
Ka band antenna out of the airlock and

4237
07:26:57,888 --> 07:26:56,340
brought it with them to the Columbus

4238
07:27:03,468 --> 07:26:57,898

module

4239

07:27:05,810 --> 07:27:03,478

worked together again to remove bolts on

4240

07:27:07,190 --> 07:27:05,820

the Columbus panels and then installed

4241

07:27:09,110 --> 07:27:07,200

the kolka

4242

07:27:13,070 --> 07:27:09,120

coca was then secured to the Columbus

4243

07:27:15,350 --> 07:27:13,080

module and cables were routed

4244

07:27:17,208 --> 07:27:15,360

we did receive word that kolka is up and

4245

07:27:18,548 --> 07:27:17,218

running and working as it should

4246

07:27:20,810 --> 07:27:18,558

to the airlock

4247

07:27:23,330 --> 07:27:20,820

following this the duo headed to the

4248

07:27:25,548 --> 07:27:23,340

bartolomeo science platform and worked

4249

07:27:27,650 --> 07:27:25,558

to Route cables to bartolomeo

4250

07:27:29,388 --> 07:27:27,660

or out of the six cables that have been

4251
07:27:31,368 --> 07:27:29,398
connected to Bartlett lemail appear to

4252
07:27:34,010 --> 07:27:31,378
be providing good electrical continuity

4253
07:27:36,410 --> 07:27:34,020
and power however the other two have

4254
07:27:39,048 --> 07:27:36,420
were not able to be connected and are

4255
07:27:40,850 --> 07:27:39,058
currently secured via wire tie and

4256
07:27:43,010 --> 07:27:40,860
temporarily capped off

4257
07:27:45,110 --> 07:27:43,020
because of this bartolomeo is not yet

4258
07:27:47,150 --> 07:27:45,120
functional the current bartolomeo

4259
07:27:48,830 --> 07:27:47,160
configuration is in a safe configuration

4260
07:27:52,190 --> 07:27:48,840
and the teams will continue to

4261
07:27:54,288 --> 07:27:52,200
troubleshoot after the Eva

4262
07:27:56,388 --> 07:27:54,298
the crew then worked together to remove

4263
07:27:58,128 --> 07:27:56,398

a cover off of the Coca which was

4264

07:27:59,330 --> 07:27:58,138

installed to protect the antenna during

4265

07:28:01,250 --> 07:27:59,340

installation

4266

07:28:04,190 --> 07:28:01,260

because the cover was no longer needed

4267

07:28:06,288 --> 07:28:04,200

it was jettisoned off the robotic arm

4268

07:28:08,330 --> 07:28:06,298

the final task of the day you just saw

4269

07:28:10,730 --> 07:28:08,340

in which the duo worked together to

4270

07:28:13,850 --> 07:28:10,740

remove two H fixtures

4271

07:28:16,010 --> 07:28:13,860

from the P6 truss of the station the H

4272

07:28:18,170 --> 07:28:16,020

fixtures are robotic interfaces that are

4273

07:28:20,090 --> 07:28:18,180

no longer needed and these removals open

4274

07:28:22,070 --> 07:28:20,100

up for attach points that will be used

4275

07:28:23,330 --> 07:28:22,080

for future solar array power system

4276
07:28:25,788 --> 07:28:23,340
upgrades

4277
07:28:27,948 --> 07:28:25,798
the duo now heading back to the hatch to

4278
07:29:04,910 --> 07:28:27,958
begin Ingress and repressurization

4279
07:29:10,548 --> 07:29:07,010
howdy

4280
07:29:17,150 --> 07:29:10,558
all right Andy my green hooks

4281
07:29:24,410 --> 07:29:20,750
The Reel is unlocked

4282
07:29:27,230 --> 07:29:25,610
copy that

4283
07:29:29,090 --> 07:29:27,240
so once you're back at the airlock you

4284
07:29:31,010 --> 07:29:29,100
can open the hatch thermal cover and

4285
07:29:33,650 --> 07:29:31,020
then you can attach your your weight

4286
07:29:38,628 --> 07:29:33,660
together to the airlock waste tether and

4287
07:29:45,888 --> 07:29:40,250
me too

4288
07:29:51,948 --> 07:29:49,310

let me get back there right say again

4289

07:29:53,750 --> 07:29:51,958

it's the key warm for me yeah

4290

07:29:55,548 --> 07:29:53,760

I don't know if I told you earlier 80 my

4291

07:30:12,288 --> 07:29:55,558

gutless are in place

4292

07:30:12,298 --> 07:30:44,510

foreign

4293

07:30:44,520 --> 07:31:11,410

okay

4294

07:31:16,910 --> 07:31:14,628

an offer you can translate to handrail

4295

07:31:19,310 --> 07:31:16,920

3652 where your anchor Hook is and then

4296

07:31:22,910 --> 07:31:19,320

hang out there until Ike has established

4297

07:31:27,468 --> 07:31:25,190

right

4298

07:31:29,510 --> 07:31:27,478

and I'm going to put my greenhouse back

4299

07:32:12,708 --> 07:31:29,520

down

4300

07:32:37,310 --> 07:32:14,868

all right I'm across the lab Hopper

4301
07:32:37,320 --> 07:32:43,368
under the Port City cart Park here

4302
07:32:52,968 --> 07:32:46,868
maybe my green hook for the second time

4303
07:32:52,978 --> 07:33:19,448
pulling down the features

4304
07:33:19,458 --> 07:33:29,150
thank you

4305
07:33:41,708 --> 07:33:31,788
all right I'm back at the hatch right

4306
07:33:56,510 --> 07:33:44,208
copy all so you can attach your waste

4307
07:33:56,520 --> 07:34:09,350
Lord

4308
07:34:09,360 --> 07:34:15,330
about the airlock d-ring extender

4309
07:34:15,340 --> 07:34:19,150
[Applause]

4310
07:34:23,330 --> 07:34:22,150
yep that's perfectly fine

4311
07:34:25,730 --> 07:34:23,340
[Applause]

4312
07:34:28,430 --> 07:34:25,740
I'm locked on the airlock area get

4313
07:34:30,468 --> 07:34:28,440

closer clock

4314

07:34:32,448 --> 07:34:30,478

I don't wait until their small Hook is

4315

07:34:34,610 --> 07:34:32,458

locked to my regular extender block on

4316

07:34:39,770 --> 07:34:34,620

block

4317

07:34:48,650 --> 07:34:41,448

FPS

4318

07:34:58,610 --> 07:34:50,930

40 seconds to the slingshot

4319

07:34:58,620 --> 07:35:03,048

all right I'm at the slingshot

4320

07:35:07,190 --> 07:35:05,570

all right so you can tether to Ike's

4321

07:35:09,288 --> 07:35:07,200

safety tether cable

4322

07:35:45,110 --> 07:35:09,298

and then you can release his anchor hook

4323

07:35:45,120 --> 07:35:55,690

okay

4324

07:36:02,090 --> 07:35:58,610

Andy crew locks back too

4325

07:36:07,490 --> 07:36:02,100

give me three UIA

4326
07:36:07,500 --> 07:36:10,430
copy

4327
07:36:17,270 --> 07:36:12,230
and I'm going out to get those two large

4328
07:36:17,280 --> 07:36:40,430
copy

4329
07:36:47,570 --> 07:36:44,030
okay you need two

4330
07:36:57,288 --> 07:36:51,230
attached to my green or red reel

4331
07:36:57,298 --> 07:37:05,930
coffee

4332
07:37:16,190 --> 07:37:08,090
and you can retrieve your own anchor

4333
07:37:16,200 --> 07:37:22,750
foreign

4334
07:37:28,010 --> 07:37:25,250
Victor Glover has arrived back to the

4335
07:37:29,930 --> 07:37:28,020
airlock my Hopkins is continuing to make

4336
07:37:32,150 --> 07:37:29,940
his way back there once they both arrive

4337
07:37:36,468 --> 07:37:32,160
they'll work on Ingress procedures and

4338
07:37:45,170 --> 07:37:36,478

will work to D repressure re-pressurize

4339

07:37:50,090 --> 07:37:47,208

copy you on your way back to the airlock

4340

07:37:54,410 --> 07:37:50,100

Hopper when you pass the port Cedar cart

4341

07:38:27,888 --> 07:37:54,420

police press the brake release two times

4342

07:38:27,898 --> 07:39:04,430

foreign

4343

07:39:04,440 --> 07:39:07,128

yeah

4344

07:39:12,288 --> 07:39:09,350

see me

4345

07:39:20,150 --> 07:39:16,850

all right I see a break

4346

07:39:24,048 --> 07:39:20,160

and handy both of those large Smalls are

4347

07:39:26,448 --> 07:39:24,058

on the verlock theory extender

4348

07:39:35,270 --> 07:39:26,458

it's been released from the circular

4349

07:39:41,030 --> 07:39:36,948

break

4350

07:39:49,010 --> 07:39:41,040

of the pork soup yep we saw that thank

4351
07:39:49,020 --> 07:39:54,190
you got the uh rep for my

4352
07:39:58,368 --> 07:39:56,150
bag

4353
07:40:21,410 --> 07:39:58,378
uh I will shortly

4354
07:40:21,420 --> 07:40:40,548
come on

4355
07:40:40,558 --> 07:40:53,750
station Houston Space to ground three

4356
07:40:59,270 --> 07:40:56,330
yeah three

4357
07:41:00,888 --> 07:40:59,280
okay AK we know you're watching but in

4358
07:41:02,628 --> 07:41:00,898
case you're distracted crew's uh coming

4359
07:41:04,490 --> 07:41:02,638
back into the airlock here shortly I am

4360
07:41:10,788 --> 07:41:04,500
here you should see some notes right

4361
07:41:10,798 --> 07:41:15,468
well I can look it for you

4362
07:41:15,478 --> 07:41:32,090
down

4363
07:41:32,100 --> 07:41:38,690

you know just take it off your VO2 yeah

4364

07:41:43,910 --> 07:41:41,628

now six hours and 43 minutes into

4365

07:41:46,610 --> 07:41:43,920

today's space walk as NASA astronaut

4366

07:41:48,948 --> 07:41:46,620

Mike Hopkins Mike Hopkins Works to join

4367

07:41:51,288 --> 07:41:48,958

fellow NASA astronaut Victor Glover in

4368

07:41:52,968 --> 07:41:51,298

the airlock once in they'll close the

4369

07:42:01,910 --> 07:41:52,978

hatch and begin repressurization

4370

07:42:07,850 --> 07:42:04,910

what can I do for you

4371

07:42:09,590 --> 07:42:07,860

okay uh water's gonna come in we're a

4372

07:42:12,170 --> 07:42:09,600

good complete for coming in right I like

4373

07:42:14,270 --> 07:42:12,180

the sound of that yep I uh I take each

4374

07:42:17,030 --> 07:42:14,280

other steel is right in the opening but

4375

07:42:18,830 --> 07:42:17,040

yeah other than that

4376

07:42:20,868 --> 07:42:18,840

oh it's a good daisy chain is that what

4377

07:42:24,288 --> 07:42:20,878

you feel uh

4378

07:42:26,090 --> 07:42:24,298

Sandy yeah from our point of view

4379

07:42:27,830 --> 07:42:26,100

everything's good

4380

07:42:29,930 --> 07:42:27,840

um all the way back from the slingshot

4381

07:42:33,590 --> 07:42:29,940

so once uh Ike's in place and you have a

4382

07:42:41,090 --> 07:42:38,208

after that currently forward and Report

4383

07:42:50,468 --> 07:42:41,100

but I'm happy to move

4384

07:42:50,478 --> 07:43:08,708

Mr October

4385

07:43:18,410 --> 07:43:12,048

and once the thermal cover is closed you

4386

07:43:18,420 --> 07:43:23,690

velcro straps

4387

07:43:31,850 --> 07:43:26,030

ing

4388

07:43:33,590 --> 07:43:31,860

thermal hatch cover and as the

4389

07:43:36,350 --> 07:43:33,600

astronauts entered the crew lock portion

4390

07:43:38,810 --> 07:43:36,360

of the quest airlock Ingress Begins the

4391

07:43:40,910 --> 07:43:38,820

end of the spacewalk for the day however

4392

07:43:43,730 --> 07:43:40,920

the spacewalk timer will continue to run

4393

07:43:47,090 --> 07:43:43,740

until repressurization begins at which

4394

07:43:47,100 --> 07:43:51,530

cool stuff is attached

4395

07:43:56,450 --> 07:43:54,490

all right you can both

4396

07:43:58,208 --> 07:43:56,460

roomy palatial

4397

07:44:02,510 --> 07:43:58,218

[Music]

4398

07:44:05,388 --> 07:44:02,520

all right then um you can remove the seu

4399

07:44:07,368 --> 07:44:05,398

from the pouch remove the DCM cover and

4400

07:44:12,490 --> 07:44:07,378

velcro to the DCM and then connect the

4401
07:44:12,500 --> 07:44:30,490
[Applause]

4402
07:44:35,448 --> 07:44:32,750
once the crew lock is completely

4403
07:44:36,948 --> 07:44:35,458
repressurized repressurized the

4404
07:44:38,448 --> 07:44:36,958
astronauts on the other side of the

4405
07:44:40,968 --> 07:44:38,458
quest airlock will bring our space

4406
07:44:43,548 --> 07:44:40,978
walkers in from the crew lock portion to

4407
07:44:45,350 --> 07:44:43,558
the airlock into the equipment lock and

4408
07:45:11,570 --> 07:44:45,360
will help them doff their suits and

4409
07:45:11,580 --> 07:45:15,470
foreign

4410
07:45:15,480 --> 07:45:19,910
[Music]

4411
07:45:19,920 --> 07:45:25,128
works

4412
07:45:37,730 --> 07:45:28,010
copy and just uh double check that the

4413
07:45:42,948 --> 07:45:39,530

choose locks

4414

07:45:45,230 --> 07:45:42,958

copy a note here a tcv sing of eight

4415

07:45:47,270 --> 07:45:45,240

which is Max cold will minimize the time

4416

07:45:50,150 --> 07:45:47,280

for SCU Cooling

4417

07:45:52,368 --> 07:45:50,160

all right so now you can switch your

4418

07:45:59,868 --> 07:45:52,378

water to off off

4419

07:46:04,730 --> 07:46:02,750

water

4420

07:46:09,830 --> 07:46:04,740

okay I caution don't close the hatch

4421

07:46:09,840 --> 07:46:15,010

thank you

4422

07:46:20,090 --> 07:46:17,868

so you can verify that outer hatch is

4423

07:46:22,910 --> 07:46:20,100

clear of hardware

4424

07:46:31,490 --> 07:46:22,920

and verify the hatch handled position is

4425

07:46:39,590 --> 07:46:35,628

handle position for the heads decal

4426
07:46:41,750 --> 07:46:39,600
so in the unmasked position

4427
07:48:06,788 --> 07:46:41,760
and

4428
07:48:12,410 --> 07:48:09,770
okay that's two minutes for the Emu

4429
07:48:27,350 --> 07:48:12,420
water you can close and lock the Eevee

4430
07:48:32,288 --> 07:48:29,690
I can caught on something back here they

4431
07:48:37,128 --> 07:48:32,298
get cold so I'll probably be in front of

4432
07:48:37,138 --> 07:48:40,670
can do that

4433
07:48:46,010 --> 07:48:43,388
maneuver forward

4434
07:48:50,150 --> 07:48:46,020
Hopkins now working to close the hatch

4435
07:49:06,710 --> 07:48:52,610
thank you that's me yeah can you go to

4436
07:49:06,720 --> 07:49:15,590
[Music]

4437
07:49:15,600 --> 07:49:34,490
ah

4438
07:49:34,500 --> 07:49:42,110

all right let's do this one more time

4439

07:49:46,850 --> 07:49:44,388

to save each other's

4440

07:49:50,330 --> 07:49:46,860

so it's like uh you got them on your low

4441

07:49:50,340 --> 07:49:58,548

okay

4442

07:50:08,330 --> 07:50:01,310

I confer

4443

07:50:15,770 --> 07:50:11,868

I'm showing in the last position

4444

07:50:15,780 --> 07:50:19,448

that's his clothes

4445

07:50:24,170 --> 07:50:22,788

puppy that's good that's cool that's

4446

07:50:26,930 --> 07:50:24,180

good news that takes us on to the

4447

07:50:29,330 --> 07:50:26,940

depressed repress cue card and uh first

4448

07:50:35,448 --> 07:50:29,340

thing is just to double check that the

4449

07:50:41,030 --> 07:50:39,288

and that's connected to the DC uh um

4450

07:50:46,208 --> 07:50:41,040

and again just double check your water

4451
07:50:51,230 --> 07:50:48,888
dv2 off

4452
07:50:52,850 --> 07:50:51,240
all right third step is to check that

4453
07:50:53,990 --> 07:50:52,860
the hatch is closed and locked which you

4454
07:50:57,708 --> 07:50:54,000
just did

4455
07:51:01,490 --> 07:50:57,718
so next lke on

4456
07:51:07,250 --> 07:51:01,500
lke on the UIA check that the oxygen emu

4457
07:51:10,128 --> 07:51:08,448
again

4458
07:51:14,708 --> 07:51:10,138
emu one

4459
07:51:23,208 --> 07:51:18,110
next you can switch power to ev1 and 2

4460
07:51:27,350 --> 07:51:25,730
power

4461
07:51:33,708 --> 07:51:27,360
B1

4462
07:51:36,530 --> 07:51:33,718
on good green LED power eb2 on green LED

4463
07:51:38,448 --> 07:51:36,540

then check that the uh hold on takes

4464

07:51:41,990 --> 07:51:38,458

both turns to

4465

07:51:42,000 --> 07:51:46,208

one eight seven six

4466

07:51:56,030 --> 07:51:50,090

copy so on your DCM you can switch power

4467

07:51:56,040 --> 07:51:59,888

51

4468

07:52:04,368 --> 07:52:02,930

. all right well it's been a pleasure

4469

07:52:06,288 --> 07:52:04,378

working with you at this point I'll hand

4470

07:52:08,750 --> 07:52:06,298

you over to suichi who's in the

4471

07:52:12,530 --> 07:52:08,760

equipment lock standing by ready to help

4472

07:52:18,530 --> 07:52:15,590

thank you so much Andy um the your

4473

07:52:22,548 --> 07:52:18,540

friend please taking over from here and

4474

07:52:26,330 --> 07:52:22,558

uh eb1 eb2 this is uh IV

4475

07:52:32,930 --> 07:52:26,340

action O2 off Trader to press

4476

07:52:32,940 --> 07:52:43,250

CB1

4477

07:52:43,260 --> 07:52:55,310

standby

4478

07:53:03,590 --> 07:53:00,530

press two copy eb2 and ev1 check EV

4479

07:53:05,208 --> 07:53:03,600

hatch M5 closed if you have to impact

4480

07:53:09,468 --> 07:53:05,218

Pros dv1

4481

07:53:10,330 --> 07:53:09,478

okay okay next time okay I will start

4482

07:53:15,888 --> 07:53:10,340

the

4483

07:53:30,770 --> 07:53:15,898

but we will go very very slow so if you

4484

07:53:38,208 --> 07:53:34,810

and you started uh requesting time is uh

4485

07:53:48,948 --> 07:53:38,218

zero six to six

4486

07:53:54,110 --> 07:53:50,868

and he reminded me with your house how

4487

07:53:56,208 --> 07:53:54,120

do you like the weight of the Reaper Ed

4488

07:54:02,628 --> 07:53:56,218

right now

4489

07:54:02,638 --> 07:54:06,650

and we're still hot Mike correct uh

4490

07:54:06,660 --> 07:54:49,610

okay

4491

07:54:56,388 --> 07:54:51,410

foreign

4492

07:54:56,398 --> 07:55:08,410

go a little faster are you okay with it

4493

07:55:13,850 --> 07:55:11,750

and with repressurization having begun

4494

07:55:16,490 --> 07:55:13,860

our spacewalk clock for the day has

4495

07:55:19,190 --> 07:55:16,500

officially ended the spacewalk today

4496

07:55:21,888 --> 07:55:19,200

officially ended at 12 24 PM Central

4497

07:55:24,948 --> 07:55:21,898

Time the elapsed time for today's space

4498

07:55:26,930 --> 07:55:24,958

walk was 6 hours and 56 minutes

4499

07:55:28,490 --> 07:55:26,940

we're finishing up this repress just

4500

07:55:31,128 --> 07:55:28,500

want to say

4501
07:55:33,948 --> 07:55:31,138
congratulations to all the polka team

4502
07:55:35,388 --> 07:55:33,958
the bartolomeo team in particular I'd

4503
07:55:39,170 --> 07:55:35,398
like to

4504
07:55:41,090 --> 07:55:39,180
attention Dr single they talked for all

4505
07:55:43,368 --> 07:55:41,100
his work over the years I understand

4506
07:55:44,690 --> 07:55:43,378
he's retiring soon but it's also as a

4507
07:55:46,490 --> 07:55:44,700
chief engineer at part of the Mayo I

4508
07:55:49,208 --> 07:55:46,500
know we didn't get it completely done

4509
07:55:52,310 --> 07:55:49,218
but hats off to him and the entire team

4510
07:55:57,288 --> 07:55:52,320
for what we accomplished today so thank

4511
07:56:01,548 --> 07:56:00,170
hey we appreciate those words and the

4512
07:56:04,730 --> 07:56:01,558
whole team down here appreciates working

4513
07:56:07,730 --> 07:56:04,740

with you and both you and Ike put in a

4514

07:56:10,730 --> 07:56:07,740

lot of hard work to get all the tasks

4515

07:56:13,070 --> 07:56:10,740

done and Coca is working and as you said

4516

07:56:16,610 --> 07:56:13,080

we got most of bartolomeo as well so

4517

07:56:23,990 --> 07:56:19,730

that's fantastic thanks Andy thank you

4518

07:56:28,250 --> 07:56:26,330

some thoughtful words from Astronaut

4519

07:56:30,830 --> 07:56:28,260

Mike Hopkins and ground ivy Andy

4520

07:56:32,388 --> 07:56:30,840

mogensen reflecting on the hard work of

4521

07:56:43,920 --> 07:56:32,398

those on the ground whose support and

4522

07:56:43,930 --> 07:57:22,150

[Applause]

4523

07:57:38,990 --> 07:57:26,150

after a six hour and 56 minute spacewalk

4524

07:57:44,090 --> 07:57:41,330

just like during depressurization

4525

07:57:45,830 --> 07:57:44,100

earlier this morning there is a pause at

4526
07:57:48,468 --> 07:57:45,840
five pounds per square inch of pressure

4527
07:57:52,850 --> 07:57:48,478
as the astronauts conduct leak checks on

4528
07:57:56,868 --> 07:57:55,190
we're currently approaching two pounds

4529
07:58:15,048 --> 07:57:56,878
per square inch of pressure inside the

4530
07:58:21,110 --> 07:58:17,930
again today's spacewalk officially ended

4531
07:58:24,110 --> 07:58:21,120
at 12 24 PM Central Time and lasted a

4532
07:58:26,330 --> 07:58:24,120
total of 6 hours and 56 minutes

4533
07:58:28,850 --> 07:58:26,340
during that time today's space Walkers

4534
07:58:31,368 --> 07:58:28,860
of NASA astronauts Mike Hopkins and

4535
07:58:33,830 --> 07:58:31,378
Victor Glover removed the Coca or

4536
07:58:35,510 --> 07:58:33,840
Columbus Ka band antenna

4537
07:58:37,250 --> 07:58:35,520
out of the airlock and brought it with

4538
07:58:39,288 --> 07:58:37,260

them to the Columbus module

4539

07:58:41,330 --> 07:58:39,298

following this they removed bolts on

4540

07:58:42,948 --> 07:58:41,340

Columbus panels in order to install

4541

07:58:47,810 --> 07:58:42,958

kolka

4542

07:58:50,570 --> 07:58:47,820

secured it to the Columbus module

4543

07:58:53,150 --> 07:58:50,580

following Miss Glover routed coca cables

4544

07:58:54,770 --> 07:58:53,160

and we have received word that coca is

4545

07:58:57,048 --> 07:58:54,780

up and running

4546

07:58:58,730 --> 07:58:57,058

the duo then head to the bartolomeo

4547

07:59:01,010 --> 07:58:58,740

science platform and work to Route

4548

07:59:02,810 --> 07:59:01,020

cables to bartolomeo

4549

07:59:04,490 --> 07:59:02,820

for out of the six cables that have been

4550

07:59:06,530 --> 07:59:04,500

connected to bartolomeo appear to be

4551
07:59:08,868 --> 07:59:06,540
providing good electrical continuity and

4552
07:59:11,270 --> 07:59:08,878
power however the other two cables were

4553
07:59:14,090 --> 07:59:11,280
not able to be connected but are secured

4554
07:59:16,430 --> 07:59:14,100
via wire ties and temporarily capped off

4555
07:59:18,530 --> 07:59:16,440
the current bartolomeo configuration is

4556
07:59:20,090 --> 07:59:18,540
in a safe config and the teams will

4557
07:59:21,468 --> 07:59:20,100
continue to troubleshoot after today's

4558
07:59:23,388 --> 07:59:21,478
spacewalk

4559
07:59:25,730 --> 07:59:23,398
the crew then headed back to Columbus

4560
07:59:27,468 --> 07:59:25,740
and removed a cover-off of the kolka

4561
07:59:30,048 --> 07:59:27,478
which was installed to protect the

4562
07:59:31,670 --> 07:59:30,058
antenna during installation because the

4563
07:59:32,868 --> 07:59:31,680

cover was no longer needed it was

4564

07:59:34,910 --> 07:59:32,878

jettisoned

4565

07:59:38,030 --> 07:59:34,920

the final task of the day was to remove

4566

07:59:39,048 --> 07:59:38,040

but remove two H fixtures from the P6

4567

07:59:41,750 --> 07:59:39,058

truss

4568

07:59:44,150 --> 07:59:41,760

H fixtures are robotic interfaces that

4569

07:59:46,670 --> 07:59:44,160

were no longer needed before heading out

4570

07:59:48,708 --> 07:59:46,680

to the P6 Glover worked on a pit pin

4571

07:59:51,048 --> 07:59:48,718

replacement in the airlock as a get

4572

07:59:53,150 --> 07:59:51,058

ahead task however after the teams

4573

07:59:55,310 --> 07:59:53,160

evaluated the existing pit pin was

4574

07:59:57,110 --> 07:59:55,320

working they determined that they did

4575

07:59:59,030 --> 07:59:57,120

not need to replace it

4576
08:00:01,250 --> 07:59:59,040
following this the duo headed out to the

4577
08:00:03,770 --> 08:00:01,260
P6 truss where they removed four bolts

4578
08:00:06,350 --> 08:00:03,780
and worked to remove the H fixture from

4579
08:00:07,910 --> 08:00:06,360
the plate on the truss this now opens up

4580
08:00:15,350 --> 08:00:07,920
attached points that will be used for

4581
08:00:15,360 --> 08:00:19,930
foreign

4582
08:00:19,940 --> 08:00:50,448
to stabilize

4583
08:02:50,750 --> 08:01:42,410
foreign

4584
08:03:03,548 --> 08:02:52,910
Houston Station

4585
08:03:07,788 --> 08:03:06,230
station Houston copies the pressures

4586
08:03:15,010 --> 08:03:07,798
that's a good lead check you're going to

4587
08:03:20,690 --> 08:03:18,350
okay if you want you to check switch

4588
08:03:23,388 --> 08:03:20,700

glove heaters off

4589

08:03:27,590 --> 08:03:25,310

offs

4590

08:03:30,888 --> 08:03:27,600

EBT rsf

4591

08:03:34,368 --> 08:03:30,898

check grounds for contamination

4592

08:03:38,570 --> 08:03:34,378

before to Houston you press confirmation

4593

08:03:42,110 --> 08:03:38,580

pby-1 milk contamination TV2 done

4594

08:03:44,930 --> 08:03:42,120

copy and there's a voting and secretary

4595

08:03:46,570 --> 08:03:44,940

applies and I believe today is none

4596

08:03:53,330 --> 08:03:46,580

so uh

4597

08:03:53,340 --> 08:03:59,150

and work

4598

08:04:04,850 --> 08:04:01,190

if you want ivy

4599

08:04:06,708 --> 08:04:04,860

dv2 heavy copy all right if you don't

4600

08:04:08,448 --> 08:04:06,718

need it to uh we're gonna restart uh

4601
08:04:10,788 --> 08:04:08,458
repressing so why do you have the

4602
08:04:31,548 --> 08:04:10,798
equalization coming too long so you guys

4603
08:04:36,888 --> 08:04:33,830
good leak checks at five pound per

4604
08:04:41,230 --> 08:04:36,898
square inch of pressure as re press

4605
08:04:46,310 --> 08:04:43,490
repressurization will continue all the

4606
08:04:48,230 --> 08:04:46,320
way up to about 14.6 pounds per square

4607
08:04:50,810 --> 08:04:48,240
inch which is the nominal pressure at

4608
08:04:52,788 --> 08:04:50,820
which the station is pressurized at this

4609
08:04:54,770 --> 08:04:52,798
point the hatch will be open and crew

4610
08:04:56,570 --> 08:04:54,780
members will be brought in to the

4611
08:05:06,970 --> 08:04:56,580
equipment lock where they'll doff their

4612
08:05:06,980 --> 08:05:35,448
[Applause]

4613
08:05:35,458 --> 08:06:05,750

thank you

4614

08:06:55,990 --> 08:06:34,788

foreign

4615

08:06:56,000 --> 08:07:05,930

[Applause]

4616

08:08:02,750 --> 08:07:08,710

[Music]

4617

08:08:02,760 --> 08:08:06,910

uh

4618

08:08:15,650 --> 08:08:10,310

Houston copies and concurs we see you in

4619

08:08:31,670 --> 08:08:25,570

.

4620

08:08:33,110 --> 08:08:31,680

we're gonna open the IV hatch Pro decal

4621

08:08:43,090 --> 08:08:33,120

so stand back

4622

08:08:48,048 --> 08:08:45,410

[Music]

4623

08:08:50,570 --> 08:08:48,058

Japanese Aerospace Exploration agencies

4624

08:08:55,490 --> 08:08:50,580

so Ouiji naguchi in the red is now

4625

08:09:00,230 --> 08:08:57,590

standing by to assist is NASA astronaut

4626
08:09:02,690 --> 08:09:00,240
Kate Rubens once the hat is opened

4627
08:09:04,610 --> 08:09:02,700
Victor Glover and Mike Hopkins will be

4628
08:09:06,110 --> 08:09:04,620
brought through the hatch they'll have

4629
08:09:09,288 --> 08:09:06,120
their safers removed and then they'll

4630
08:09:09,298 --> 08:09:23,230
foreign

4631
08:09:23,240 --> 08:09:51,830
[Music]

4632
08:09:51,840 --> 08:10:04,060
everyone

4633
08:10:24,788 --> 08:10:19,470
[Music]

4634
08:10:27,110 --> 08:10:24,798
[Applause]

4635
08:10:30,170 --> 08:10:27,120
coming through the hatch first today

4636
08:10:32,090 --> 08:10:30,180
NASA astronaut Victor Glover my Hopkins

4637
08:10:35,330 --> 08:10:32,100
followed behind him

4638
08:10:37,250 --> 08:10:35,340

to take care of a step forward

4639

08:10:45,110 --> 08:10:37,260

station Houston step four is in work

4640

08:11:10,150 --> 08:10:46,910

sorry you can continue but we're working

4641

08:11:16,368 --> 08:11:13,010

with the completion of today's spacewalk

4642

08:11:19,548 --> 08:11:16,378

we have some updated statistics

4643

08:11:23,270 --> 08:11:19,558

this was the 233rd spacewalk in support

4644

08:11:26,448 --> 08:11:23,280

of ISS assembly mates and upgrades

4645

08:11:29,448 --> 08:11:26,458

this is the first spacewalk of 2021 and

4646

08:11:31,670 --> 08:11:29,458

the second spacewalk of expedition 64.

4647

08:11:34,010 --> 08:11:31,680

this was the third spacewalk of Hopkins

4648

08:11:36,708 --> 08:11:34,020

career his total spacewalking time now

4649

08:11:39,230 --> 08:11:36,718

19 hours and 54 minutes

4650

08:11:41,510 --> 08:11:39,240

this was the first spacewalk of Victor

4651
08:11:44,330 --> 08:11:41,520
Glover's career his Total Space walking

4652
08:11:46,910 --> 08:11:44,340
time now six hours and 56 minutes

4653
08:11:48,830 --> 08:11:46,920
today's space walk lasted a total of six

4654
08:11:50,570 --> 08:11:48,840
hours and 56 minutes

4655
08:11:53,030 --> 08:11:50,580
and it brings the total space walking

4656
08:11:55,548 --> 08:11:53,040
time on the International Space Station

4657
08:11:58,910 --> 08:11:55,558
to 61 hours

4658
08:12:22,990 --> 08:11:58,920
61 days 1 hour and 47 minutes of total

4659
08:12:30,788 --> 08:12:25,490
station Houston Space round one step

4660
08:12:36,708 --> 08:12:34,548
Glover safer has now been removed as a

4661
08:12:39,048 --> 08:12:36,718
reminder safer stands for simplified aid

4662
08:12:41,270 --> 08:12:39,058
for Eva rescue

4663
08:12:43,250 --> 08:12:41,280

this is essentially a space jet pack

4664

08:12:45,410 --> 08:12:43,260

that the crew member would use in an

4665

08:12:47,990 --> 08:12:45,420

emergency situation if they were to

4666

08:12:53,090 --> 08:12:48,000

become detached from the space station

4667

08:12:53,100 --> 08:14:53,948

all right coffee thank you

4668

08:16:06,730 --> 08:14:56,868

Mike Hopkins safer jet pack has now been

4669

08:16:12,170 --> 08:16:10,368

the 233rd spacewalk in support of

4670

08:16:14,750 --> 08:16:12,180

station assembly maintenance and

4671

08:16:19,308 --> 08:16:14,760

upgrades is now complete the spacewalk

4672

08:16:21,708 --> 08:16:19,318

lasted a total of 6 hours and 56 minutes

4673

08:16:24,288 --> 08:16:21,718

during today's spacewalk NASA astronauts

4674

08:16:27,110 --> 08:16:24,298

Mike Hopkins and Victor Glover

4675

08:16:29,090 --> 08:16:27,120

took the Coca or Columbus Ka band

4676
08:16:33,590 --> 08:16:29,100
antenna out of the airlock and brought

4677
08:16:39,110 --> 08:16:36,530
following this bolts on the Columbus

4678
08:16:40,850 --> 08:16:39,120
module panels were removed in order to

4679
08:16:43,128 --> 08:16:40,860
install the kolka

4680
08:16:48,288 --> 08:16:43,138
polka was then installed and secured to

4681
08:16:52,368 --> 08:16:50,270
following this Glover worked to Route

4682
08:16:56,388 --> 08:16:52,378
kolka cables and we did receive word

4683
08:17:00,830 --> 08:16:59,208
the duo then headed to the bartolomeo

4684
08:17:02,628 --> 08:17:00,840
science platform and worked to Route

4685
08:17:05,150 --> 08:17:02,638
cables to bartolomeo

4686
08:17:06,948 --> 08:17:05,160
four out of the six cables have been

4687
08:17:09,230 --> 08:17:06,958
connected to bartolent mail and appear

4688
08:17:11,448 --> 08:17:09,240

to be working in good electrical order

4689

08:17:13,968 --> 08:17:11,458

however the other two cables were not

4690

08:17:19,610 --> 08:17:13,978

able to be connected but are secured via

4691

08:17:24,288 --> 08:17:22,128

the current bartolometer bartolomeo

4692

08:17:25,850 --> 08:17:24,298

configuration is in a safe configuration

4693

08:17:29,030 --> 08:17:25,860

and the teams will continue to

4694

08:17:31,128 --> 08:17:29,040

troubleshoot after today's spacewalk

4695

08:17:33,110 --> 08:17:31,138

following this the crew headed back to

4696

08:17:35,330 --> 08:17:33,120

Columbus and removed a cover off of the

4697

08:17:37,910 --> 08:17:35,340

kolka which was installed to protect the

4698

08:17:39,708 --> 08:17:37,920

antenna during installation because the

4699

08:17:42,350 --> 08:17:39,718

cover was no longer needed it was then

4700

08:17:44,690 --> 08:17:42,360

jettisoned

4701
08:17:48,830 --> 08:17:44,700
the final task of the day was to remove

4702
08:17:51,048 --> 08:17:48,840
a two H fixtures from the P6 truss H

4703
08:17:53,330 --> 08:17:51,058
fixtures are robotic interfaces that are

4704
08:17:55,430 --> 08:17:53,340
no longer needed before heading out to

4705
08:17:57,288 --> 08:17:55,440
P6 Glover worked on a pip pin

4706
08:17:59,628 --> 08:17:57,298
replacement in the airlock as a get

4707
08:18:01,730 --> 08:17:59,638
ahead task however after the team

4708
08:18:03,610 --> 08:18:01,740
evaluated the existing pin and

4709
08:18:06,770 --> 08:18:03,620
determined it was in working condition

4710
08:18:08,388 --> 08:18:06,780
they decided that the get ahead task was

4711
08:18:10,128 --> 08:18:08,398
no longer needed and the pin did not

4712
08:18:12,288 --> 08:18:10,138
need to be replaced

4713
08:18:14,690 --> 08:18:12,298

following this the duo headed out to the

4714

08:18:16,610 --> 08:18:14,700

P6 truss where they each removed four

4715

08:18:19,250 --> 08:18:16,620

bolts and worked to remove the H

4716

08:18:22,010 --> 08:18:19,260

fixtures from their plates on the truss

4717

08:18:24,048 --> 08:18:22,020

this now opens up four attach points

4718

08:19:00,490 --> 08:18:24,058

that will be used for future solar array

4719

08:19:05,990 --> 08:19:03,288

NASA astronaut Kate Rubens on the right

4720

08:19:08,750 --> 08:19:06,000

working to help Mike Hopkins remove his

4721

08:19:10,670 --> 08:19:08,760

spacesuit while suichi naguchi on the

4722

08:20:33,850 --> 08:19:10,680

left in the red Works to remove Victor

4723

08:20:33,860 --> 08:20:37,850

let me hear it

4724

08:20:42,708 --> 08:20:40,670

Kate Rubens and suichi naguchi now

4725

08:21:50,650 --> 08:20:42,718

working to remove the spacewalker's

4726
08:22:05,350 --> 08:21:53,990
station Houston spaced around one for

4727
08:22:10,010 --> 08:22:08,030
both spacewalkers now have their gloves

4728
08:22:12,530 --> 08:22:10,020
removed next up we'll look to have their

4729
08:22:16,250 --> 08:22:12,540
helmets removed

4730
08:22:19,128 --> 08:22:16,260
when you get down to step 36 uh in

4731
08:22:21,530 --> 08:22:19,138
particular for Hopper or Ike's com cap

4732
08:22:23,990 --> 08:22:21,540
if you guys could please inspect the

4733
08:22:25,788 --> 08:22:24,000
embeds and also potentially take

4734
08:22:29,150 --> 08:22:25,798
pictures of the embeds just because they

4735
08:22:31,128 --> 08:22:29,160
have started having that uh loss of of

4736
08:22:32,628 --> 08:22:31,138
hearing in the uh one of the sides of

4737
08:22:33,948 --> 08:22:32,638
the Comm cap so if you could check that

4738
08:22:39,530 --> 08:22:33,958

out for our student and stuff and maybe

4739

08:22:48,048 --> 08:22:41,808

except 36 you would take a closer photo

4740

08:23:02,410 --> 08:22:51,350

I just want to do the uh this helmet one

4741

08:23:08,448 --> 08:23:05,930

today's six hour and 56 minute Space

4742

08:23:11,090 --> 08:23:08,458

Walk is now complete this was the first

4743

08:23:14,510 --> 08:23:11,100

spacewalk of 2021 and the second of

4744

08:23:16,190 --> 08:23:14,520

expedition 64. this was again the first

4745

08:23:18,110 --> 08:23:16,200

spacewalk for Victor Glover and the

4746

08:23:20,270 --> 08:23:18,120

third for Mike Hopkins

4747

08:23:22,010 --> 08:23:20,280

the duo will head back outside the

4748

08:23:24,350 --> 08:23:22,020

station's hatch on Monday to complete

4749

08:23:26,570 --> 08:23:24,360

additional upgrades to the space station

4750

08:24:37,430 --> 08:23:26,580

you can tune in live coverage begins at

4751

08:24:42,410 --> 08:24:39,350

come here

4752

08:24:45,410 --> 08:24:42,420

so stay tuned

4753

08:24:47,388 --> 08:24:45,420

with both astronauts now back inside the

4754

08:24:50,690 --> 08:24:47,398

equipment portion of the quest airlock

4755

08:24:53,330 --> 08:24:50,700

that wraps up our 6 hour and 56 minute

4756

08:24:55,128 --> 08:24:53,340

long spacewalk for today that will

4757

08:24:57,288 --> 08:24:55,138

conclude our coverage thanks for

4758

08:25:22,190 --> 08:24:57,298

watching signing off for now this is