



1
00:00:04,309 --> 00:00:02,550
good day from mission control in houston

2
00:00:05,829 --> 00:00:04,319
and welcome to the international space

3
00:00:08,150 --> 00:00:05,839
station flight control room here at the

4
00:00:11,910 --> 00:00:08,160
johnson space center in houston and our

5
00:00:13,910 --> 00:00:11,920
coverage of u.s spacewalk number 74 to

6
00:00:15,509 --> 00:00:13,920
be conducted by shane kimbrough and

7
00:00:17,510 --> 00:00:15,519
thomas pesquet

8
00:00:20,550 --> 00:00:17,520
a spacewalk that will begin the process

9
00:00:22,950 --> 00:00:20,560
of augmenting the power capability of

10
00:00:25,269 --> 00:00:22,960
the international outpost

11
00:00:27,830 --> 00:00:25,279
at this hour aboard the international

12
00:00:30,070 --> 00:00:27,840
space station in the quest airlock you

13
00:00:32,709 --> 00:00:30,080

see with his back to the camera russian

14

00:00:35,350 --> 00:00:32,719

cosmonaut oleg novitskiy and on the left

15

00:00:37,510 --> 00:00:35,360

nasa astronaut megan mcarthur as they

16

00:00:40,150 --> 00:00:37,520

have worked throughout the course of the

17

00:00:42,150 --> 00:00:40,160

overnight hours to help prepare uh

18

00:00:43,990 --> 00:00:42,160

thomas pesquet of the european space

19

00:00:45,910 --> 00:00:44,000

agency who's on the right side of your

20

00:00:48,069 --> 00:00:45,920

screen and hidden from view at the

21

00:00:50,310 --> 00:00:48,079

moment shane kimbrough on the left side

22

00:00:52,950 --> 00:00:50,320

of your screen helping them to suit up

23

00:00:55,110 --> 00:00:52,960

in their u.s extravehicular mobility

24

00:00:57,270 --> 00:00:55,120

units they are in the equipment lock

25

00:00:59,830 --> 00:00:57,280

section of the two compartment quest

26
00:01:01,510 --> 00:00:59,840
airlock ready to begin what is expected

27
00:01:04,549 --> 00:01:01,520
to be a six and a half to seven hour

28
00:01:07,270 --> 00:01:04,559
spacewalk to install new solar arrays

29
00:01:09,190 --> 00:01:07,280
called irosas you'll hear that term

30
00:01:12,630 --> 00:01:09,200
referred to throughout the course of our

31
00:01:16,070 --> 00:01:12,640
coverage today irosa the acronym for iss

32
00:01:19,109 --> 00:01:16,080
rollout solar arrays these new arrays

33
00:01:21,190 --> 00:01:19,119
are designed not to replace the legacy

34
00:01:23,270 --> 00:01:21,200
or older solar array wings on the

35
00:01:26,070 --> 00:01:23,280
station but rather augment their power

36
00:01:29,030 --> 00:01:26,080
capability for the rest of the lifetime

37
00:01:31,830 --> 00:01:29,040
of the international space station

38
00:01:35,190 --> 00:01:31,840

today's spacewalk will be the 239th

39

00:01:37,590 --> 00:01:35,200

spacewalk in uh support of iss assembly

40

00:01:39,350 --> 00:01:37,600

maintenance and upgrades the seventh

41

00:01:41,830 --> 00:01:39,360

spacewalk to be conducted out of the

42

00:01:44,069 --> 00:01:41,840

international space station this year

43

00:01:46,550 --> 00:01:44,079

the seventh spacewalk in the career of

44

00:01:49,670 --> 00:01:46,560

shane kimbrough who has accrued a total

45

00:01:52,469 --> 00:01:49,680

of 39 hours even on six previous

46

00:01:55,830 --> 00:01:52,479

spacewalks he will be wearing a helmet

47

00:01:58,230 --> 00:01:55,840

camera bearing the number 22 during the

48

00:01:59,910 --> 00:01:58,240

course of today's spacewalk helmet

49

00:02:02,069 --> 00:01:59,920

camera number 22

50

00:02:04,550 --> 00:02:02,079

and this will be the third spacewalk in

51
00:02:06,230 --> 00:02:04,560
the career of tomah pesquet a former air

52
00:02:08,550 --> 00:02:06,240
france pilot

53
00:02:10,949 --> 00:02:08,560
who is with the european space agency

54
00:02:13,430 --> 00:02:10,959
making his second flight into space

55
00:02:16,550 --> 00:02:13,440
his uh two previous spacewalks accrued a

56
00:02:18,390 --> 00:02:16,560
total of 12 hours and 32 minutes of

57
00:02:21,350 --> 00:02:18,400
spacewalking time he'll be wearing a

58
00:02:24,470 --> 00:02:21,360
helmet camera bearing the number 20

59
00:02:26,229 --> 00:02:24,480
during today's spacewalk the two crew

60
00:02:29,350 --> 00:02:26,239
members will also

61
00:02:31,270 --> 00:02:29,360
be wearing hd helmet cameras as well as

62
00:02:33,430 --> 00:02:31,280
the standard helmet cameras that you

63
00:02:36,309 --> 00:02:33,440

have become familiar with over the

64

00:02:39,110 --> 00:02:36,319

course of spacewalking coverage that

65

00:02:41,270 --> 00:02:39,120

will provide more detailed looks

66

00:02:44,070 --> 00:02:41,280

from the crew members perspective as

67

00:02:47,430 --> 00:02:44,080

they conduct all of their activities in

68

00:02:49,589 --> 00:02:47,440

support of today's spacewalk

69

00:02:51,990 --> 00:02:49,599

the orbit one team of flight controllers

70

00:02:54,949 --> 00:02:52,000

is on console at this hour as you look

71

00:02:56,710 --> 00:02:54,959

at an overhead view looking at

72

00:02:58,070 --> 00:02:56,720

shane kimbrough

73

00:03:01,910 --> 00:02:58,080

who is again

74

00:03:04,149 --> 00:03:01,920

on the left side of the quest airlocks

75

00:03:06,229 --> 00:03:04,159

equipment lock section

76

00:03:08,070 --> 00:03:06,239

just over the shoulder of tomah pesquet

77

00:03:10,390 --> 00:03:08,080

who's on the right side of your screen

78

00:03:11,270 --> 00:03:10,400

lower right hand side of your screen

79

00:03:13,270 --> 00:03:11,280

they

80

00:03:16,070 --> 00:03:13,280

suited up with the assistance of mark

81

00:03:19,110 --> 00:03:16,080

vande nasa astronaut and megan mcarthur

82

00:03:22,790 --> 00:03:19,120

earlier in the morning the megan

83

00:03:25,190 --> 00:03:22,800

mcarthur will be operating the canadarm2

84

00:03:28,149 --> 00:03:25,200

the space station's robotic arm to

85

00:03:29,910 --> 00:03:28,159

transport tomah pesquet who will haul

86

00:03:33,670 --> 00:03:29,920

these new uh

87

00:03:36,229 --> 00:03:33,680

this first set of irosa solar arrays

88

00:03:38,869 --> 00:03:36,239

toward the work site on the far left

89

00:03:41,750 --> 00:03:38,879

side of the truss of the international

90

00:03:43,990 --> 00:03:41,760

space station today's work site

91

00:03:46,550 --> 00:03:44,000

will be managed by flight director ron

92

00:03:48,949 --> 00:03:46,560

spencer and you'll be hearing the voice

93

00:03:51,190 --> 00:03:48,959

of canadian space agency astronaut jenny

94

00:03:52,229 --> 00:03:51,200

seidi who will be the so-called ground

95

00:03:54,309 --> 00:03:52,239

iv

96

00:03:56,710 --> 00:03:54,319

capcom or

97

00:03:57,910 --> 00:03:56,720

essentially the spacewalk choreographer

98

00:04:00,470 --> 00:03:57,920

who will be

99

00:04:03,030 --> 00:04:00,480

discussing all of the procedures step by

100

00:04:05,670 --> 00:04:03,040

step with pesquet and kimbrough while

101
00:04:08,630 --> 00:04:05,680
they conduct their work outside of the

102
00:04:11,110 --> 00:04:08,640
quest airlock the crew

103
00:04:12,869 --> 00:04:11,120
inside the quest's equipment lock has

104
00:04:15,509 --> 00:04:12,879
been breathing pure oxygen and

105
00:04:19,909 --> 00:04:15,519
conducting light exercise to increase

106
00:04:22,469 --> 00:04:19,919
their metabolic rate and increase the

107
00:04:25,270 --> 00:04:22,479
the dispersion of nitrogen out of their

108
00:04:27,110 --> 00:04:25,280
blood streams to prevent any condition

109
00:04:29,110 --> 00:04:27,120
known as the benz or decompression

110
00:04:31,590 --> 00:04:29,120
sickness from occurring when they step

111
00:04:33,990 --> 00:04:31,600
out into the vacuum of space today's

112
00:04:36,550 --> 00:04:34,000
spacewalk is scheduled to begin about an

113
00:04:39,749 --> 00:04:36,560

hour and a half from now at 7 a.m

114

00:04:42,070 --> 00:04:39,759

central time 8 a.m eastern time a u.s

115

00:04:43,670 --> 00:04:42,080

based spacewalk out of the quest airlock

116

00:04:45,590 --> 00:04:43,680

is measured

117

00:04:46,550 --> 00:04:45,600

at the beginning from the time that the

118

00:04:49,030 --> 00:04:46,560

crew

119

00:04:52,230 --> 00:04:49,040

switches their suits to internal battery

120

00:04:54,310 --> 00:04:52,240

power until the time of repressurization

121

00:05:02,790 --> 00:04:54,320

when they're back inside the airlock at

122

00:05:11,189 --> 00:05:03,670

the

123

00:05:13,670 --> 00:05:11,199

international space station just a week

124

00:05:15,909 --> 00:05:13,680

and a half ago with the arrival of the

125

00:05:18,550 --> 00:05:15,919

spacex cargo dragon vehicle that

126
00:05:20,950 --> 00:05:18,560
launched on a falcon 9 rocket from the

127
00:05:23,430 --> 00:05:20,960
kennedy space center in florida

128
00:05:25,990 --> 00:05:23,440
these uh roll out solar arrays again do

129
00:05:28,469 --> 00:05:26,000
not replace the current

130
00:05:31,749 --> 00:05:28,479
sets of solar arrays but rather augment

131
00:05:33,590 --> 00:05:31,759
the power capability of the solar arrays

132
00:05:35,430 --> 00:05:33,600
the irosas

133
00:05:37,510 --> 00:05:35,440
basically are an innovative new solar

134
00:05:40,550 --> 00:05:37,520
array design that uses high strain one

135
00:05:43,029 --> 00:05:40,560
piece carbon fiber composite booms

136
00:05:44,390 --> 00:05:43,039
the stored energy of the booms as

137
00:05:46,310 --> 00:05:44,400
they're rolled up

138
00:05:48,950 --> 00:05:46,320

provides the actuation for their

139

00:05:51,909 --> 00:05:48,960

deployment once a series of bolts are

140

00:05:53,830 --> 00:05:51,919

released by the two space walkers during

141

00:05:55,830 --> 00:05:53,840

the course of the spacewalk

142

00:05:57,909 --> 00:05:55,840

once deployed the booms will provide the

143

00:05:59,430 --> 00:05:57,919

arrays structural stiffness and strength

144

00:06:02,629 --> 00:05:59,440

once they're tensioned

145

00:06:04,710 --> 00:06:02,639

and will roll out to a length of about

146

00:06:07,270 --> 00:06:04,720

60 feet

147

00:06:09,749 --> 00:06:07,280

to augment they'll be sitting adjacent

148

00:06:12,870 --> 00:06:09,759

to the current arrays on the p6 truss

149

00:06:14,550 --> 00:06:12,880

the far port truss of the international

150

00:06:16,550 --> 00:06:14,560

space station

151
00:06:19,990 --> 00:06:16,560
the two crew members will be working out

152
00:06:21,990 --> 00:06:20,000
at the p6 truss this was the first truss

153
00:06:23,830 --> 00:06:22,000
segment and the first set of solar

154
00:06:26,150 --> 00:06:23,840
arrays that were delivered to the

155
00:06:28,150 --> 00:06:26,160
international space station aboard the

156
00:06:31,350 --> 00:06:28,160
space shuttle endeavour in december of

157
00:06:34,790 --> 00:06:31,360
2000 on the sts-97 mission that was

158
00:06:37,270 --> 00:06:34,800
commanded by former astronaut brent jett

159
00:06:40,790 --> 00:06:37,280
in the forthcoming months

160
00:06:43,670 --> 00:06:40,800
two additional pairs of

161
00:06:46,230 --> 00:06:43,680
irosa solar arrays will be delivered the

162
00:06:49,589 --> 00:06:46,240
next pair will be installed on the p4

163
00:06:51,990 --> 00:06:49,599

and s4 starboard 4 truss of the station

164

00:06:54,629 --> 00:06:52,000

and the final pair will be deployed on

165

00:06:56,469 --> 00:06:54,639

the s or starboard 6 truss and the

166

00:06:59,110 --> 00:06:56,479

starboard 4 truss

167

00:07:01,589 --> 00:06:59,120

six of the eight power channels

168

00:07:03,990 --> 00:07:01,599

for the international space station will

169

00:07:09,110 --> 00:07:04,000

have their power augmented

170

00:07:29,510 --> 00:07:10,309

the

171

00:07:32,710 --> 00:07:29,520

arrays have 32 800 solar cells total

172

00:07:36,629 --> 00:07:32,720

assembled into 164 solar panels the

173

00:07:41,749 --> 00:07:39,430

designed and deployed in space to

174

00:07:42,870 --> 00:07:41,759

convert solar energy into electrical

175

00:07:47,510 --> 00:07:42,880

power

176
00:07:48,950 --> 00:07:47,520
each solar array wing at the beginning

177
00:07:53,029 --> 00:07:48,960
of its lifetime

178
00:07:55,189 --> 00:07:53,039
was 31 kilowatts for a total of some 248

179
00:07:57,990 --> 00:07:55,199
kilowatts of total power

180
00:07:58,869 --> 00:07:58,000
these new solar arrays the iroses that

181
00:08:01,430 --> 00:07:58,879
will

182
00:08:04,469 --> 00:08:01,440
be installed for six of the eight power

183
00:08:07,270 --> 00:08:04,479
channels are designed

184
00:08:10,550 --> 00:08:07,280
to provide an additional 20 kilowatts of

185
00:08:13,189 --> 00:08:10,560
electricity eventually totaling some 120

186
00:08:15,830 --> 00:08:13,199
kilowatts in all of augmented power

187
00:08:18,309 --> 00:08:15,840
during orbital daytime in addition the

188
00:08:20,629 --> 00:08:18,319

remaining uncovered solar array pair and

189

00:08:23,270 --> 00:08:20,639

partially uncovered original arrays will

190

00:08:26,869 --> 00:08:23,280

continue to generate some 95 kilowatts

191

00:08:29,110 --> 00:08:26,879

of power for a total of some 215

192

00:08:31,189 --> 00:08:29,120

kilowatts of power for the rest of the

193

00:08:33,829 --> 00:08:31,199

lifetime of the international space

194

00:08:35,990 --> 00:08:33,839

station this will accommodate more

195

00:08:39,990 --> 00:08:36,000

modules to be launched to the

196

00:08:42,550 --> 00:08:40,000

international outpost and to provide the

197

00:08:44,790 --> 00:08:42,560

augmented power to the six power

198

00:08:47,110 --> 00:08:44,800

channels that have uh through

199

00:08:49,269 --> 00:08:47,120

normal wear and tear over more than two

200

00:08:53,030 --> 00:08:49,279

decades of use have seen some

201
00:08:54,949 --> 00:08:53,040
degradation in power output this will

202
00:08:58,070 --> 00:08:54,959
bring the international space station

203
00:09:01,030 --> 00:08:58,080
back to an even more robust power

204
00:09:13,670 --> 00:09:01,040
capability than the original arrays were

205
00:09:17,990 --> 00:09:15,829
kimbrough and pesquet

206
00:09:19,910 --> 00:09:18,000
interestingly enough conducted a pair of

207
00:09:23,030 --> 00:09:19,920
spacewalks together

208
00:09:26,630 --> 00:09:23,040
several years ago during expedition 50

209
00:09:27,509 --> 00:09:26,640
the first on january 13th 2017 where

210
00:09:31,269 --> 00:09:27,519
they

211
00:09:33,590 --> 00:09:31,279
worked on the most recently completed

212
00:09:35,670 --> 00:09:33,600
set of battery replacements where nickel

213
00:09:37,670 --> 00:09:35,680

hydrogen batteries were replaced by

214

00:09:40,630 --> 00:09:37,680

lithium-ion batteries on the

215

00:09:42,949 --> 00:09:40,640

international space station they also

216

00:09:45,509 --> 00:09:42,959

worked a couple of months later during

217

00:09:49,190 --> 00:09:45,519

expedition 50 going outside together on

218

00:09:51,910 --> 00:09:49,200

march 24 2017 to lubricate the latching

219

00:09:54,630 --> 00:09:51,920

end effector at the end of the canadarm2

220

00:09:56,389 --> 00:09:54,640

and to prepare the zenith port on the

221

00:09:59,269 --> 00:09:56,399

harmony module of the international

222

00:10:01,670 --> 00:09:59,279

space station for the installation later

223

00:10:04,710 --> 00:10:01,680

on of the second of the two

224

00:10:07,509 --> 00:10:04,720

international docking adapters that are

225

00:10:09,670 --> 00:10:07,519

now used for commercial crew vehicles

226

00:10:12,069 --> 00:10:09,680

arriving at the international space

227

00:10:14,150 --> 00:10:12,079

station so they are familiar with each

228

00:10:16,470 --> 00:10:14,160

other they have their choreography

229

00:10:17,670 --> 00:10:16,480

packed and they're ready to go outside

230

00:10:19,910 --> 00:10:17,680

once again

231

00:10:21,829 --> 00:10:19,920

to begin their third spacewalk together

232

00:10:24,230 --> 00:10:21,839

the 239th

233

00:10:42,710 --> 00:10:24,240

in the history of space station assembly

234

00:10:47,030 --> 00:10:44,550

the clocks up on the wall here in

235

00:10:49,990 --> 00:10:47,040

mission control counting backward

236

00:10:51,269 --> 00:10:50,000

for a go for the depressurization

237

00:10:52,790 --> 00:10:51,279

of the

238

00:10:55,269 --> 00:10:52,800

quest airlock

239

00:10:57,110 --> 00:10:55,279

before long you see in this view mark

240

00:10:58,949 --> 00:10:57,120

vandehein nasa astronaut on the right

241

00:11:02,150 --> 00:10:58,959

side of your screen megan mcarthur is on

242

00:11:04,870 --> 00:11:02,160

the left you'll see them attach

243

00:11:07,590 --> 00:11:04,880

jet powered backpacks to the two space

244

00:11:10,069 --> 00:11:07,600

walkers extra vehicular mobility units

245

00:11:13,269 --> 00:11:10,079

they're called safers that's the acronym

246

00:11:15,030 --> 00:11:13,279

for simplified aid for eva rescue those

247

00:11:17,190 --> 00:11:15,040

of the jet powered backpacks that would

248

00:11:18,870 --> 00:11:17,200

be used in the highly unlikely event

249

00:11:20,230 --> 00:11:18,880

either of the crew members would become

250

00:11:22,790 --> 00:11:20,240

detached

251
00:11:24,870 --> 00:11:22,800
from the tethers that hold them in place

252
00:11:27,269 --> 00:11:24,880
as they go about their work on the

253
00:11:30,230 --> 00:11:27,279
outside of the quest airlock

254
00:11:32,389 --> 00:11:30,240
they then one by one will be moved into

255
00:11:34,150 --> 00:11:32,399
the outermost compartment of the two

256
00:11:36,470 --> 00:11:34,160
compartment quest airlock called the

257
00:11:38,550 --> 00:11:36,480
crew lock that you see vanda high

258
00:11:40,550 --> 00:11:38,560
at the threshold of

259
00:11:43,110 --> 00:11:40,560
that then will be followed by the

260
00:11:45,269 --> 00:11:43,120
closing of that hatch the two space

261
00:11:46,069 --> 00:11:45,279
walkers will hook themselves up

262
00:11:48,790 --> 00:11:46,079
to

263
00:11:50,550 --> 00:11:48,800

umbilicals inside the crew lock and

264

00:11:52,389 --> 00:11:50,560

await the green light while the

265

00:11:55,269 --> 00:11:52,399

depressurization of the crew lock

266

00:11:57,590 --> 00:11:55,279

section brings it down to vacuum as the

267

00:11:59,590 --> 00:11:57,600

precursor to their placing their suits

268

00:12:19,990 --> 00:11:59,600

on battery power to mark the official

269

00:12:24,790 --> 00:12:22,389

today's spacewalk uh is the first of two

270

00:12:27,590 --> 00:12:24,800

in the next four days by pesquet and

271

00:12:28,870 --> 00:12:27,600

kimbrough they'll go outside once again

272

00:12:40,790 --> 00:12:28,880

on

273

00:12:44,710 --> 00:12:40,800

week and a half ago

274

00:12:47,030 --> 00:12:44,720

this first of the two irosa arrays

275

00:12:49,190 --> 00:12:47,040

will be installed to service the

276

00:12:51,190 --> 00:12:49,200

so-called 2b

277

00:12:53,430 --> 00:12:51,200

channel of the p6 truss of the

278

00:12:56,389 --> 00:12:53,440

international space station the work

279

00:13:00,069 --> 00:12:56,399

that they will conduct on sunday will be

280

00:13:02,310 --> 00:13:00,079

the installation of the 4b power channel

281

00:13:05,509 --> 00:13:02,320

arrays and you can see in this graphic

282

00:13:07,190 --> 00:13:05,519

uh how the iss rollout solar array these

283

00:13:09,670 --> 00:13:07,200

new arrays

284

00:13:12,629 --> 00:13:09,680

look like when they're deployed adjacent

285

00:13:14,629 --> 00:13:12,639

to the legacy arrays which are about

286

00:13:15,670 --> 00:13:14,639

twice as long

287

00:13:17,829 --> 00:13:15,680

as the

288

00:13:20,470 --> 00:13:17,839

new arrays and again these are not

289

00:13:22,550 --> 00:13:20,480

designed to replace the older arrays but

290

00:13:24,550 --> 00:13:22,560

rather to augment the power

291

00:13:26,949 --> 00:13:24,560

generation for the international space

292

00:13:29,670 --> 00:13:26,959

station today's work will concentrate on

293

00:13:30,550 --> 00:13:29,680

the array to be installed on the 2b

294

00:13:32,550 --> 00:13:30,560

channel

295

00:13:34,790 --> 00:13:32,560

for the international space station it's

296

00:13:38,069 --> 00:13:34,800

intricate work that involves a lot of

297

00:13:39,269 --> 00:13:38,079

loosening of bolts and a lot of uh work

298

00:13:40,470 --> 00:13:39,279

with power

299

00:13:42,389 --> 00:13:40,480

tools

300

00:13:44,949 --> 00:13:42,399

high-tech space

301
00:13:47,350 --> 00:13:44,959
power tools that the crew will have at

302
00:13:49,430 --> 00:13:47,360
their disposal we have about a seven

303
00:13:52,470 --> 00:13:49,440
minute animation narrated by the lead

304
00:13:55,829 --> 00:13:52,480
spacewalk officer for today's eva keith

305
00:13:58,069 --> 00:13:55,839
johnson in which he describes in detail

306
00:13:59,910 --> 00:13:58,079
what pesky and kimbrough will be doing

307
00:14:02,550 --> 00:13:59,920
once they move outside of the quest

308
00:14:05,509 --> 00:14:02,560
airlock

309
00:14:07,910 --> 00:14:05,519
at the start of the eva ev1 tomopesque

310
00:14:10,389 --> 00:14:07,920
comes out first followed by ev2 shane

311
00:14:13,189 --> 00:14:10,399
kimbrough tomorrow translates up to the

312
00:14:14,230 --> 00:14:13,199
front face of the truss and translates

313
00:14:16,949 --> 00:14:14,240

outboard

314

00:14:18,710 --> 00:14:16,959

tama is setting up what we refer to as

315

00:14:20,710 --> 00:14:18,720

safety tether anchors

316

00:14:23,670 --> 00:14:20,720

at this point he'll drop the anchor

317

00:14:25,750 --> 00:14:23,680

point for both he and shane

318

00:14:27,590 --> 00:14:25,760

shane will be retrieving an articulating

319

00:14:29,509 --> 00:14:27,600

portable foot restraint and putting his

320

00:14:31,829 --> 00:14:29,519

stowage bag onto it for translation

321

00:14:33,829 --> 00:14:31,839

outboard tomom makes his way out to the

322

00:14:36,470 --> 00:14:33,839

carrier that has the solar rays stowed

323

00:14:38,629 --> 00:14:36,480

on it shane follows along the truss then

324

00:14:41,990 --> 00:14:38,639

meets tomah at the carrier the crew

325

00:14:44,230 --> 00:14:42,000

drops off pistol grip tools and bags in

326

00:14:46,389 --> 00:14:44,240

preparation for releasing irosa from the

327

00:14:49,590 --> 00:14:46,399

carrier shane makes his way outboard

328

00:14:51,350 --> 00:14:49,600

onto the p6 truss element and stows the

329

00:14:54,550 --> 00:14:51,360

articulating portable foot restraint

330

00:14:56,470 --> 00:14:54,560

that he'll be using later on in the eva

331

00:14:58,389 --> 00:14:56,480

continues translating outboard to the

332

00:15:01,350 --> 00:14:58,399

very end of the truss and stows his

333

00:15:03,750 --> 00:15:01,360

stowage bag tama prepares the irosa by

334

00:15:06,470 --> 00:15:03,760

releasing the first hinge bolt

335

00:15:08,230 --> 00:15:06,480

and stowing his pistol grip tool

336

00:15:10,949 --> 00:15:08,240

taman makes his way outboard and

337

00:15:13,430 --> 00:15:10,959

releases an anti-rotation device which

338

00:15:15,509 --> 00:15:13,440

keeps the primary bolt locked in place

339

00:15:18,389 --> 00:15:15,519

during launch loads

340

00:15:20,389 --> 00:15:18,399

tamar retrieves a handling aid for irosa

341

00:15:22,790 --> 00:15:20,399

we refer to this as a scoop

342

00:15:25,430 --> 00:15:22,800

meanwhile shane retrieves a crew lock

343

00:15:28,069 --> 00:15:25,440

bag and installs it on the lower support

344

00:15:29,990 --> 00:15:28,079

truss of the mod kit he retrieves

345

00:15:32,310 --> 00:15:30,000

another scoop another handling aid and

346

00:15:33,990 --> 00:15:32,320

installs it on the mounting bracket of

347

00:15:35,829 --> 00:15:34,000

the mod kit

348

00:15:38,629 --> 00:15:35,839

chain retrieves one of the two sets of

349

00:15:40,629 --> 00:15:38,639

cables and pre-positions them for future

350

00:15:42,949 --> 00:15:40,639

installation

351
00:15:47,030 --> 00:15:42,959
chain retrieves his pistol grip tool and

352
00:15:49,829 --> 00:15:47,040
makes his way back inboard to join tomah

353
00:15:51,670 --> 00:15:49,839
toma prepares the release bolts down to

354
00:15:54,069 --> 00:15:51,680
the last few turns

355
00:15:56,710 --> 00:15:54,079
tama installs one of the handling aids

356
00:15:58,870 --> 00:15:56,720
and makes his way back around irosa

357
00:16:00,870 --> 00:15:58,880
he changes out his pistol grip tool

358
00:16:03,509 --> 00:16:00,880
makes his way down to the crew and

359
00:16:05,350 --> 00:16:03,519
equipment translation aid or cetacart

360
00:16:07,910 --> 00:16:05,360
and retrieves the foot restraint that

361
00:16:09,829 --> 00:16:07,920
he'll use on the end of the arm for his

362
00:16:12,069 --> 00:16:09,839
work with irosa he installs the foot

363
00:16:13,590 --> 00:16:12,079

restraint at the end of the arm puts it

364

00:16:15,990 --> 00:16:13,600

in the right position

365

00:16:18,790 --> 00:16:16,000

and ingresses the arm

366

00:16:21,590 --> 00:16:18,800

the arm then flies him into position

367

00:16:23,269 --> 00:16:21,600

to drive two bolts that are on the boom

368

00:16:25,350 --> 00:16:23,279

deployment system

369

00:16:27,509 --> 00:16:25,360

once these bolts have been released the

370

00:16:29,509 --> 00:16:27,519

booms can be moved outboard and this

371

00:16:31,990 --> 00:16:29,519

will help with the release of the solar

372

00:16:34,310 --> 00:16:32,000

a when it's eventually deployed tama

373

00:16:36,470 --> 00:16:34,320

drives two of the outboard launch

374

00:16:37,350 --> 00:16:36,480

restraint bolts that hold the tube in

375

00:16:40,310 --> 00:16:37,360

place

376
00:16:42,870 --> 00:16:40,320
and the arm maneuvers him for release of

377
00:16:44,629 --> 00:16:42,880
irosa from the carrier meanwhile shane

378
00:16:46,870 --> 00:16:44,639
makes his way over to the carrier and

379
00:16:49,829 --> 00:16:46,880
gets into position for release

380
00:16:52,710 --> 00:16:49,839
shane drives the last few turns on the

381
00:16:54,870 --> 00:16:52,720
release bolts and now the irosa solar a

382
00:16:57,350 --> 00:16:54,880
has been released from flight support

383
00:17:00,629 --> 00:16:57,360
equipment he installs a handling aid and

384
00:17:02,790 --> 00:17:00,639
toma is able to slide a rosa off of the

385
00:17:04,710 --> 00:17:02,800
carrier and remove it meanwhile shane is

386
00:17:06,549 --> 00:17:04,720
keeping an eye on the whole system to

387
00:17:08,789 --> 00:17:06,559
make sure that irosa does not come into

388
00:17:11,590 --> 00:17:08,799

contact with the rms grapple fixture and

389

00:17:13,909 --> 00:17:11,600

away tamago's with irosa meanwhile shane

390

00:17:15,029 --> 00:17:13,919

gets off of the carrier and translates

391

00:17:17,990 --> 00:17:15,039

outboard

392

00:17:19,990 --> 00:17:18,000

he'll stow tomas safety tether hook in

393

00:17:22,549 --> 00:17:20,000

preparation for when tomorrow comes off

394

00:17:25,270 --> 00:17:22,559

of the arm and he'll continue his path

395

00:17:27,110 --> 00:17:25,280

outboard he stows his pistol grip tool

396

00:17:28,309 --> 00:17:27,120

makes his way to his foot restraint and

397

00:17:29,590 --> 00:17:28,319

ingresses

398

00:17:31,990 --> 00:17:29,600

while he's getting into his foot

399

00:17:34,390 --> 00:17:32,000

restraint tama is continuing his path

400

00:17:35,110 --> 00:17:34,400

holding on to irosa while the arm flies

401
00:17:37,510 --> 00:17:35,120
him

402
00:17:40,310 --> 00:17:37,520
as far outward as it can reach

403
00:17:42,870 --> 00:17:40,320
he hands off the irosa to shane they

404
00:17:45,190 --> 00:17:42,880
swap tethers shane has control of irosa

405
00:17:47,510 --> 00:17:45,200
and is left holding it while tomorrow

406
00:17:50,710 --> 00:17:47,520
goes back to his egress position he gets

407
00:17:52,950 --> 00:17:50,720
out of the arm changes his safety tether

408
00:17:55,909 --> 00:17:52,960
and makes his way back to where shane is

409
00:17:59,029 --> 00:17:55,919
holding irosa he then rotates shane into

410
00:18:01,190 --> 00:17:59,039
position so that irosa is handed off to

411
00:18:03,909 --> 00:18:01,200
the next point tomorrow ingresses his

412
00:18:06,310 --> 00:18:03,919
foot restraint and receives irosa

413
00:18:08,870 --> 00:18:06,320

shane egresses his foot restraint moves

414

00:18:11,750 --> 00:18:08,880

outboard and gets into position to help

415

00:18:14,390 --> 00:18:11,760

tomah install irosa unto its final

416

00:18:16,070 --> 00:18:14,400

location on the mod kit one of the two

417

00:18:18,390 --> 00:18:16,080

handling aids is removed before

418

00:18:20,310 --> 00:18:18,400

installing onto this mounting bracket

419

00:18:22,470 --> 00:18:20,320

the two crew members work together to

420

00:18:23,430 --> 00:18:22,480

align it and put it into a soft capture

421

00:18:25,430 --> 00:18:23,440

feature

422

00:18:27,510 --> 00:18:25,440

once it's installed the other handling

423

00:18:29,270 --> 00:18:27,520

aid is removed final hinge restraint

424

00:18:32,789 --> 00:18:29,280

bolt is loosened

425

00:18:35,350 --> 00:18:32,799

and irosa is now able to rotate into its

426

00:18:37,029 --> 00:18:35,360

fully deployed fully extended position

427

00:18:39,430 --> 00:18:37,039

the two crew members work together to

428

00:18:41,270 --> 00:18:39,440

swing it into the single tube

429

00:18:44,710 --> 00:18:41,280

once it is in position

430

00:18:46,710 --> 00:18:44,720

shane stows the two handling aids tomah

431

00:18:49,190 --> 00:18:46,720

gets into position to drive the hinge

432

00:18:51,430 --> 00:18:49,200

bolts these two bolts hold the two

433

00:18:54,150 --> 00:18:51,440

halves of the irosa solar ray into a

434

00:18:56,470 --> 00:18:54,160

single tube these bolts are delicate

435

00:18:59,350 --> 00:18:56,480

pins so the final torque to get them

436

00:19:01,830 --> 00:18:59,360

into position is done with the hand tool

437

00:19:04,470 --> 00:19:01,840

so that we don't over torque those bolts

438

00:19:05,990 --> 00:19:04,480

once that's in place there are eight

439

00:19:09,029 --> 00:19:06,000

mounting bolts

440

00:19:11,350 --> 00:19:09,039

that hold all of the irosa solar ray

441

00:19:13,669 --> 00:19:11,360

onto the mounting bracket

442

00:19:16,549 --> 00:19:13,679

toma will drive the first four followed

443

00:19:18,390 --> 00:19:16,559

by shane driving the second set of four

444

00:19:21,029 --> 00:19:18,400

shane and tomorrow will work together to

445

00:19:24,230 --> 00:19:21,039

install the electrical cables that hook

446

00:19:26,470 --> 00:19:24,240

up to irosa one set goes to the right

447

00:19:28,390 --> 00:19:26,480

side and the other set goes to the left

448

00:19:30,870 --> 00:19:28,400

side and they are finally hooked up in

449

00:19:32,710 --> 00:19:30,880

place on the legacy solar rays that's

450

00:19:34,549 --> 00:19:32,720

done during eclipse

451
00:19:36,549 --> 00:19:34,559
after those cables are installed the

452
00:19:39,669 --> 00:19:36,559
crew gets into position to drive the

453
00:19:41,750 --> 00:19:39,679
final two bolts that are holding irosa

454
00:19:44,310 --> 00:19:41,760
in the pre-deployed position once these

455
00:19:46,470 --> 00:19:44,320
two bolts have been driven irosa is free

456
00:19:49,190 --> 00:19:46,480
to extend itself into its deployed

457
00:19:51,110 --> 00:19:49,200
position after the crews verified that

458
00:19:52,390 --> 00:19:51,120
the solar array is in the right position

459
00:19:54,789 --> 00:19:52,400
and it's fully deployed

460
00:19:58,070 --> 00:19:54,799
they drive two tensioning bolts this

461
00:20:01,190 --> 00:19:58,080
allows the sail to be tensioned into its

462
00:20:02,870 --> 00:20:01,200
uh final configuration once irosa has

463
00:20:04,710 --> 00:20:02,880

been fully deployed there are some

464

00:20:06,149 --> 00:20:04,720

checkout steps that are performed to

465

00:20:07,830 --> 00:20:06,159

make sure that everything is hooked up

466

00:20:09,909 --> 00:20:07,840

correctly and the crew cleans up the

467

00:20:12,310 --> 00:20:09,919

work site they retrieve the handling

468

00:20:14,630 --> 00:20:12,320

aids the pistol grip tools and they

469

00:20:16,070 --> 00:20:14,640

prepare for the second eva in the series

470

00:20:17,990 --> 00:20:16,080

to do this they take their foot

471

00:20:20,390 --> 00:20:18,000

restraints and move them to the other

472

00:20:22,630 --> 00:20:20,400

side of the p6 truss structure this will

473

00:20:24,630 --> 00:20:22,640

be the work site for the second eva each

474

00:20:26,710 --> 00:20:24,640

crew member has their own foot restraint

475

00:20:29,510 --> 00:20:26,720

and they'll move them to the other side

476
00:20:31,430 --> 00:20:29,520
the crew repositions stowage bag that's

477
00:20:33,510 --> 00:20:31,440
holding the other set of cables to the

478
00:20:35,510 --> 00:20:33,520
other side of the truss pre-positions it

479
00:20:37,750 --> 00:20:35,520
for the next dva the crew will do an

480
00:20:39,510 --> 00:20:37,760
inventory of all their tools and their

481
00:20:41,430 --> 00:20:39,520
hardware and they'll start their pat

482
00:20:43,190 --> 00:20:41,440
back to the airlock on their way back

483
00:20:45,110 --> 00:20:43,200
they'll stop at the carrier pick up the

484
00:20:47,190 --> 00:20:45,120
last crew lock bag and the last pistol

485
00:20:48,870 --> 00:20:47,200
grip tool and make their way inboard

486
00:20:50,950 --> 00:20:48,880
when both crew members are back at the

487
00:20:52,710 --> 00:20:50,960
airlock they'll retrieve a foot

488
00:20:55,590 --> 00:20:52,720

restraint that has been causing us

489

00:20:57,990 --> 00:20:55,600

problems and bring it inside the airlock

490

00:21:00,310 --> 00:20:58,000

to inspect shane will enter the airlock

491

00:21:06,390 --> 00:21:00,320

followed by tomah and that ends the

492

00:21:11,350 --> 00:21:08,870

and the electrical systems officer here

493

00:21:14,470 --> 00:21:11,360

in mission control has indicated that if

494

00:21:15,909 --> 00:21:14,480

all goes as planned we should get some

495

00:21:18,630 --> 00:21:15,919

indication

496

00:21:21,110 --> 00:21:18,640

that the newly deployed

497

00:21:23,990 --> 00:21:21,120

iss rollout solar array

498

00:21:26,789 --> 00:21:24,000

is generating the proper amount of power

499

00:21:28,070 --> 00:21:26,799

either before or during the time frame

500

00:21:30,630 --> 00:21:28,080

that the crew is

501
00:21:33,510 --> 00:21:30,640
re-entering the quest airlock uh near

502
00:21:36,549 --> 00:21:33,520
the end of today's spacewalk once again

503
00:21:38,710 --> 00:21:36,559
as you saw in the animation irosa you'll

504
00:21:40,710 --> 00:21:38,720
again you'll be hearing that acronym

505
00:21:42,310 --> 00:21:40,720
frequently uh throughout the course of

506
00:21:45,190 --> 00:21:42,320
our coverage today

507
00:21:46,230 --> 00:21:45,200
irosa standing for iss rollout solar

508
00:21:48,710 --> 00:21:46,240
array

509
00:21:51,430 --> 00:21:48,720
it will be positioned in front of the

510
00:21:54,310 --> 00:21:51,440
legacy solar rays or the older solar

511
00:21:56,950 --> 00:21:54,320
arrays on the p6 truss of the station

512
00:22:00,390 --> 00:21:56,960
it attaches to the existing beta gimbal

513
00:22:02,710 --> 00:22:00,400

assembly that permits it

514

00:22:04,789 --> 00:22:02,720

the use of existing sun tracking power

515

00:22:06,549 --> 00:22:04,799

distribution and uh

516

00:22:08,470 --> 00:22:06,559

the power distribution to the proper

517

00:22:09,350 --> 00:22:08,480

channel in this case the first array to

518

00:22:11,029 --> 00:22:09,360

be

519

00:22:15,590 --> 00:22:11,039

installed and deployed today will

520

00:22:16,950 --> 00:22:15,600

service the so-called 2b power channel

521

00:22:17,909 --> 00:22:16,960

the first of

522

00:22:20,149 --> 00:22:17,919

six

523

00:22:22,950 --> 00:22:20,159

power channels to be augmented during

524

00:22:25,350 --> 00:22:22,960

the course of these irosa installation

525

00:22:27,510 --> 00:22:25,360

and deployment activities

526
00:22:30,230 --> 00:22:27,520
these arrays will shadow approximately

527
00:22:31,750 --> 00:22:30,240
two-thirds of the legacy arrays

528
00:22:34,630 --> 00:22:31,760
they're connected to the same power

529
00:22:37,750 --> 00:22:34,640
system to augment the existing supply

530
00:22:40,390 --> 00:22:37,760
the uh two arrays

531
00:22:42,390 --> 00:22:40,400
to be deployed the first today and the

532
00:22:44,710 --> 00:22:42,400
second on sunday

533
00:22:47,669 --> 00:22:44,720
will be electrically combined and both

534
00:22:48,470 --> 00:22:47,679
provide power to the iss resulting in

535
00:22:51,029 --> 00:22:48,480
the

536
00:22:54,789 --> 00:22:51,039
increased power performance compared to

537
00:22:56,870 --> 00:22:54,799
the original legacy iss solar array and

538
00:22:59,110 --> 00:22:56,880

as we mentioned earlier each of these

539

00:23:00,870 --> 00:22:59,120

new arrays will produce more than 20

540

00:23:03,190 --> 00:23:00,880

kilowatts of power

541

00:23:06,470 --> 00:23:03,200

and when all six are finally deployed

542

00:23:09,669 --> 00:23:06,480

and activated they will total about 120

543

00:23:22,549 --> 00:23:09,679

kilowatts of augmented power for the

544

00:23:26,310 --> 00:23:24,470

in the equipment lock section of the

545

00:23:27,909 --> 00:23:26,320

quest airlock mark vanda high on the

546

00:23:29,750 --> 00:23:27,919

right side of your screen and megan

547

00:23:30,870 --> 00:23:29,760

mcarthur on the left

548

00:23:33,510 --> 00:23:30,880

are

549

00:23:35,270 --> 00:23:33,520

making final checks to the suits of

550

00:23:37,430 --> 00:23:35,280

shane kimbrough that you see in the

551
00:23:39,990 --> 00:23:37,440
middle of your view you're looking over

552
00:23:41,190 --> 00:23:40,000
the shoulder of tomah pesquet

553
00:23:43,110 --> 00:23:41,200
pesquet

554
00:23:46,149 --> 00:23:43,120
who will be wearing the suit bearing the

555
00:23:49,269 --> 00:23:46,159
red stripes today is extra vehicular

556
00:23:51,350 --> 00:23:49,279
crew member number one or ev1

557
00:23:53,830 --> 00:23:51,360
and again he'll be wearing the helmet

558
00:23:55,909 --> 00:23:53,840
camera bearing the number 20 in the

559
00:23:57,750 --> 00:23:55,919
lower right hand side of your screen

560
00:24:00,950 --> 00:23:57,760
once they are turned on following the

561
00:24:03,750 --> 00:24:00,960
crew's exit from the crew lock section

562
00:24:05,990 --> 00:24:03,760
of the quest airlock

563
00:24:09,669 --> 00:24:06,000

shane kimbrough is designated today as

564

00:24:11,750 --> 00:24:09,679

ev2 he is wearing the unmarked suit

565

00:24:14,230 --> 00:24:11,760

and will have a helmet camera bearing

566

00:24:16,390 --> 00:24:14,240

the number 22 during the course of

567

00:24:19,110 --> 00:24:16,400

today's spacewalk and as mentioned

568

00:24:21,830 --> 00:24:19,120

earlier both spacewalkers will also be

569

00:24:23,110 --> 00:24:21,840

equipped with high definition helmet

570

00:24:26,310 --> 00:24:23,120

cameras

571

00:24:27,510 --> 00:24:26,320

to provide even better views of some of

572

00:24:31,269 --> 00:24:27,520

the intricate work that they're going to

573

00:24:33,990 --> 00:24:31,279

be conducting to loosen up bolts

574

00:24:37,029 --> 00:24:34,000

and the installation of these new solar

575

00:24:39,909 --> 00:24:37,039

arrays on what are called mod kits or

576
00:25:23,430 --> 00:24:39,919
modification kits that were installed on

577
00:25:30,630 --> 00:25:26,549
the crew began their suit up activities

578
00:25:31,909 --> 00:25:30,640
about 1 a.m central time this morning

579
00:25:33,029 --> 00:25:31,919
they

580
00:25:35,750 --> 00:25:33,039
again

581
00:25:36,950 --> 00:25:35,760
were assisted in being suited up by mark

582
00:25:39,510 --> 00:25:36,960
vande high

583
00:25:42,789 --> 00:25:39,520
nasa astronaut that you see on the right

584
00:25:45,510 --> 00:25:42,799
side of your screen of the blue shirt

585
00:25:47,510 --> 00:25:45,520
they then began to pre-breathe pure

586
00:25:49,029 --> 00:25:47,520
oxygen to cleanse their systems of

587
00:25:52,070 --> 00:25:49,039
nitrogen

588
00:25:54,549 --> 00:25:52,080

in the customary procedure that prevents

589

00:25:56,789 --> 00:25:54,559

any possibility of decompression

590

00:25:59,909 --> 00:25:56,799

sickness from setting in once they move

591

00:26:02,149 --> 00:25:59,919

out into the vacuum of space a good view

592

00:26:04,630 --> 00:26:02,159

down the length of the equipment lock

593

00:26:06,230 --> 00:26:04,640

section of the quest airlock as you see

594

00:26:09,110 --> 00:26:06,240

megan mcarthur

595

00:26:10,470 --> 00:26:09,120

checking out suit systems along with

596

00:26:13,750 --> 00:26:10,480

vanda high

597

00:26:16,870 --> 00:26:13,760

she will be operating the canadarm2

598

00:26:19,029 --> 00:26:16,880

robotic arm from the workstation in the

599

00:26:21,110 --> 00:26:19,039

destiny laboratory during the course of

600

00:26:24,710 --> 00:26:21,120

today's spacewalk

601
00:26:27,510 --> 00:26:24,720
the money shot for today is likely to be

602
00:26:29,669 --> 00:26:27,520
the movement of tomah pesquet in a foot

603
00:26:31,669 --> 00:26:29,679
restraint at the end of the canadarm2

604
00:26:34,630 --> 00:26:31,679
like a telephone repairman at the end of

605
00:26:37,269 --> 00:26:34,640
a cherry picker who will be hauling this

606
00:26:40,310 --> 00:26:37,279
first dyrosa solar array uh to the

607
00:26:43,190 --> 00:26:40,320
worksite to the worksite

608
00:26:45,750 --> 00:26:43,200
purge in step 20. the bedok's canisters

609
00:26:47,350 --> 00:26:45,760
are temp stowed node one deck three uh

610
00:26:53,350 --> 00:26:47,360
serial number is one zero three three

611
00:26:59,190 --> 00:26:55,909
we copy your go to proceed and those are

612
00:27:08,549 --> 00:27:00,789
right and we have resumed

613
00:27:13,510 --> 00:27:11,190

again macarthur will be uh the robotic

614

00:27:15,830 --> 00:27:13,520

arm operator during the course of

615

00:27:18,710 --> 00:27:15,840

today's spacewalk as she moves tomorrow

616

00:27:21,590 --> 00:27:18,720

pesquet to the work site but pesquet

617

00:27:24,789 --> 00:27:21,600

will be carrying that arosa solar ray

618

00:27:26,070 --> 00:27:24,799

which on earth weighs 750 pounds of

619

00:27:28,389 --> 00:27:26,080

course in weightlessness it doesn't

620

00:27:30,149 --> 00:27:28,399

weigh anything other than the mass that

621

00:27:32,950 --> 00:27:30,159

he'll be hauling

622

00:27:35,590 --> 00:27:32,960

to a handoff to shane kimbrough who will

623

00:27:38,149 --> 00:27:35,600

then hand it back to pesquet and the two

624

00:27:40,230 --> 00:27:38,159

uh spacewalkers will work in tandem to

625

00:27:42,149 --> 00:27:40,240

position that array for its installation

626

00:27:45,190 --> 00:27:42,159

on the modification kit

627

00:28:05,350 --> 00:27:45,200

which is at the mast canister at the

628

00:28:09,750 --> 00:28:07,190

we're about 37 minutes away from

629

00:28:12,230 --> 00:28:09,760

beginning the depressurization of the

630

00:28:14,789 --> 00:28:12,240

crew lock section of the quest airlock

631

00:28:17,990 --> 00:28:14,799

over the course of the next half hour

632

00:28:21,029 --> 00:28:18,000

uh the simplified aid for eva rescue

633

00:28:21,909 --> 00:28:21,039

backpacks will be affixed to the back of

634

00:28:25,029 --> 00:28:21,919

the

635

00:28:26,950 --> 00:28:25,039

spacesuits for pesquet and kimbrough and

636

00:28:28,950 --> 00:28:26,960

they'll be moved into the quest airlock

637

00:28:31,350 --> 00:28:28,960

the hatchet will then be closed and

638

00:28:33,029 --> 00:28:31,360

they'll be isolated from the rest of the

639

00:31:09,430 --> 00:28:33,039

crew members on the international

640

00:31:14,549 --> 00:31:11,190

at this hour the international space

641

00:31:16,070 --> 00:31:14,559

station is flying 258 statute miles over

642

00:31:18,549 --> 00:31:16,080

the ukraine

643

00:31:21,350 --> 00:31:18,559

south of kiev moving from northwest to

644

00:31:23,830 --> 00:31:21,360

southeast in an orbit inclined 51.6

645

00:31:26,789 --> 00:31:23,840

degrees to either side of the equator

646

00:31:28,630 --> 00:31:26,799

some of the timing of today's spacewalk

647

00:31:31,750 --> 00:31:28,640

is measured

648

00:31:34,470 --> 00:31:31,760

to be conducted during orbital nighttime

649

00:31:37,509 --> 00:31:34,480

particularly the actual hookup of power

650

00:31:39,029 --> 00:31:37,519

connectors for the new solar arrays so

651

00:31:39,909 --> 00:31:39,039

they're they're not

652

00:31:42,470 --> 00:31:39,919

hot

653

00:31:45,350 --> 00:31:42,480

quote unquote at the time uh that

654

00:31:48,149 --> 00:31:45,360

they're uh acquiring electrical uh

655

00:31:49,669 --> 00:31:48,159

power from the sun during an orbital

656

00:31:52,149 --> 00:31:49,679

daylight pass

657

00:31:53,750 --> 00:31:52,159

so there will be times in which the crew

658

00:31:57,110 --> 00:31:53,760

if they're running slightly ahead in the

659

00:31:58,310 --> 00:31:57,120

timeline will be asked to simply stop

660

00:32:01,190 --> 00:31:58,320

so that the

661

00:32:03,190 --> 00:32:01,200

timing of certain tasks to be conducted

662

00:32:04,470 --> 00:32:03,200

deliberately during an orbital night

663

00:32:08,470 --> 00:32:04,480

time

664

00:32:10,789 --> 00:32:08,480

to meet the particular technical

665

00:32:13,909 --> 00:32:10,799

requirements for the installation and

666

00:34:03,110 --> 00:32:13,919

deployment of the iss rollout solar

667

00:34:08,069 --> 00:34:05,509

inside the equipment lock section of the

668

00:34:09,109 --> 00:34:08,079

quest airlock megan mcarthur and mark

669

00:34:11,750 --> 00:34:09,119

vandehei

670

00:34:14,710 --> 00:34:11,760

are beginning work to affix

671

00:34:17,909 --> 00:34:14,720

the first of the simplified aid for eva

672

00:34:21,349 --> 00:34:17,919

rescue or safer backpacks

673

00:34:23,829 --> 00:34:21,359

to tomah pesquez space suit

674

00:34:25,669 --> 00:34:23,839

shane kimbrough will be next up to have

675

00:34:28,069 --> 00:34:25,679

his safer unit

676
00:34:30,550 --> 00:34:28,079
uh installed

677
00:34:32,069 --> 00:34:30,560
again those jet powered backpacks are

678
00:34:34,550 --> 00:34:32,079
designed

679
00:34:36,629 --> 00:34:34,560
to provide the capability if necessary

680
00:34:38,230 --> 00:34:36,639
in the unlikely possibility that a crew

681
00:34:39,589 --> 00:34:38,240
member would become detached or

682
00:34:41,190 --> 00:34:39,599
untethered

683
00:34:43,270 --> 00:34:41,200
during the course of the spacewalk they

684
00:34:44,869 --> 00:34:43,280
could propel themselves back to the

685
00:35:36,310 --> 00:34:44,879
structure of the international space

686
00:35:36,320 --> 00:37:48,790
um

687
00:37:52,790 --> 00:37:50,630
this is mission control houston uh in

688
00:37:55,030 --> 00:37:52,800

the field of view uh in the foreground

689

00:37:56,310 --> 00:37:55,040

is uh space station commander aki

690

00:37:58,870 --> 00:37:56,320

hoshide

691

00:38:00,470 --> 00:37:58,880

from the japan aerospace exploration

692

00:38:02,630 --> 00:38:00,480

agency

693

00:38:05,910 --> 00:38:02,640

as uh megan macarthur and mark vande

694

00:38:07,910 --> 00:38:05,920

high are finalizing the attachment

695

00:38:11,109 --> 00:38:07,920

of the jet powered backpack called the

696

00:38:13,510 --> 00:38:11,119

safer to tomorrow pesquet's spacesuit

697

00:38:14,630 --> 00:38:13,520

again you see the red stripes on his

698

00:38:17,430 --> 00:38:14,640

legs

699

00:38:19,430 --> 00:38:17,440

that's indicative of his designation as

700

00:38:20,950 --> 00:38:19,440

extra vehicular crew member number one

701

00:38:23,109 --> 00:38:20,960

or ev1

702

00:38:25,349 --> 00:38:23,119

he'll be first out of the crew lock

703

00:38:26,710 --> 00:38:25,359

section of the quest airlock once the

704

00:38:28,550 --> 00:38:26,720

hatch is open

705

00:38:30,230 --> 00:38:28,560

and the suits are placed on internal

706

00:38:33,430 --> 00:38:30,240

battery power to begin the official

707

00:38:35,910 --> 00:38:33,440

start of today's excursion by him and

708

00:38:38,470 --> 00:38:35,920

shane kimbrough the nasa flight engineer

709

00:38:40,870 --> 00:38:38,480

who will spend six and a half to seven

710

00:38:42,710 --> 00:38:40,880

hours out in the void of space today

711

00:38:44,230 --> 00:38:42,720

attaching the first

712

00:38:47,030 --> 00:38:44,240

of a half dozen

713

00:38:48,950 --> 00:38:47,040

iss roll out solar arrays to augment the

714

00:40:39,829 --> 00:38:48,960

power capability of the international

715

00:40:44,870 --> 00:40:42,230

tomah pesquet is now inside the crew

716

00:40:47,030 --> 00:40:44,880

lock section of the quest airlock

717

00:40:50,390 --> 00:40:47,040

shane kimbrough now will

718

00:40:53,270 --> 00:40:50,400

be assisted in the donning of his safer

719

00:40:55,430 --> 00:40:53,280

jet-powered backpack before being moved

720

00:43:16,150 --> 00:40:55,440

across the threshold into the crew lock

721

00:43:19,109 --> 00:43:17,589

in the

722

00:43:21,349 --> 00:43:19,119

equipment lock section of the quest

723

00:43:23,430 --> 00:43:21,359

airlock a wealth of space walking

724

00:43:26,550 --> 00:43:23,440

experience of bounds

725

00:43:29,109 --> 00:43:26,560

uh mark vanda high with four space walks

726

00:43:31,670 --> 00:43:29,119

to his credit in his career aki hoshide

727

00:43:44,309 --> 00:43:31,680

with his back to the camera has

728

00:43:47,829 --> 00:43:46,150

megan mcarthur's previous flight into

729

00:43:49,510 --> 00:43:47,839

space of course uh

730

00:43:51,270 --> 00:43:49,520

was part of the crew

731

00:43:53,910 --> 00:43:51,280

for the final servicing mission of the

732

00:43:56,550 --> 00:43:53,920

hubble space telescope she operated the

733

00:43:58,630 --> 00:43:56,560

shuttle's robotic arm to capture and

734

00:44:00,870 --> 00:43:58,640

later deploy

735

00:44:03,750 --> 00:44:00,880

the hubble

736

00:44:06,550 --> 00:44:03,760

she will be operating the canadarm2 the

737

00:44:09,829 --> 00:44:06,560

space station's robotic arm today to

738

00:44:13,030 --> 00:44:09,839

transport tomah pesquet around

739

00:44:14,550 --> 00:44:13,040

with the iss rollout solar array

740

00:44:17,270 --> 00:44:14,560

uh to the

741

00:44:19,349 --> 00:44:17,280

work site at the far port section

742

00:44:22,150 --> 00:44:19,359

of the international space station where

743

00:44:24,710 --> 00:44:22,160

he and shane kimbrough will work in

744

00:44:28,150 --> 00:44:24,720

tandem to install

745

00:44:30,550 --> 00:44:28,160

that solar array to a so-called mod kit

746

00:44:32,069 --> 00:44:30,560

that was hooked up on a previous

747

00:44:34,630 --> 00:44:32,079

spacewalk

748

00:44:37,030 --> 00:44:34,640

and then of course to loosen bolts and

749

00:50:08,710 --> 00:44:37,040

other mechanisms to permit the

750

00:50:12,950 --> 00:50:10,790

this is mission control houston you are

751
00:50:15,190 --> 00:50:12,960
looking live inside the equipment lock

752
00:50:17,670 --> 00:50:15,200
section of the quest airlock of the

753
00:50:19,910 --> 00:50:17,680
international space station

754
00:50:22,230 --> 00:50:19,920
you're looking at nasa flight engineer

755
00:50:24,309 --> 00:50:22,240
shane kimbrough and his extra vehicular

756
00:50:27,670 --> 00:50:24,319
mobility unit

757
00:50:30,710 --> 00:50:27,680
his crewmate megan mcarthur uh and mark

758
00:50:32,470 --> 00:50:30,720
vande high are across the threshold uh

759
00:50:34,790 --> 00:50:32,480
that separates the equipment lock from

760
00:50:36,950 --> 00:50:34,800
the crew lock section of quest tomah

761
00:50:39,190 --> 00:50:36,960
pesquet of the european space agency is

762
00:50:41,190 --> 00:50:39,200
already inside the crew lock shane

763
00:50:43,829 --> 00:50:41,200

kimbrough soon to be moved inside to

764

00:50:44,790 --> 00:50:43,839

join his spacewalking colleague for

765

00:50:46,710 --> 00:50:44,800

today

766

00:50:48,910 --> 00:50:46,720

as we are about

767

00:50:51,190 --> 00:50:48,920

15 minutes away from the start of the

768

00:50:53,910 --> 00:50:51,200

depressurization of the crewlock section

769

00:50:55,990 --> 00:50:53,920

of quest that will be the precursor for

770

00:50:58,309 --> 00:50:56,000

the start of today's space walk by

771

00:51:01,030 --> 00:50:58,319

pesquet and kimbrough to install the

772

00:51:03,190 --> 00:51:01,040

first of a half dozen new solar arrays

773

00:51:05,910 --> 00:51:03,200

to augment the power system of the

774

00:51:08,549 --> 00:51:05,920

international space station today's work

775

00:51:11,829 --> 00:51:08,559

to be conducted on the far left or port

776

00:51:14,870 --> 00:51:11,839

truss of the station at the p6 truss the

777

00:51:17,829 --> 00:51:14,880

first truss element of the station to

778

00:51:19,430 --> 00:51:17,839

carry a solar array that was launched

779

00:57:59,030 --> 00:51:19,440

aboard the space shuttle endeavour in

780

00:58:03,829 --> 00:58:01,510

this is mission control houston

781

00:58:05,990 --> 00:58:03,839

uh both tomah pesquet and shane

782

00:58:09,349 --> 00:58:06,000

kimbrough now inside the crew lock

783

00:58:12,069 --> 00:58:09,359

section of the quest airlock aki hoshide

784

00:58:14,309 --> 00:58:12,079

in the foreground assisted by mark

785

00:58:15,430 --> 00:58:14,319

vandehein now beginning to close the

786

00:58:17,990 --> 00:58:15,440

hatch

787

00:58:19,589 --> 00:58:18,000

that will isolate the two space walkers

788

00:58:20,950 --> 00:58:19,599

for today

789

00:58:22,630 --> 00:58:20,960

we're about

790

00:58:25,109 --> 00:58:22,640

seven minutes away

791

00:58:26,789 --> 00:58:25,119

for a go for the depressurization of the

792

00:58:29,750 --> 00:58:26,799

crew lock section that will be done in a

793

00:58:32,549 --> 00:58:29,760

two-step fashion while we have a moment

794

00:58:34,950 --> 00:58:32,559

let's replay for you the seven-minute

795

00:58:37,910 --> 00:58:34,960

animation narrated by the lead spacewalk

796

00:58:40,870 --> 00:58:37,920

officer keith johnson who will outline

797

00:58:44,870 --> 00:58:40,880

all of the tasks that face pesquet and

798

00:58:47,270 --> 00:58:44,880

kimbrough in today's spacewalk

799

00:58:49,910 --> 00:58:47,280

at the start of the eva ev1 tomorrow

800

00:58:52,630 --> 00:58:49,920

pesquet comes out first followed by ev2

801
00:58:54,870 --> 00:58:52,640
shane kimbrough tomah translates up to

802
00:58:56,549 --> 00:58:54,880
the front face of the truss and

803
00:58:59,190 --> 00:58:56,559
translates outboard

804
00:59:01,030 --> 00:58:59,200
tama is setting up what we refer to as

805
00:59:02,950 --> 00:59:01,040
safety tether anchors

806
00:59:05,990 --> 00:59:02,960
at this point he'll drop the anchor

807
00:59:08,069 --> 00:59:06,000
point for both he and shane

808
00:59:09,910 --> 00:59:08,079
shane will be retrieving an articulating

809
00:59:11,910 --> 00:59:09,920
portable foot restraint and putting his

810
00:59:14,150 --> 00:59:11,920
stowage bag onto it for translation

811
00:59:16,150 --> 00:59:14,160
outboard tomom makes his way out to the

812
00:59:18,789 --> 00:59:16,160
carrier that has the solar rays stowed

813
00:59:20,870 --> 00:59:18,799

on it shane follows along the truss then

814

00:59:24,309 --> 00:59:20,880

meets tomah at the carrier the crew

815

00:59:26,549 --> 00:59:24,319

drops off pistol grip tools and bags in

816

00:59:28,710 --> 00:59:26,559

preparation for releasing irosa from the

817

00:59:31,910 --> 00:59:28,720

carrier shane makes his way outboard

818

00:59:33,670 --> 00:59:31,920

onto the p6 truss element and stows the

819

00:59:36,870 --> 00:59:33,680

articulating portable foot restraint

820

00:59:38,789 --> 00:59:36,880

that he'll be using later on in the eva

821

00:59:40,710 --> 00:59:38,799

continues translating outboard to the

822

00:59:43,670 --> 00:59:40,720

very end of the truss and stows his

823

00:59:46,069 --> 00:59:43,680

stowage bag tama prepares the irosa by

824

00:59:48,710 --> 00:59:46,079

releasing the first hinge bolt

825

00:59:51,349 --> 00:59:48,720

and stowing his pistol grip tool

826
00:59:53,670 --> 00:59:51,359
tama makes his way outboard and releases

827
00:59:56,069 --> 00:59:53,680
an anti-rotation device which keeps the

828
00:59:57,829 --> 00:59:56,079
primary bolt locked in place during

829
01:00:00,710 --> 00:59:57,839
launch loads

830
01:00:02,710 --> 01:00:00,720
tamar retrieves a handling aid for irosa

831
01:00:05,030 --> 01:00:02,720
we refer to this as a scoop

832
01:00:07,750 --> 01:00:05,040
meanwhile shane retrieves a crew lock

833
01:00:10,390 --> 01:00:07,760
bag and installs it on the lower support

834
01:00:12,230 --> 01:00:10,400
truss of the mod kit he retrieves

835
01:00:14,549 --> 01:00:12,240
another scoop another handling aid and

836
01:00:16,230 --> 01:00:14,559
installs it on the mounting bracket of

837
01:00:18,150 --> 01:00:16,240
the mod kit

838
01:00:20,950 --> 01:00:18,160

chain retrieves one of the two sets of

839

01:00:22,950 --> 01:00:20,960

cables and pre-positions them for future

840

01:00:25,270 --> 01:00:22,960

installation

841

01:00:29,510 --> 01:00:25,280

chain retrieves his pistol grip tool and

842

01:00:32,069 --> 01:00:29,520

makes his way back inboard to join toma

843

01:00:33,990 --> 01:00:32,079

ma prepares the release bolts down to

844

01:00:36,390 --> 01:00:34,000

the last few turns

845

01:00:39,030 --> 01:00:36,400

teman installs one of the handling aids

846

01:00:41,190 --> 01:00:39,040

and makes his way back around dairosa

847

01:00:42,390 --> 01:00:41,200

he changes out his pistol grip tool

848

01:00:44,230 --> 01:00:42,400

makes his way down

849

01:00:47,030 --> 01:00:44,240

to the crew and equipment translation

850

01:00:49,190 --> 01:00:47,040

aid or cedar cart and retrieves the foot

851

01:00:51,430 --> 01:00:49,200

restraint that he'll use on the end of

852

01:00:52,950 --> 01:00:51,440

the arm for his work with irosa he

853

01:00:55,910 --> 01:00:52,960

installs the foot restraint at the end

854

01:00:58,309 --> 01:00:55,920

of the arm puts it in the right position

855

01:01:01,109 --> 01:00:58,319

and ingresses the arm

856

01:01:03,910 --> 01:01:01,119

the arm then flies him into position

857

01:01:05,589 --> 01:01:03,920

to drive two bolts that are on the boom

858

01:01:07,670 --> 01:01:05,599

deployment system

859

01:01:09,750 --> 01:01:07,680

once these bolts have been released the

860

01:01:11,829 --> 01:01:09,760

booms can be moved outboard and this

861

01:01:14,309 --> 01:01:11,839

will help with the release of the solar

862

01:01:16,630 --> 01:01:14,319

a when it's eventually deployed tama

863

01:01:18,710 --> 01:01:16,640

drives two of the outboard launch

864

01:01:19,670 --> 01:01:18,720

restraint bolts that hold the tube in

865

01:01:22,630 --> 01:01:19,680

place

866

01:01:25,190 --> 01:01:22,640

and the arm maneuvers him for release of

867

01:01:26,950 --> 01:01:25,200

irosa from the carrier meanwhile shane

868

01:01:29,190 --> 01:01:26,960

makes his way over to the carrier and

869

01:01:32,150 --> 01:01:29,200

gets into position for release

870

01:01:34,549 --> 01:01:32,160

shane drives the last few turns on the

871

01:01:36,870 --> 01:01:34,559

release bolts and now the irosa solar

872

01:01:38,870 --> 01:01:36,880

array has been released from flight

873

01:01:42,390 --> 01:01:38,880

support equipment he installs a handling

874

01:01:44,230 --> 01:01:42,400

aid and tomah is able to slide a rosa

875

01:01:46,069 --> 01:01:44,240

off of the carrier and remove it

876

01:01:48,069 --> 01:01:46,079

meanwhile shane is keeping an eye on the

877

01:01:50,150 --> 01:01:48,079

whole system to make sure that irosa

878

01:01:52,549 --> 01:01:50,160

does not come into contact with the rms

879

01:01:54,870 --> 01:01:52,559

grapple fixture and away tamago's with

880

01:01:57,589 --> 01:01:54,880

irosa meanwhile shane gets off of the

881

01:02:00,309 --> 01:01:57,599

carrier and translates outboard he'll

882

01:02:02,309 --> 01:02:00,319

stow tomas safety tether hook in

883

01:02:03,349 --> 01:02:02,319

preparation for when tomorrow comes off

884

01:02:05,990 --> 01:02:03,359

of the arm

885

01:02:08,069 --> 01:02:06,000

and he'll continue his path outboard he

886

01:02:10,630 --> 01:02:08,079

stows his pistol grip tool makes his way

887

01:02:11,910 --> 01:02:10,640

to his foot restraint and ingresses

888

01:02:14,230 --> 01:02:11,920

while he's getting into his foot

889

01:02:16,630 --> 01:02:14,240

restraint tomah is continuing his path

890

01:02:17,430 --> 01:02:16,640

holding on to irosa while the arm flies

891

01:02:20,390 --> 01:02:17,440

him

892

01:02:23,670 --> 01:02:20,400

as far outward as it can reach he hands

893

01:02:25,990 --> 01:02:23,680

off the irosa to shane they swap tethers

894

01:02:28,069 --> 01:02:26,000

shane has control of irosa and is left

895

01:02:30,230 --> 01:02:28,079

holding it while tomorrow goes back to

896

01:02:33,029 --> 01:02:30,240

his egress position he gets out of the

897

01:02:35,270 --> 01:02:33,039

arm changes his safety tether

898

01:02:38,150 --> 01:02:35,280

and makes his way back to where shane is

899

01:02:41,270 --> 01:02:38,160

holding irosa he then rotates shane into

900

01:02:43,510 --> 01:02:41,280

position so that irosa is handed off to

901
01:02:46,230 --> 01:02:43,520
the next point tomorrow ingresses his

902
01:02:48,630 --> 01:02:46,240
foot restraint and receives irosa

903
01:02:51,190 --> 01:02:48,640
shane egresses his foot restraint moves

904
01:02:54,069 --> 01:02:51,200
outboard and gets into position to help

905
01:02:56,150 --> 01:02:54,079
tomah install irosa unto its final

906
01:02:57,990 --> 01:02:56,160
location on the mod kit

907
01:03:00,230 --> 01:02:58,000
one of the two handling aids is removed

908
01:03:01,829 --> 01:03:00,240
before installing onto this mounting

909
01:03:03,990 --> 01:03:01,839
bracket the two crew members work

910
01:03:07,029 --> 01:03:04,000
together to align it and put it into a

911
01:03:09,029 --> 01:03:07,039
soft capture feature once it's installed

912
01:03:11,589 --> 01:03:09,039
the other handling aid is removed final

913
01:03:15,029 --> 01:03:11,599

hinge restraint bolt is loosened

914

01:03:17,589 --> 01:03:15,039

and irosa is now able to rotate into its

915

01:03:19,349 --> 01:03:17,599

fully deployed fully extended position

916

01:03:21,750 --> 01:03:19,359

the two crew members work together to

917

01:03:23,589 --> 01:03:21,760

swing it into the single tube

918

01:03:26,950 --> 01:03:23,599

once it is in position

919

01:03:29,029 --> 01:03:26,960

shane stows the two handling aids tama

920

01:03:31,510 --> 01:03:29,039

gets into position to drive the hinge

921

01:03:33,750 --> 01:03:31,520

bolts these two bolts hold the two

922

01:03:34,870 --> 01:03:33,760

halves of the irosa solar array into a

923

01:03:37,510 --> 01:03:34,880

single tube

924

01:03:39,510 --> 01:03:37,520

these bolts are delicate pins so the

925

01:03:42,150 --> 01:03:39,520

final torque to get them into position

926
01:03:44,470 --> 01:03:42,160
is done with the hand tool so that we

927
01:03:47,270 --> 01:03:44,480
don't over torque those bolts once

928
01:03:48,309 --> 01:03:47,280
that's in place there are eight mounting

929
01:03:51,349 --> 01:03:48,319
bolts

930
01:03:53,670 --> 01:03:51,359
that hold all of the irosa solar ray

931
01:03:55,670 --> 01:03:53,680
onto the mounting bracket

932
01:03:57,990 --> 01:03:55,680
tomorrow we'll drive the first four

933
01:03:59,829 --> 01:03:58,000
followed by shane driving the second set

934
01:04:02,150 --> 01:03:59,839
of four shane and tomas will work

935
01:04:05,750 --> 01:04:02,160
together to install the electrical

936
01:04:07,990 --> 01:04:05,760
cables that hook up to irosa one set

937
01:04:09,750 --> 01:04:08,000
goes to the right side and the other set

938
01:04:12,069 --> 01:04:09,760

goes to the left side and they are

939

01:04:15,029 --> 01:04:12,079

finally hooked up in place on the legacy

940

01:04:16,870 --> 01:04:15,039

solar rays that's done during eclipse

941

01:04:18,789 --> 01:04:16,880

after those cables are installed the

942

01:04:21,910 --> 01:04:18,799

crew gets into position to drive the

943

01:04:23,990 --> 01:04:21,920

final two bolts that are holding irosa

944

01:04:26,630 --> 01:04:24,000

in the pre-deployed position once these

945

01:04:28,789 --> 01:04:26,640

two bolts have been driven irosa is free

946

01:04:31,510 --> 01:04:28,799

to extend itself into its deployed

947

01:04:33,430 --> 01:04:31,520

position after the crews verified that

948

01:04:35,589 --> 01:04:33,440

the solar array is in the right position

949

01:04:38,950 --> 01:04:35,599

and it's fully deployed they drive two

950

01:04:41,109 --> 01:04:38,960

tensioning bolts this allows the sail to

951

01:04:43,990 --> 01:04:41,119

be tensioned into its uh final

952

01:04:45,990 --> 01:04:44,000

configuration once irosa has been fully

953

01:04:47,510 --> 01:04:46,000

deployed there are some checkout steps

954

01:04:49,190 --> 01:04:47,520

that are performed to make sure that

955

01:04:51,270 --> 01:04:49,200

everything is hooked up correctly and

956

01:04:53,349 --> 01:04:51,280

the crew cleans up the work site they

957

01:04:55,349 --> 01:04:53,359

retrieve the handling aids the pistol

958

01:04:57,750 --> 01:04:55,359

grip tools and they prepare for the

959

01:04:59,670 --> 01:04:57,760

second eva in the series to do this they

960

01:05:01,750 --> 01:04:59,680

take their foot restraints and move them

961

01:05:03,750 --> 01:05:01,760

to the other side of the p6 truss

962

01:05:05,589 --> 01:05:03,760

structure this will be the work site for

963

01:05:07,270 --> 01:05:05,599

the second eva each crew member has

964

01:05:09,029 --> 01:05:07,280

their own foot restraint and they'll

965

01:05:11,589 --> 01:05:09,039

move them to the other side

966

01:05:13,430 --> 01:05:11,599

the crew repositions the stowage bag

967

01:05:14,870 --> 01:05:13,440

that's holding the other set of cables

968

01:05:17,190 --> 01:05:14,880

to the other side of the truss

969

01:05:18,950 --> 01:05:17,200

pre-positions it for the next dva the

970

01:05:21,109 --> 01:05:18,960

crew will do an inventory of all their

971

01:05:23,029 --> 01:05:21,119

tools and their hardware then they'll

972

01:05:24,470 --> 01:05:23,039

start their pat back to the airlock on

973

01:05:26,630 --> 01:05:24,480

their way back they'll stop at the

974

01:05:28,549 --> 01:05:26,640

carrier pick up the last crew lock bag

975

01:05:30,549 --> 01:05:28,559

and the last pistol grip tool and make

976

01:05:32,870 --> 01:05:30,559

their way inboard when both crew members

977

01:05:34,789 --> 01:05:32,880

are back at the airlock they'll retrieve

978

01:05:37,190 --> 01:05:34,799

a foot restraint that has been causing

979

01:05:39,589 --> 01:05:37,200

us problems and bring it inside the

980

01:05:42,549 --> 01:05:39,599

airlock to inspect shane will enter the

981

01:05:48,470 --> 01:05:42,559

airlock followed by tomah and that ends

982

01:05:53,109 --> 01:05:50,309

and for both of you monitor your seat

983

01:05:55,910 --> 01:05:53,119

pressure gauge is less than 525

984

01:05:59,190 --> 01:05:55,920

and if it ever gets above 5.5 stop the

985

01:06:04,950 --> 01:06:02,710

press 5 man iso is open

986

01:06:08,150 --> 01:06:04,960

copy open and let us know in the

987

01:06:10,549 --> 01:06:08,160

previous 6.0 uh expecting light phone

988

01:06:12,309 --> 01:06:10,559

uh you don't have to let us know but

989

01:06:14,150 --> 01:06:12,319

do let us know

990

01:06:16,470 --> 01:06:14,160

this is mission control houston uh here

991

01:06:18,630 --> 01:06:16,480

in the uh space station flight control

992

01:06:20,870 --> 01:06:18,640

room ron spencer standing up he is the

993

01:06:22,549 --> 01:06:20,880

flight director for today's spacewalk by

994

01:06:25,190 --> 01:06:22,559

pesquet and kimbrough

995

01:06:27,589 --> 01:06:25,200

he is joined on console to his right by

996

01:06:31,109 --> 01:06:27,599

canadian space agency astronaut jenny

997

01:06:33,910 --> 01:06:31,119

seidi who is the ground iv basically the

998

01:06:35,670 --> 01:06:33,920

spacewalk communicator who will be

999

01:06:38,150 --> 01:06:35,680

running through all the procedures step

1000

01:06:40,390 --> 01:06:38,160

by step with pesky and kimbrough once

1001
01:06:41,750 --> 01:06:40,400
they move outside of the quest airlock

1002
01:06:44,470 --> 01:06:41,760
and to her right

1003
01:06:47,430 --> 01:06:44,480
is veteran astronaut drew feustel

1004
01:06:50,470 --> 01:06:47,440
he has a very impressive spacewalking

1005
01:06:53,589 --> 01:06:50,480
record in his career nine spacewalks for

1006
01:06:57,029 --> 01:06:53,599
a total of 61 hours and 48 minutes of

1007
01:06:59,510 --> 01:06:57,039
spacewalking time he will basically run

1008
01:07:01,349 --> 01:06:59,520
the procedures through the point at

1009
01:07:03,029 --> 01:07:01,359
which the crew will place their suits on

1010
01:07:05,589 --> 01:07:03,039
internal battery power to begin the

1011
01:07:07,990 --> 01:07:05,599
official start of today's spacewalk and

1012
01:07:09,990 --> 01:07:08,000
then i'll hand over the communications

1013
01:07:11,910 --> 01:07:10,000

chores to jenny seidy

1014

01:07:14,230 --> 01:07:11,920

for the remainder of the spacewalk

1015

01:07:16,150 --> 01:07:14,240

feustel will be available to talk to the

1016

01:07:17,750 --> 01:07:16,160

other crew members inside the

1017

01:07:20,309 --> 01:07:17,760

international space station during the

1018

01:07:22,230 --> 01:07:20,319

course of today's activities

1019

01:07:24,549 --> 01:07:22,240

the depressurization

1020

01:07:26,710 --> 01:07:24,559

of the crew lock section of quest is

1021

01:07:28,390 --> 01:07:26,720

underway this will be conducted in a

1022

01:07:30,870 --> 01:07:28,400

two-step fashion

1023

01:07:33,029 --> 01:07:30,880

first to bring the crew lock section

1024

01:07:35,029 --> 01:07:33,039

down to five pounds per square inch of

1025

01:07:37,109 --> 01:07:35,039

pressure there will be leak checks

1026

01:07:39,349 --> 01:07:37,119

communications checks with the crew

1027

01:07:46,870 --> 01:07:39,359

before the depressurization continues to

1028

01:07:46,880 --> 01:07:59,990

p4.8

1029

01:08:04,230 --> 01:08:02,950

to recap this will be the 239th

1030

01:08:06,870 --> 01:08:04,240

spacewalk

1031

01:08:08,870 --> 01:08:06,880

in international space station history

1032

01:08:11,589 --> 01:08:08,880

in support of assembly maintenance and

1033

01:08:12,950 --> 01:08:11,599

upgrades the seventh spacewalk for shane

1034

01:08:15,029 --> 01:08:12,960

kimbrough

1035

01:08:16,789 --> 01:08:15,039

who will be wearing a helmet camera with

1036

01:08:18,550 --> 01:08:16,799

the number 22

1037

01:08:21,269 --> 01:08:18,560

in the lower right hand corner of your

1038

01:08:23,669 --> 01:08:21,279

screen once it is turned on following

1039

01:08:25,910 --> 01:08:23,679

the crew's exit from the crew lock

1040

01:08:29,110 --> 01:08:25,920

section of quest this will be the third

1041

01:08:31,030 --> 01:08:29,120

space walk in tomorrow pesquet's career

1042

01:08:34,950 --> 01:08:31,040

he will be wearing helmet camera number

1043

01:08:37,269 --> 01:08:34,960

20 and both crew members outside will be

1044

01:08:38,789 --> 01:08:37,279

also equipped with high definition

1045

01:08:41,189 --> 01:08:38,799

helmet cameras

1046

01:08:43,430 --> 01:08:41,199

for even better enhanced views of the

1047

01:08:45,910 --> 01:08:43,440

work that they'll be doing outside

1048

01:08:46,950 --> 01:08:45,920

pesquet is extra vehicular crew member

1049

01:08:49,590 --> 01:08:46,960

number one

1050

01:08:51,910 --> 01:08:49,600

will uh wear the suit bearing the red

1051

01:08:54,390 --> 01:08:51,920

stripes shane kimbrough sued as

1052

01:10:15,189 --> 01:08:54,400

extravehicular crew member number two is

1053

01:11:15,910 --> 01:10:17,189

five on my suit

1054

01:11:15,920 --> 01:11:19,590

apsi on the vcm

1055

01:11:19,600 --> 01:12:16,229

hosting

1056

01:12:20,470 --> 01:12:18,310

again you guys are all over but when the

1057

01:12:30,149 --> 01:12:20,480

crew lock is at 6.0

1058

01:12:33,830 --> 01:12:32,229

lock section of quest monitoring the

1059

01:12:36,070 --> 01:12:33,840

depressurization

1060

01:12:37,990 --> 01:12:36,080

of the crew lock section the outermost

1061

01:12:39,350 --> 01:12:38,000

section of the two compartment quest

1062

01:12:41,430 --> 01:12:39,360

airlock

1063

01:12:43,270 --> 01:12:41,440

it will be taken down to about six

1064

01:12:44,790 --> 01:12:43,280

pounds of pressure per square inch

1065

01:12:47,350 --> 01:12:44,800

almost five

1066

01:12:49,189 --> 01:12:47,360

before we pause to conduct leak checks

1067

01:12:53,189 --> 01:12:49,199

on the crew members suits

1068

01:12:54,709 --> 01:12:53,199

final communications checks before the

1069

01:12:57,590 --> 01:12:54,719

green light is given

1070

01:12:58,630 --> 01:12:57,600

for pesque and kimbrough to open up the

1071

01:13:00,709 --> 01:12:58,640

hatch

1072

01:13:04,229 --> 01:13:00,719

on the crew lock section

1073

01:13:05,590 --> 01:13:04,239

the outer thermal cover will be uh

1074

01:13:07,750 --> 01:13:05,600

opened as well

1075

01:13:09,750 --> 01:13:07,760

and the crew members then will be given

1076

01:13:12,070 --> 01:13:09,760

the green light to place their suits on

1077

01:13:51,189 --> 01:13:12,080

internal battery power which will mark

1078

01:13:51,199 --> 01:14:06,310

one section 640.

1079

01:14:06,320 --> 01:15:01,669

foreign

1080

01:15:07,110 --> 01:15:04,550

once the two space walkers have placed

1081

01:15:09,189 --> 01:15:07,120

their suits on internal battery power

1082

01:15:11,430 --> 01:15:09,199

pasquet will be first out of the quest

1083

01:15:14,229 --> 01:15:11,440

airlock he will be joined just a few

1084

01:15:17,669 --> 01:15:14,239

moments after that by kimbrough

1085

01:15:19,750 --> 01:15:17,679

and the two will begin to check out

1086

01:15:21,350 --> 01:15:19,760

all of their equipment make sure their

1087

01:15:23,590 --> 01:15:21,360

tools and tethers are properly

1088

01:15:26,390 --> 01:15:23,600

configured before they make their way

1089

01:15:27,910 --> 01:15:26,400

over to the work site on the far left

1090

01:15:30,070 --> 01:15:27,920

side of the truss

1091

01:15:50,830 --> 01:15:30,080

of the international space station at

1092

01:15:55,910 --> 01:15:53,750

five copy 5.0

1093

01:15:58,550 --> 01:15:55,920

depressed pump manual isolation valve to

1094

01:16:16,229 --> 01:15:58,560

close close

1095

01:16:21,590 --> 01:16:17,590

did you get the defense pump

1096

01:16:25,669 --> 01:16:24,709

and i didn't copy yes close

1097

01:16:28,229 --> 01:16:25,679

close

1098

01:16:31,430 --> 01:16:28,239

okay for both of you on your gcm switch

1099

01:16:33,750 --> 01:16:31,440

the display to status until leak check

1100

01:16:35,750 --> 01:16:33,760

question mark this is displayed and then

1101
01:16:38,950 --> 01:16:35,760
displayed to yes hold for a few seconds

1102
01:16:40,390 --> 01:16:38,960
and follow the displayed instructions

1103
01:16:41,750 --> 01:16:40,400
copied

1104
01:17:46,390 --> 01:16:41,760
copy

1105
01:17:49,990 --> 01:17:48,310
check complete

1106
01:17:59,270 --> 01:17:50,000
and for here

1107
01:18:02,630 --> 01:18:00,630
copy both of your leak checks are

1108
01:18:19,110 --> 01:18:02,640
complete and you're in the process of

1109
01:18:19,120 --> 01:18:42,550
dva for you one

1110
01:18:45,910 --> 01:18:44,070
looks like i'm in eva but it's not

1111
01:18:47,430 --> 01:18:45,920
showing it

1112
01:19:15,350 --> 01:18:47,440
dcm

1113
01:19:20,790 --> 01:19:18,950

the emergency mpev is now open

1114

01:19:28,149 --> 01:19:20,800

until your suit pressure gauge stays

1115

01:19:33,270 --> 01:19:30,390

mark vanda high continuing to monitor

1116

01:19:35,110 --> 01:19:33,280

the procedures as we have now resumed

1117

01:19:37,590 --> 01:19:35,120

the depressurization

1118

01:19:40,149 --> 01:19:37,600

of the crew lock down to vacuum

1119

01:19:41,830 --> 01:19:40,159

which will be the precursor

1120

01:19:43,910 --> 01:19:41,840

to the crew opening the

1121

01:19:45,030 --> 01:19:43,920

outer hatch to the crew lock and placing

1122

01:19:46,870 --> 01:19:45,040

their suits

1123

01:20:11,430 --> 01:19:46,880

on internal battery power to begin

1124

01:20:11,440 --> 01:20:42,709

foreign

1125

01:20:47,189 --> 01:20:44,950

once the hatch is open and the space

1126
01:20:48,229 --> 01:20:47,199
walk begins megan macarthur will make

1127
01:20:50,629 --> 01:20:48,239
her way

1128
01:20:52,550 --> 01:20:50,639
to the robotics workstation inside the

1129
01:20:55,350 --> 01:20:52,560
international space station she'll be at

1130
01:20:56,310 --> 01:20:55,360
the controls of the canadarm2 robotic

1131
01:20:57,350 --> 01:20:56,320
arm

1132
01:21:01,830 --> 01:20:57,360
to

1133
01:21:04,070 --> 01:21:01,840
from one

1134
01:21:06,550 --> 01:21:04,080
area to the worksite

1135
01:21:08,390 --> 01:21:06,560
on the p6 truss the far left side of the

1136
01:21:10,950 --> 01:21:08,400
truss backbone of the international

1137
01:21:12,149 --> 01:21:10,960
space station he will be carrying that

1138
01:21:16,149 --> 01:21:12,159

first

1139

01:21:18,149 --> 01:21:16,159

irosa array the iss rollout solar array

1140

01:21:19,270 --> 01:21:18,159

once it is removed from a flight support

1141

01:21:22,070 --> 01:21:19,280

structure

1142

01:21:23,510 --> 01:21:22,080

to which it is attached the second of

1143

01:21:25,669 --> 01:21:23,520

these two

1144

01:21:26,629 --> 01:21:25,679

solar arrays the first pair of solar

1145

01:21:29,110 --> 01:21:26,639

arrays

1146

01:21:31,590 --> 01:21:29,120

will be the subject of sunday spacewalk

1147

01:21:34,390 --> 01:21:31,600

again by pesquet and kimbrough as they

1148

01:21:38,550 --> 01:21:34,400

work to hook that one up to the 4b

1149

01:21:42,229 --> 01:21:38,560

channel of the p6 truss the uh today's

1150

01:21:44,390 --> 01:21:42,239

array work will service the 2b channel

1151

01:21:45,910 --> 01:21:44,400

of the p6 truss

1152

01:21:50,390 --> 01:21:45,920

these are the first

1153

01:21:52,470 --> 01:21:50,400

pair of six such irosa solar arrays that

1154

01:21:54,149 --> 01:21:52,480

will augment power for six of the eight

1155

01:23:13,350 --> 01:21:54,159

power channels on the international

1156

01:23:13,360 --> 01:23:18,390

[Applause]

1157

01:23:18,400 --> 01:23:22,229

power to

1158

01:23:27,830 --> 01:23:23,830

report the initial configuration for

1159

01:23:31,669 --> 01:23:28,709

okay

1160

01:23:35,189 --> 01:23:33,510

change configuration only the right

1161

01:23:37,430 --> 01:23:35,199

steering extender

1162

01:23:39,830 --> 01:23:37,440

it fits together

1163

01:23:41,669 --> 01:23:39,840

close and lock goes to the elbow sorry

1164

01:23:43,830 --> 01:23:41,679

the waist center closure lock goes to

1165

01:23:45,750 --> 01:23:43,840

the unlock

1166

01:23:49,910 --> 01:23:45,760

place together

1167

01:23:53,990 --> 01:23:52,070

on the left steering extender you get a

1168

01:23:56,390 --> 01:23:54,000

spread hook

1169

01:23:58,950 --> 01:23:56,400

closed and locked goes to the red reel

1170

01:24:00,550 --> 01:23:58,960

which is unlocked

1171

01:24:03,590 --> 01:24:00,560

yellow hook

1172

01:24:05,830 --> 01:24:03,600

frozen locked through his green reel

1173

01:24:08,709 --> 01:24:05,840

unlocked his green reel

1174

01:24:10,870 --> 01:24:08,719

goes to his greenhouse goes to

1175

01:24:12,950 --> 01:24:10,880

his right reel

1176

01:24:15,189 --> 01:24:12,960

thank you european space agency

1177

01:24:18,390 --> 01:24:15,199

astronaut thomas

1178

01:24:20,870 --> 01:24:18,400

across that hatch way that you see mark

1179

01:24:23,430 --> 01:24:20,880

vande high on this side of the hatch

1180

01:24:26,229 --> 01:24:23,440

as pesquet and kimbrough report the

1181

01:24:28,470 --> 01:24:26,239

configuration of their tethers prior to

1182

01:24:30,790 --> 01:24:28,480

the point at which uh the crewlock

1183

01:24:33,350 --> 01:24:30,800

section of quest reaches vacuum which

1184

01:24:38,149 --> 01:24:33,360

should be just a few moments from now

1185

01:24:41,830 --> 01:24:39,669

close but not locked

1186

01:24:48,390 --> 01:24:41,840

and my entry hook

1187

01:24:51,750 --> 01:24:50,470

could you confirm that your right and

1188

01:24:53,189 --> 01:24:51,760

left waist

1189

01:24:55,590 --> 01:24:53,199

actually you have a hard time checking

1190

01:24:59,910 --> 01:24:55,600

your uh short waist tether

1191

01:25:01,430 --> 01:24:59,920

makes check that your uh

1192

01:25:03,189 --> 01:25:01,440

waist tether on the same side as your

1193

01:25:04,870 --> 01:25:03,199

safety tether pack

1194

01:25:06,629 --> 01:25:04,880

the waist tether small hook is closed

1195

01:25:08,790 --> 01:25:06,639

and locked on the on the deering

1196

01:25:09,830 --> 01:25:08,800

extender that is correct

1197

01:25:10,830 --> 01:25:09,840

the

1198

01:25:13,590 --> 01:25:10,840

left

1199

01:25:15,990 --> 01:25:13,600

side where my fixed rear attaches

1200

01:25:18,070 --> 01:25:16,000

get my waist center closed and locked

1201
01:25:20,790 --> 01:25:18,080
and on the other side is about my d-ring

1202
01:25:23,189 --> 01:25:20,800
off loads unlocked

1203
01:25:24,550 --> 01:25:23,199
could you confirm that the air lock

1204
01:25:26,149 --> 01:25:24,560
weighs tether the one that's directly

1205
01:25:27,830 --> 01:25:26,159
attached to airlock unit extender has

1206
01:25:29,590 --> 01:25:27,840
both of its hooks the large and small

1207
01:25:32,310 --> 01:25:29,600
hooks closed and locked

1208
01:25:35,270 --> 01:25:32,320
that is correct small hook closure lock

1209
01:25:36,629 --> 01:25:35,280
and large hooch closing lock on shane's

1210
01:25:38,709 --> 01:25:36,639
large roof

1211
01:25:39,910 --> 01:25:38,719
close the lawn

1212
01:25:43,750 --> 01:25:39,920
hey houston do you have anything you

1213
01:25:49,510 --> 01:25:45,990

that is a good tether config thank you

1214

01:25:52,550 --> 01:25:51,430

right thanks good work gentlemen

1215

01:25:55,430 --> 01:25:52,560

uh

1216

01:25:59,189 --> 01:25:55,440

on both your dcms when the crew lock

1217

01:26:01,270 --> 01:25:59,199

dpdt is about zero expect an alert tone

1218

01:26:04,550 --> 01:26:01,280

and then tomorrow when the ev hash

1219

01:26:06,550 --> 01:26:04,560

stealth pressure is less than 0.5 psi

1220

01:26:09,270 --> 01:26:06,560

you are going to open and stow the ev

1221

01:26:14,700 --> 01:26:09,280

hatch

1222

01:26:14,710 --> 01:26:18,470

[Music]

1223

01:26:21,350 --> 01:26:20,390

you want to take the

1224

01:26:27,030 --> 01:26:21,360

npe

1225

01:26:31,270 --> 01:26:29,590

the emergency mpv is open right now

1226

01:26:32,629 --> 01:26:31,280

okay um

1227

01:26:36,709 --> 01:26:32,639

there's nothing on there about opening

1228

01:26:36,719 --> 01:26:41,189

okay drop freezing forward

1229

01:26:46,070 --> 01:26:44,229

and open it keep it closed

1230

01:26:49,510 --> 01:26:46,080

let me see that more time when you get

1231

01:26:51,110 --> 01:26:49,520

to less than 0.35 psi on the hatch

1232

01:26:54,149 --> 01:26:51,120

you'll open and stow the house but keep

1233

01:26:57,430 --> 01:26:54,159

the mpv on that hatch closed

1234

01:26:59,470 --> 01:26:57,440

when i get the 2.5 psid

1235

01:27:06,790 --> 01:26:59,480

perhaps i open the

1236

01:27:09,990 --> 01:27:08,950

the airlock he's been

1237

01:27:11,990 --> 01:27:10,000

uh

1238

01:27:13,669 --> 01:27:12,000

we have about eight to ten minutes until

1239

01:27:16,149 --> 01:27:13,679

we're at a time where the delta p is

1240

01:27:17,590 --> 01:27:16,159

going to be less than 0.5 so we'll be

1241

01:27:19,030 --> 01:27:17,600

following along with you and i'll give

1242

01:27:22,390 --> 01:27:19,040

you direction on that hatch when we're

1243

01:27:29,750 --> 01:27:24,709

good job

1244

01:27:34,070 --> 01:27:31,910

hey while we are waiting on this big

1245

01:27:35,590 --> 01:27:34,080

thank you to mark and megan and axey for

1246

01:27:37,030 --> 01:27:35,600

i think doing a fantastic job and

1247

01:27:39,110 --> 01:27:37,040

getting us ready to go out the door that

1248

01:27:41,110 --> 01:27:39,120

was really nicely executed

1249

01:27:42,390 --> 01:27:41,120

i'll extend this to all the

1250

01:27:44,870 --> 01:27:42,400

track shifts i don't think those guys

1251

01:27:47,830 --> 01:27:44,880

are still on console as they are

1252

01:27:51,510 --> 01:27:47,840

congratulations if they're not please

1253

01:27:54,550 --> 01:27:53,189

thanks it was certainly an honor for all

1254

01:27:56,229 --> 01:27:54,560

of us to be able to participate in this

1255

01:27:57,510 --> 01:27:56,239

event you're working on today to help

1256

01:27:59,510 --> 01:27:57,520

improve the space station we are all

1257

01:28:01,750 --> 01:27:59,520

looking forward to continue successfully

1258

01:28:09,430 --> 01:28:01,760

to do your hard work today

1259

01:28:15,990 --> 01:28:12,830

with those words uh mark vande high will

1260

01:28:18,310 --> 01:28:16,000

turn the communications duties over to

1261

01:28:20,470 --> 01:28:18,320

jenny seidi the canadian space agency

1262

01:28:21,990 --> 01:28:20,480

astronaut here in mission control

1263

01:28:25,110 --> 01:28:22,000

who is the uh

1264

01:28:27,669 --> 01:28:25,120

ground iv or intravehicular crew member

1265

01:28:30,550 --> 01:28:27,679

essentially the spacewalk communicator

1266

01:28:32,709 --> 01:28:30,560

for today's excursion outside by

1267

01:29:03,590 --> 01:28:32,719

pesquet and nasa astronaut shane

1268

01:29:06,709 --> 01:29:05,430

about just to put on the belt and

1269

01:29:09,110 --> 01:29:06,719

suspenders to make sure we got

1270

01:29:11,510 --> 01:29:09,120

everything possibly covered

1271

01:29:14,790 --> 01:29:11,520

what is the current status of the mpev

1272

01:29:16,390 --> 01:29:14,800

on the ev hatch it is closed mark close

1273

01:29:22,550 --> 01:29:16,400

okay thanks

1274

01:29:22,560 --> 01:29:52,390

ground copies that's a good config

1275

01:29:55,750 --> 01:29:54,149

we're in a brief handover between

1276

01:29:59,110 --> 01:29:55,760

satellites on the tracking and data

1277

01:30:03,510 --> 01:30:01,669

we will regain our downlink television

1278

01:30:04,830 --> 01:30:03,520

capability and communications with the

1279

01:30:07,590 --> 01:30:04,840

crew

1280

01:30:09,990 --> 01:30:07,600

momentarily everything has proceeded by

1281

01:30:11,510 --> 01:30:10,000

the book throughout the overnight hours

1282

01:30:13,990 --> 01:30:11,520

setting the stage for the start of

1283

01:30:15,430 --> 01:30:14,000

today's spacewalk the seventh out of the

1284

01:30:59,510 --> 01:30:15,440

international space station this

1285

01:31:02,709 --> 01:31:01,830

turn my lights on come

1286

01:31:04,229 --> 01:31:02,719

right

1287

01:31:06,550 --> 01:31:04,239

here

1288

01:31:08,470 --> 01:31:06,560

this view uh from an external camera on

1289

01:31:11,750 --> 01:31:08,480

the international space station focused

1290

01:31:13,750 --> 01:31:11,760

on the quest airlock of the complex

1291

01:31:16,229 --> 01:31:13,760

inside the crew lock

1292

01:31:18,070 --> 01:31:16,239

pesky and kimbrough soon to place their

1293

01:31:23,750 --> 01:31:18,080

suits on battery power to begin the

1294

01:31:27,990 --> 01:31:25,510

the international space station flying

1295

01:31:31,270 --> 01:31:28,000

from southwest to northeast

1296

01:31:33,750 --> 01:31:31,280

across the southeastern pacific ocean

1297

01:31:36,390 --> 01:31:33,760

soon to cross over central america

1298

01:31:50,830 --> 01:31:36,400

in an orbit inclined 51.6 degrees to

1299

01:31:50,840 --> 01:31:55,669

[Music]

1300

01:31:55,679 --> 01:32:32,310

capital

1301

01:32:37,030 --> 01:32:35,110

i have a reminder for tomah we're not at

1302

01:32:38,790 --> 01:32:37,040

the point yet where we want you to

1303

01:32:39,830 --> 01:32:38,800

activate the hatch

1304

01:32:41,750 --> 01:32:39,840

but

1305

01:32:43,430 --> 01:32:41,760

after you fully rotate the hatch handle

1306

01:32:45,510 --> 01:32:43,440

when we are at that point we'll have you

1307

01:32:54,310 --> 01:32:45,520

pause for one second before opening the

1308

01:32:58,149 --> 01:32:56,149

hey genius mark uh

1309

01:32:59,830 --> 01:32:58,159

does tomorrow go to start that process

1310

01:33:06,950 --> 01:32:59,840

when he sees

1311

01:33:10,310 --> 01:33:08,229

well because you have to wait till you

1312

01:33:13,910 --> 01:33:10,320

call him

1313

01:33:13,920 --> 01:33:23,990

i'll check with you

1314

01:33:27,669 --> 01:33:25,270

we're thinking that that hatch is going

1315

01:33:29,510 --> 01:33:27,679

to lag as you guys might be expecting so

1316

01:33:32,390 --> 01:33:29,520

uh if we see it first we'll let you know

1317

01:33:34,550 --> 01:33:32,400

but if you see it uh you can open the

1318

01:33:36,149 --> 01:33:34,560

hatch just a reminder after you fully

1319

01:33:42,149 --> 01:33:36,159

rotate that handle we're looking for one

1320

01:33:42,159 --> 01:34:22,629

seconds

1321

01:34:22,639 --> 01:34:39,280

thank you

1322

01:34:39,290 --> 01:34:43,430

[Music]

1323

01:34:43,440 --> 01:35:25,030

copy tomorrow

1324

01:35:29,030 --> 01:35:27,189

flying into an orbital sunrise the

1325

01:35:31,669 --> 01:35:29,040

international space station's quest

1326

01:35:34,470 --> 01:35:31,679

airlock now clearly in view

1327

01:35:35,910 --> 01:35:34,480

soon the outer thermal hatch will pop

1328

01:35:37,350 --> 01:35:35,920

open and

1329

01:35:39,430 --> 01:35:37,360

the inner hatch

1330

01:35:40,629 --> 01:35:39,440

for the crew lock section of quest will

1331

01:35:43,189 --> 01:35:40,639

be opened

1332

01:35:45,590 --> 01:35:43,199

we're just about down to vacuum

1333

01:35:48,470 --> 01:35:45,600

and you'll start to hear the calls for

1334

01:35:51,910 --> 01:35:48,480

final communications and systems checks

1335

01:35:53,830 --> 01:35:51,920

for the uh two spacewalkers for today to

1336

01:35:54,950 --> 01:35:53,840

omaha pesquet of the european space

1337

01:36:11,109 --> 01:35:54,960

agency

1338

01:36:15,590 --> 01:36:13,189

as mentioned earlier in the broadcast

1339

01:36:17,910 --> 01:36:15,600

these two astronauts

1340

01:36:21,270 --> 01:36:17,920

conducted two spacewalks together during

1341

01:36:23,510 --> 01:36:21,280

expedition 50 in january and march of

1342

01:36:26,550 --> 01:36:23,520

2017

1343

01:36:28,390 --> 01:36:26,560

the first uh was work

1344

01:36:31,030 --> 01:36:28,400

that was ongoing as part of the sequence

1345

01:36:32,390 --> 01:36:31,040

of events that uh swapped out batteries

1346

01:36:34,470 --> 01:36:32,400

for the power system on the

1347

01:36:36,070 --> 01:36:34,480

international space station

1348

01:36:37,109 --> 01:36:36,080

the second of their two space walks

1349

01:36:38,790 --> 01:36:37,119

together

1350

01:36:41,350 --> 01:36:38,800

four years ago

1351

01:36:43,270 --> 01:36:41,360

uh saw them lubricate

1352

01:36:45,590 --> 01:36:43,280

and service the latching end effector on

1353

01:36:48,629 --> 01:36:45,600

the canadarm2 robotic arm

1354

01:36:49,510 --> 01:36:48,639

and prepare the zenith or space-facing

1355

01:36:51,109 --> 01:36:49,520

port

1356

01:36:52,950 --> 01:36:51,119

on the harmony module for the

1357

01:36:54,870 --> 01:36:52,960

installation later on

1358

01:38:12,870 --> 01:36:54,880

of the second of the two international

1359

01:38:16,790 --> 01:38:14,629

until now in the airlock i'm showing the

1360

01:38:22,149 --> 01:38:16,800

telemetry showing uh

1361

01:38:22,159 --> 01:38:30,070

correction 45 less than 0.5 psi

1362

01:38:34,229 --> 01:38:31,350

you've opened the hatch i'll go ahead

1363

01:38:35,910 --> 01:38:34,239

and put the emergency mpeg to closed and

1364

01:38:36,709 --> 01:38:35,920

then jenny it'll be completely over to

1365

01:38:39,189 --> 01:38:36,719

you

1366

01:38:45,140 --> 01:38:39,199

copy and we concur we see that pressure

1367

01:38:45,150 --> 01:38:55,910

[Music]

1368

01:38:55,920 --> 01:38:59,030

all right

1369

01:38:59,040 --> 01:39:06,149

we're taking clockwise to unlock

1370

01:39:23,109 --> 01:39:07,669

park stop

1371

01:39:28,790 --> 01:39:25,270

and the hatch to the crew lock sectional

1372

01:39:31,910 --> 01:39:28,800

quest now open at 709 we're standing by

1373

01:39:34,070 --> 01:39:31,920

now for final systems checks and the

1374

01:39:36,310 --> 01:39:34,080

suits being put on internal battery

1375

01:39:45,490 --> 01:39:36,320

power to mark the official start of

1376

01:39:45,500 --> 01:39:53,030

[Music]

1377

01:39:59,189 --> 01:39:54,709

you okay

1378

01:40:02,390 --> 01:39:59,199

if you go as much forward as you can say

1379

01:40:06,830 --> 01:40:02,400

one phone call forward there you go

1380

01:40:08,390 --> 01:40:06,840

okay that's open nice pictures for your

1381

01:40:10,709 --> 01:40:08,400

daylight

1382

01:40:13,030 --> 01:40:10,719

nicely done tomorrow the emergency mpv

1383

01:40:14,149 --> 01:40:13,040

is now closed

1384

01:40:16,470 --> 01:40:14,159

all right

1385

01:40:19,830 --> 01:40:16,480

good luck today and uh look forward to

1386

01:40:24,070 --> 01:40:21,750

all right ground copies thank you mark

1387

01:40:28,070 --> 01:40:24,080

well done i am ready to pick up with you

1388

01:40:29,830 --> 01:40:28,080

guys on your dcms switch power to bat

1389

01:40:31,669 --> 01:40:29,840

stagger your switch throws and expect a

1390

01:40:48,629 --> 01:40:31,679

warning tone check display switch

1391

01:40:48,639 --> 01:40:59,270

eb2

1392

01:41:03,670 --> 01:41:00,950

looking for a good display on shane as

1393

01:41:05,109 --> 01:41:03,680

well

1394

01:41:06,310 --> 01:41:05,119

[Applause]

1395

01:41:11,669 --> 01:41:06,320

display

1396

01:41:24,629 --> 01:41:15,189

on the uia switch power for ev1 and ev2

1397

01:41:27,670 --> 01:41:27,430

okay powers ev1 and you are off leds are

1398

01:41:29,910 --> 01:41:27,680

off

1399

01:41:33,990 --> 01:41:29,920

[Applause]

1400

01:41:36,709 --> 01:41:34,000

if this is dual of expected

1401
01:41:41,060 --> 01:41:36,719
disconnect scus from your dcms and

1402
01:41:41,070 --> 01:41:55,189
[Music]

1403
01:41:58,870 --> 01:41:56,870
here it is connected

1404
01:42:01,030 --> 01:41:58,880
cover in place

1405
01:42:06,440 --> 01:42:01,040
and

1406
01:42:06,450 --> 01:42:28,950
[Applause]

1407
01:42:32,870 --> 01:42:30,950
this is mission control houston

1408
01:42:35,030 --> 01:42:32,880
tomah pesquet of the european space

1409
01:42:36,790 --> 01:42:35,040
agency and nasa's shane kimbrough have

1410
01:42:37,830 --> 01:42:36,800
placed their suits on internal battery

1411
01:42:39,830 --> 01:42:37,840
power

1412
01:42:43,189 --> 01:42:39,840
at 7 11

1413
01:42:45,189 --> 01:42:43,199

a.m central time 8 11 a.m eastern time

1414

01:42:47,830 --> 01:42:45,199

marking the official start

1415

01:42:49,430 --> 01:42:47,840

of today's spacewalk the 239th in

1416

01:42:52,470 --> 01:42:49,440

support of space station assembly

1417

01:42:55,030 --> 01:42:52,480

maintenance and upgrades again start

1418

01:42:58,550 --> 01:42:55,040

time for today's spacewalk officially

1419

01:43:07,669 --> 01:42:58,560

measured at 7 11 am central 8 11 a.m

1420

01:43:07,679 --> 01:43:23,109

rtv1 backside

1421

01:43:23,119 --> 01:43:28,790

check dcm blank byte off

1422

01:43:34,870 --> 01:43:31,270

in black and white all 51

1423

01:43:35,990 --> 01:43:34,880

pc and flight flight rcvt

1424

01:43:37,590 --> 01:43:36,000

copy all

1425

01:43:43,669 --> 01:43:37,600

temperature control valves set as

1426

01:43:47,430 --> 01:43:45,430

the voice you're hearing uh here in

1427

01:43:49,750 --> 01:43:47,440

mission control talking to the two space

1428

01:43:53,910 --> 01:43:49,760

walkers is that of canadian space agency

1429

01:43:56,550 --> 01:43:53,920

astronaut jenny seidi she is the ground

1430

01:43:58,629 --> 01:43:56,560

iv or the spacewalk choreographer who

1431

01:44:02,229 --> 01:43:58,639

will be working step by step through all

1432

01:44:04,870 --> 01:44:02,239

of the procedures for today's spacewalk

1433

01:44:07,030 --> 01:44:04,880

the hatch is open to the quest airlocks

1434

01:44:09,430 --> 01:44:07,040

crew lock section you'll be seeing tomah

1435

01:44:11,510 --> 01:44:09,440

pesquet wearing the suit bearing the red

1436

01:44:14,550 --> 01:44:11,520

stripes as extra vehicular crew member

1437

01:44:17,030 --> 01:44:14,560

number one he'll be emerging just a few

1438

01:44:18,070 --> 01:44:17,040

moments from now once he and kimbrough

1439

01:44:20,550 --> 01:44:18,080

have

1440

01:44:26,149 --> 01:44:20,560

completed an inventory of all the tools

1441

01:44:29,669 --> 01:44:27,830

all right coffee and with that we are

1442

01:44:33,990 --> 01:44:29,679

ready to offer you to open the hatch

1443

01:44:38,280 --> 01:44:35,430

you'll bring the

1444

01:44:43,720 --> 01:44:38,290

nice thermal cover

1445

01:44:43,730 --> 01:44:47,669

[Music]

1446

01:44:51,430 --> 01:44:49,350

into my you'll be stowing the hook on

1447

01:45:21,510 --> 01:44:51,440

the stiffener tether point and cinching

1448

01:45:26,070 --> 01:45:23,510

the outer thermal cover on the quest

1449

01:45:29,510 --> 01:45:26,080

airline opens just as the international

1450

01:45:33,669 --> 01:45:29,520

space station flies 258 statute miles

1451
01:45:37,910 --> 01:45:35,750
a firm to my you can egress the airlock

1452
01:45:40,390 --> 01:45:37,920
with crewlock bag number one

1453
01:45:51,750 --> 01:45:40,400
we'll have you verify the forward hatch

1454
01:45:51,760 --> 01:45:58,229
dialogue

1455
01:46:02,950 --> 01:46:01,109
over the hatch 15

1456
01:46:08,390 --> 01:46:02,960
engaged

1457
01:46:13,990 --> 01:46:11,030
that makes a lot bag

1458
01:46:15,750 --> 01:46:14,000
copy you can get that uh back relock bag

1459
01:46:47,110 --> 01:46:15,760
on your vrt and when you're ready give

1460
01:46:47,120 --> 01:47:00,070
[Applause]

1461
01:47:07,189 --> 01:47:01,350
come back in

1462
01:47:11,030 --> 01:47:09,030
when you're ready for that

1463
01:47:13,430 --> 01:47:11,040

right back

1464

01:47:18,629 --> 01:47:13,440

yeah okay i got

1465

01:47:18,639 --> 01:47:29,510

got johnny bag

1466

01:47:33,910 --> 01:47:31,910

and our first view of thomas pesquet

1467

01:47:35,350 --> 01:47:33,920

extra vehicular crew member number one

1468

01:47:38,070 --> 01:47:35,360

today

1469

01:47:40,149 --> 01:47:38,080

wearing the suit with the red stripes

1470

01:47:42,870 --> 01:47:40,159

representing the european space agency

1471

01:47:58,870 --> 01:47:42,880

today as he begins the third spacewalk

1472

01:47:58,880 --> 01:48:01,830

cable bag

1473

01:48:06,070 --> 01:48:04,070

released from

1474

01:48:25,030 --> 01:48:06,080

airlock heather

1475

01:48:25,040 --> 01:48:30,520

anyone ready tomorrow i'm ready

1476
01:48:56,629 --> 01:48:37,140
[Music]

1477
01:48:56,639 --> 01:49:00,470
nice

1478
01:49:00,480 --> 01:49:21,780
um

1479
01:49:25,589 --> 01:49:23,480
[Applause]

1480
01:49:37,960 --> 01:49:25,599
[Music]

1481
01:49:37,970 --> 01:49:41,430
[Applause]

1482
01:49:44,870 --> 01:49:43,270
uh now that you're both egressed you can

1483
01:49:46,629 --> 01:49:44,880
turn on your hekas and we're ready to

1484
01:49:48,470 --> 01:49:46,639
come here's your right shoulder but he

1485
01:49:50,310 --> 01:49:48,480
checked where you are

1486
01:49:52,709 --> 01:49:50,320
right that's your right shoulder

1487
01:49:59,270 --> 01:49:52,719
what's that to your right shoulder okay

1488
01:50:07,330 --> 01:50:00,550

when you're ready and then i'll copy

1489

01:50:07,340 --> 01:50:17,510

[Applause]

1490

01:50:17,520 --> 01:50:29,189

checklist

1491

01:50:29,199 --> 01:50:31,750

let's see

1492

01:50:34,629 --> 01:50:33,669

he has to go underneath

1493

01:50:46,310 --> 01:50:34,639

here

1494

01:50:52,229 --> 01:50:48,629

and release from your left

1495

01:50:56,229 --> 01:50:53,270

uh

1496

01:50:58,070 --> 01:50:56,239

kimbrough is outside to join pesquet we

1497

01:50:59,589 --> 01:50:58,080

should be seeing our first view from

1498

01:51:02,550 --> 01:50:59,599

helmet cameras

1499

01:51:05,510 --> 01:51:02,560

each crew member has two types of helmet

1500

01:51:07,430 --> 01:51:05,520

cameras the conventional ones that you

1501
01:51:08,229 --> 01:51:07,440
are accustomed to seeing

1502
01:51:09,750 --> 01:51:08,239
with

1503
01:51:10,870 --> 01:51:09,760
pesquez

1504
01:51:13,189 --> 01:51:10,880
number

1505
01:51:15,910 --> 01:51:13,199
on his helmet camera of 20 in the lower

1506
01:51:17,669 --> 01:51:15,920
right hand corner once they're activated

1507
01:51:19,109 --> 01:51:17,679
kimbrough's helmet camera number will be

1508
01:51:21,109 --> 01:51:19,119
22

1509
01:51:23,589 --> 01:51:21,119
they also will be turning on high

1510
01:51:25,030 --> 01:51:23,599
definition cameras that are mounted on

1511
01:51:27,910 --> 01:51:25,040
their spacesuits

1512
01:51:29,350 --> 01:51:27,920
for uh even better views of some of the

1513
01:51:32,070 --> 01:51:29,360

work that they'll be doing once they

1514

01:51:33,430 --> 01:51:32,080

reach the p6 truss on the far left

1515

01:51:35,430 --> 01:51:33,440

section of the backbone of the

1516

01:51:37,109 --> 01:51:35,440

international space station

1517

01:51:39,910 --> 01:51:37,119

shane kimbrough now

1518

01:51:41,669 --> 01:51:39,920

on the right in the unmarked suit extra

1519

01:51:44,390 --> 01:51:41,679

vehicular crew member number two has

1520

01:51:46,470 --> 01:51:44,400

joined pesquet outside they will make

1521

01:51:48,470 --> 01:51:46,480

sure that they have all of their tools

1522

01:51:51,030 --> 01:51:48,480

and tethers configured properly

1523

01:51:57,270 --> 01:51:51,040

before they begin to make their way

1524

01:52:14,870 --> 01:51:59,030

okay

1525

01:52:19,270 --> 01:52:17,510

green leds

1526
01:52:21,030 --> 01:52:19,280
and going down i see

1527
01:52:24,629 --> 01:52:21,040
three thumbs up

1528
01:52:28,790 --> 01:52:26,470
three stops up for a brt

1529
01:52:30,550 --> 01:52:28,800
two handles down

1530
01:52:32,390 --> 01:52:30,560
and i see

1531
01:52:33,750 --> 01:52:32,400
the waist feather

1532
01:52:35,669 --> 01:52:33,760
is going

1533
01:52:37,189 --> 01:52:35,679
from your right steering extender lost

1534
01:52:38,229 --> 01:52:37,199
black on black to the yellow waist

1535
01:52:41,510 --> 01:52:38,239
better

1536
01:52:43,510 --> 01:52:41,520
locked black on black both the v-cook

1537
01:52:46,310 --> 01:52:43,520
and the small hook looks like a good

1538
01:52:48,550 --> 01:52:46,320

stick okay and you got the idea bag on

1539

01:52:50,149 --> 01:52:48,560

your main or station right there

1540

01:52:51,830 --> 01:52:50,159

yeah that's very good

1541

01:52:53,030 --> 01:52:51,840

all right let's see two green lights on

1542

01:52:56,229 --> 01:52:53,040

here

1543

01:53:00,149 --> 01:52:56,239

later on guys are down

1544

01:53:02,229 --> 01:53:00,159

any workstation tabs one

1545

01:53:04,470 --> 01:53:02,239

and two are up

1546

01:53:07,270 --> 01:53:04,480

the rt tab is up

1547

01:53:09,750 --> 01:53:07,280

safer handles are down

1548

01:53:10,830 --> 01:53:09,760

i see your sticky cutters just out your

1549

01:53:13,669 --> 01:53:10,840

left side

1550

01:53:15,750 --> 01:53:13,679

there it all looks clear you're like

1551

01:53:17,990 --> 01:53:15,760

regular skewed behind you

1552

01:53:20,149 --> 01:53:18,000

make sure to get it complete okay sounds

1553

01:53:22,149 --> 01:53:20,159

good

1554

01:53:23,510 --> 01:53:22,159

without jenny if you agree i'll make my

1555

01:53:25,270 --> 01:53:23,520

way to p1

1556

01:53:26,790 --> 01:53:25,280

uh copy good buddy checks i'll just take

1557

01:53:30,390 --> 01:53:26,800

a baseline half check from you and then

1558

01:53:33,910 --> 01:53:32,390

correct and the hat is right for

1559

01:53:35,910 --> 01:53:33,920

everyone

1560

01:53:38,070 --> 01:53:35,920

i have pvp

1561

01:53:40,229 --> 01:53:38,080

copy dry hats with that tomorrow you're

1562

01:53:42,709 --> 01:53:40,239

right you can translate to p1 we're

1563

01:53:43,990 --> 01:53:42,719

looking for bay 12 of a mile marker for

1564

01:53:45,750 --> 01:53:44,000

you when you're ready

1565

01:53:48,390 --> 01:53:45,760

and shane you'll be attaching the cable

1566

01:53:53,350 --> 01:53:48,400

bag bundle to the apfr and airlock with

1567

01:53:57,510 --> 01:53:55,270

shane kimbrough reporting a good

1568

01:53:59,830 --> 01:53:57,520

configuration of all the tools and

1569

01:54:02,310 --> 01:53:59,840

tethers the hap reference

1570

01:54:05,109 --> 01:54:02,320

made by them and uh

1571

01:54:07,350 --> 01:54:05,119

spacewalk uh communicator jenny seidi

1572

01:54:09,589 --> 01:54:07,360

here in mission control is the acronym

1573

01:54:11,669 --> 01:54:09,599

for helmet absorption pad

1574

01:54:14,550 --> 01:54:11,679

that is the the device in the space

1575

01:54:15,270 --> 01:54:14,560

walker's helmets to do exactly what it's

1576

01:54:17,669 --> 01:54:15,280

uh

1577

01:54:20,310 --> 01:54:17,679

implied and that is absorb any

1578

01:54:21,750 --> 01:54:20,320

perspiration or other condensation that

1579

01:54:23,589 --> 01:54:21,760

may build up

1580

01:54:26,790 --> 01:54:23,599

inside their helmets during the course

1581

01:54:28,070 --> 01:54:26,800

of the spacewalk

1582

01:54:31,990 --> 01:54:28,080

the

1583

01:54:35,189 --> 01:54:32,000

internal battery power

1584

01:54:37,750 --> 01:54:35,199

at 7 11 am east central time 8 11 a.m

1585

01:54:39,669 --> 01:54:37,760

eastern time to mark the official start

1586

01:54:42,470 --> 01:54:39,679

of this spacewalk

1587

01:54:44,950 --> 01:54:42,480

the 239th for station assembly

1588

01:54:46,550 --> 01:54:44,960

maintenance and upgrades the seventh for

1589

01:54:51,030 --> 01:54:46,560

shane kimbrough and the third for

1590

01:54:54,310 --> 01:54:52,550

all right i'm on phase one if it's

1591

01:54:57,669 --> 01:54:54,320

better it's clear

1592

01:55:05,300 --> 01:55:00,149

capita you're looking for mile marker

1593

01:56:29,030 --> 01:55:07,189

[Music]

1594

01:56:33,750 --> 01:56:31,589

shane once you've bundled that cable bag

1595

01:56:42,550 --> 01:56:33,760

to the apfr you can stow the apfr in

1596

01:56:46,709 --> 01:56:44,629

our first helmet camera view from tomah

1597

01:56:48,629 --> 01:56:46,719

pesquet as he begins to make his way

1598

01:56:50,629 --> 01:56:48,639

down the port truss

1599

01:56:54,070 --> 01:56:50,639

of the international space station

1600

01:56:56,550 --> 01:56:54,080

incrementally using handrails

1601
01:56:59,350 --> 01:56:56,560
to make his way uh towards uh the

1602
01:57:01,910 --> 01:56:59,360
ultimate uh destination which is the p6

1603
01:57:03,109 --> 01:57:01,920
truss where he and kimbrough will begin

1604
01:57:04,709 --> 01:57:03,119
to work

1605
01:57:07,750 --> 01:57:04,719
to remove

1606
01:57:09,350 --> 01:57:07,760
the irosa the iss rollout solar array

1607
01:57:11,910 --> 01:57:09,360
from flight support equipment that's

1608
01:57:13,510 --> 01:57:11,920
mounted on the truss of the station

1609
01:57:16,229 --> 01:57:13,520
to begin the

1610
01:57:18,629 --> 01:57:16,239
intricate process of unbolting

1611
01:57:20,709 --> 01:57:18,639
a variety of mechanisms that will lead

1612
01:57:50,709 --> 01:57:20,719
to the deployment of that array later in

1613
01:57:50,719 --> 01:57:57,510

looking for a check on your wheels

1614

01:58:08,560 --> 01:57:59,270

my

1615

01:58:08,570 --> 01:58:13,189

[Music]

1616

01:58:13,199 --> 01:58:18,470

you can tether to ev2's anchor hook

1617

01:58:18,480 --> 01:58:28,610

copy

1618

01:58:28,620 --> 01:58:38,160

[Music]

1619

01:58:38,170 --> 01:59:01,109

[Applause]

1620

01:59:01,119 --> 01:59:04,709

and left waist better

1621

01:59:09,030 --> 01:59:07,430

you'll be attaching ev2's anchor hook to

1622

01:59:11,669 --> 01:59:09,040

3651

1623

01:59:29,109 --> 01:59:11,679

which is nader of the handrail you place

1624

01:59:33,669 --> 01:59:31,589

hooking on 3651

1625

01:59:35,430 --> 01:59:33,679

the gate is closed slide or locked black

1626
01:59:38,310 --> 01:59:35,440
on black

1627
01:59:41,350 --> 01:59:38,320
copy that is a good load path with that

1628
01:59:43,189 --> 01:59:41,360
i see shane has picked up the apfr at

1629
01:59:44,790 --> 01:59:43,199
the airlock so when you're ready

1630
01:59:46,550 --> 01:59:44,800
tomorrow you can give shane a go to

1631
01:59:49,830 --> 01:59:46,560
release his tether from the airlock

1632
01:59:54,950 --> 01:59:53,370
send your tether to 3651 that is uh

1633
01:59:56,629 --> 01:59:54,960
[Music]

1634
02:00:00,550 --> 01:59:56,639
you have to go

1635
02:00:00,560 --> 02:00:35,910
thanks tomorrow

1636
02:00:44,390 --> 02:00:37,589
and i'm reviewing my transformation

1637
02:00:44,400 --> 02:00:50,010
say your last

1638
02:01:18,470 --> 02:01:08,400

[Music]

1639

02:01:24,000 --> 02:01:20,629

to the fse stanton delta i have a

1640

02:01:24,010 --> 02:01:31,589

[Music]

1641

02:01:37,750 --> 02:01:34,390

warning grapple shaft grapple shaft and

1642

02:01:39,669 --> 02:01:37,760

perfect coupling teeth are no touch zone

1643

02:01:41,830 --> 02:01:39,679

caution no sudden movements or quick

1644

02:01:44,310 --> 02:01:41,840

stops on the fse we want you to be

1645

02:01:47,189 --> 02:01:44,320

translating slowly

1646

02:01:50,310 --> 02:01:47,199

wait until fse motion dampens out before

1647

02:01:52,470 --> 02:01:50,320

imparting any loads

1648

02:01:54,950 --> 02:01:52,480

when shane is on the fse as well do not

1649

02:02:00,850 --> 02:01:54,960

simultaneously impart loads

1650

02:02:00,860 --> 02:02:15,910

[Music]

1651

02:02:15,920 --> 02:02:26,300

make my way up

1652

02:02:26,310 --> 02:02:37,430

[Music]

1653

02:02:42,070 --> 02:02:38,870

thermal cover it doesn't seem to want to

1654

02:02:45,270 --> 02:02:43,750

copy shane you're closing the thermal

1655

02:02:49,270 --> 02:02:45,280

cover

1656

02:02:53,189 --> 02:02:51,830

it's not staying close though jenny

1657

02:02:54,550 --> 02:02:53,199

copy

1658

02:02:56,310 --> 02:02:54,560

uh we're looking into that chain in the

1659

02:03:04,040 --> 02:02:56,320

meantime can i get check uh check on

1660

02:03:04,050 --> 02:03:13,589

[Applause]

1661

02:03:18,149 --> 02:03:16,470

and tomah we see you on the ffe you're

1662

02:03:21,430 --> 02:03:18,159

looking to stow your cool off bag on the

1663

02:03:21,440 --> 02:03:28,550

i'll be installing your bag

1664

02:03:28,560 --> 02:04:08,310

shane kimbrough

1665

02:04:13,030 --> 02:04:11,750

when pesquet arrives uh at the site

1666

02:04:14,310 --> 02:04:13,040

upon which

1667

02:04:16,790 --> 02:04:14,320

the uh

1668

02:04:19,189 --> 02:04:16,800

solar arrays are located on uh the

1669

02:04:21,109 --> 02:04:19,199

flight support equipment that carried

1670

02:04:23,910 --> 02:04:21,119

them to orbit in the trunk of the crew

1671

02:04:27,030 --> 02:04:23,920

dragon that spacex launched

1672

02:04:28,950 --> 02:04:27,040

to the station back on june 3rd

1673

02:04:31,589 --> 02:04:28,960

he will use a pistol grip tool a

1674

02:04:33,589 --> 02:04:31,599

high-tech screwdriver basically

1675

02:04:35,109 --> 02:04:33,599

to release

1676
02:04:38,229 --> 02:04:35,119
bolts that

1677
02:04:40,069 --> 02:04:38,239
are called outer hinge restraint bolts

1678
02:04:42,229 --> 02:04:40,079
holding the array

1679
02:04:45,030 --> 02:04:42,239
in question that will be the subject of

1680
02:04:47,669 --> 02:04:45,040
today's installation for the 2b channel

1681
02:04:49,109 --> 02:04:47,679
power augmentation for the international

1682
02:04:51,589 --> 02:04:49,119
space station

1683
02:04:55,030 --> 02:04:51,599
kimbrough meanwhile will translate

1684
02:04:56,229 --> 02:04:55,040
outboard to the p6 truss to await

1685
02:04:58,550 --> 02:04:56,239
pesquet

1686
02:05:00,790 --> 02:04:58,560
carrying the solar array

1687
02:05:02,149 --> 02:05:00,800
that will be installed on the p6 truss

1688
02:05:04,950 --> 02:05:02,159

over to him

1689

02:05:06,629 --> 02:05:04,960

after pesquet affixes an articulating

1690

02:05:45,589 --> 02:05:06,639

portable foot restraint to the end of

1691

02:05:49,189 --> 02:05:47,189

and shane from what we see it's holding

1692

02:05:50,950 --> 02:05:49,199

well now um do you think if you were to

1693

02:05:53,200 --> 02:05:50,960

translate outboard it would stay where

1694

02:05:56,550 --> 02:05:53,210

it is looks pretty good to us

1695

02:05:59,830 --> 02:05:58,229

yeah it looks good to me i can't tell

1696

02:06:07,430 --> 02:05:59,840

where it's you know fashion outfit looks

1697

02:06:23,109 --> 02:06:08,629

all right shane you can start your

1698

02:06:26,740 --> 02:06:24,709

stand by shane it looks like the thermal

1699

02:06:42,390 --> 02:06:26,750

cover just opened

1700

02:06:42,400 --> 02:06:45,830

happy tomorrow

1701

02:07:06,390 --> 02:06:48,310

you can ready your pgt you'll be working

1702

02:07:11,510 --> 02:07:09,109

shane kimbrough continuing

1703

02:07:13,669 --> 02:07:11,520

work to try to close and secure the

1704

02:07:16,069 --> 02:07:13,679

outer thermal hatch cover

1705

02:07:18,870 --> 02:07:16,079

over the crew lock section of the quest

1706

02:07:21,430 --> 02:07:18,880

airlock before he begins his journey out

1707

02:07:23,430 --> 02:07:21,440

to the far left section of the truss of

1708

02:07:26,069 --> 02:07:23,440

the international space station

1709

02:07:28,629 --> 02:07:26,079

thomas pesquet making his way to the

1710

02:07:31,270 --> 02:07:28,639

location where the the

1711

02:07:34,390 --> 02:07:31,280

basically the carrier holding the first

1712

02:07:39,030 --> 02:07:34,400

pair of virosa iss roll out solar arrays

1713

02:07:44,229 --> 02:07:40,870

jenny it's closed again and it seems to

1714

02:07:48,149 --> 02:07:45,750

copy shane we're having a discussion

1715

02:07:50,310 --> 02:07:48,159

down here about whether we want you to

1716

02:07:54,149 --> 02:07:50,320

uh put a tether on it that's the hold up

1717

02:08:09,730 --> 02:07:54,159

so i'm gonna work for you on that soon

1718

02:08:09,740 --> 02:08:17,990

[Music]

1719

02:08:18,000 --> 02:08:27,350

bravo two counter two

1720

02:08:38,630 --> 02:08:30,170

good words

1721

02:08:41,990 --> 02:08:40,470

[Music]

1722

02:08:43,910 --> 02:08:42,000

and shane we're going to have you put an

1723

02:08:45,189 --> 02:08:43,920

adjustable equipment tether on the

1724

02:08:46,790 --> 02:08:45,199

thermal cover

1725

02:09:00,170 --> 02:08:46,800

to the circular handrail just to keep it

1726

02:09:00,180 --> 02:09:03,270

[Applause]

1727

02:09:08,550 --> 02:09:04,950

those are good settings you'll be

1728

02:09:09,830 --> 02:09:08,560

releasing r5 18 to 20 turns

1729

02:09:10,870 --> 02:09:09,840

the bolt will spring out when fully

1730

02:09:12,149 --> 02:09:10,880

released

1731

02:09:15,910 --> 02:09:12,159

and we'll be checking for a release

1732

02:09:21,189 --> 02:09:18,709

are you releasing i5 all five sides

1733

02:09:47,500 --> 02:09:21,199

sixteen place turns

1734

02:09:59,510 --> 02:09:56,390

[Music]

1735

02:09:59,520 --> 02:10:11,510

copy

1736

02:10:11,520 --> 02:10:17,669

i got 17 pounds

1737

02:10:22,229 --> 02:10:20,629

see the ball popped out

1738

02:10:33,830 --> 02:10:22,239

i'll give it a couple more turns if

1739

02:10:33,840 --> 02:10:40,629

copy r5 released

1740

02:10:45,109 --> 02:10:42,470

and shane we recommend

1741

02:10:47,030 --> 02:10:45,119

not wrapping the adjustable too tightly

1742

02:10:48,709 --> 02:10:47,040

around the thermal cover we just want a

1743

02:10:49,990 --> 02:10:48,719

simple hook on it to keep it pretty much

1744

02:10:52,229 --> 02:10:50,000

closed but we don't want anything that's

1745

02:11:01,830 --> 02:10:52,239

going to be too difficult to undo if you

1746

02:11:06,709 --> 02:11:05,109

shane we recommend hooking um to the the

1747

02:11:08,550 --> 02:11:06,719

loop which is by your right hand on the

1748

02:11:17,750 --> 02:11:08,560

circular handrail that looks like a good

1749

02:11:21,030 --> 02:11:19,030

and to ma

1750

02:11:41,510 --> 02:11:21,040

with r5 released your next step is going

1751

02:11:45,830 --> 02:11:43,830

i think i'm doing a perfect swap correct

1752

02:11:48,229 --> 02:11:45,840

hey firm that was a handover guys so i'm

1753

02:11:50,149 --> 02:11:48,239

back with you now um your next step

1754

02:11:51,750 --> 02:11:50,159

tomorrow is to stow your ptt on the

1755

02:11:54,470 --> 02:11:51,760

tower handrail and then we have you

1756

02:11:56,069 --> 02:11:54,480

putting the socket on shane's pgt but

1757

02:11:58,069 --> 02:11:56,079

we're talking next steps since uh we're

1758

02:12:03,430 --> 02:11:58,079

having shane troubleshoot that issue

1759

02:12:13,669 --> 02:12:05,109

okay

1760

02:12:13,679 --> 02:12:17,430

copy

1761

02:12:22,390 --> 02:12:19,910

we're still getting your a helmet camp

1762

02:12:23,589 --> 02:12:22,400

back with us after the handover so we'll

1763

02:12:32,060 --> 02:12:23,599

get eyes on

1764

02:12:32,070 --> 02:13:03,910

[Music]

1765

02:13:06,870 --> 02:13:05,350

you need me to face with jimmy or you

1766

02:13:08,709 --> 02:13:06,880

guys are looking at

1767

02:13:23,730 --> 02:13:08,719

cover stuff

1768

02:13:23,740 --> 02:13:29,189

[Music]

1769

02:13:32,950 --> 02:13:30,950

we'll have next steps for you shortly

1770

02:13:34,069 --> 02:13:32,960

and shane uh we're taking our time here

1771

02:13:35,430 --> 02:13:34,079

because we want to make sure that we're

1772

02:13:38,390 --> 02:13:35,440

really in a good config so we're going

1773

02:13:40,069 --> 02:13:38,400

to have you um tether it such that the

1774

02:13:42,229 --> 02:13:40,079

tether point that you're using is far

1775

02:13:44,069 --> 02:13:42,239

from the hinge on the thermal cover so

1776

02:13:50,790 --> 02:13:44,079

at the actual opening so toward your

1777

02:13:55,510 --> 02:13:53,030

all right i'll move it over there copy

1778

02:14:02,149 --> 02:13:55,520

thanks shane that'll be uh using that

1779

02:14:05,430 --> 02:14:03,990

and that's not the correct hook shane

1780

02:14:07,830 --> 02:14:05,440

we're looking for the hook which is by

1781

02:14:09,270 --> 02:14:07,840

your right hand to move to the hook on

1782

02:14:14,069 --> 02:14:09,280

the circular handrail near your left

1783

02:14:17,109 --> 02:14:15,750

oh okay gotcha

1784

02:14:18,149 --> 02:14:17,119

that's already removed the whole thing

1785

02:14:25,350 --> 02:14:18,159

i'm sorry

1786

02:14:29,030 --> 02:14:28,310

with uh tomah pesquet having arrived at

1787

02:14:30,310 --> 02:14:29,040

the

1788

02:14:33,270 --> 02:14:30,320

work site

1789

02:14:35,830 --> 02:14:33,280

where the iss roll-up solar arrays are

1790

02:14:38,310 --> 02:14:35,840

located in this view from his helmet

1791

02:14:40,790 --> 02:14:38,320

camera high definition view

1792

02:14:42,310 --> 02:14:40,800

shane kimbrough now uh working

1793

02:14:44,550 --> 02:14:42,320

to tether down

1794

02:14:46,950 --> 02:14:44,560

in place the outer thermal hatch cover

1795

02:14:50,629 --> 02:14:46,960

on the quest airlock that has been a bit

1796

02:14:55,750 --> 02:14:53,990

35 minutes into the spacewalk pesky will

1797

02:14:59,510 --> 02:14:55,760

begin to set up shop

1798

02:15:02,229 --> 02:14:59,520

to release an outer hinge restraint bolt

1799

02:15:05,030 --> 02:15:02,239

that will free up

1800

02:15:07,350 --> 02:15:05,040

the solar array that will be extracted

1801

02:15:09,589 --> 02:15:07,360

that he will haul over to the p6 truss

1802

02:15:10,709 --> 02:15:09,599

and ultimately hand off to shane

1803

02:15:13,510 --> 02:15:10,719

kimbrough

1804

02:15:15,430 --> 02:15:13,520

in a choreography that will ultimately

1805

02:15:17,350 --> 02:15:15,440

result in

1806

02:15:20,229 --> 02:15:17,360

that array being installed on a

1807

02:15:22,950 --> 02:15:20,239

modification kit a bracket basically

1808

02:15:27,109 --> 02:15:22,960

at the mast canister base of the p6

1809

02:15:33,270 --> 02:15:29,910

and then ultimately unfolded once a

1810

02:15:34,870 --> 02:15:33,280

series of other bolts are released to

1811

02:15:36,550 --> 02:15:34,880

enable the

1812

02:15:42,310 --> 02:15:36,560

tension laden

1813

02:15:46,470 --> 02:15:44,870

right big picture for you too uh

1814

02:15:49,189 --> 02:15:46,480

we're having shane translate out to the

1815

02:15:50,870 --> 02:15:49,199

fsc and he's going to drop his pgt there

1816

02:15:52,709 --> 02:15:50,880

tomorrow you'll be putting a socket on

1817

02:15:56,069 --> 02:15:52,719

that pgt to continue with the

1818

02:16:05,510 --> 02:15:56,079

anti-rotation device removal the ards so

1819

02:16:05,520 --> 02:16:27,030

all right 7 16 12 inch target machine

1820

02:16:27,040 --> 02:16:35,429

come on we're going to have you stand by

1821

02:16:35,439 --> 02:16:52,950

sending our journey

1822

02:16:52,960 --> 02:16:55,750

thank you

1823

02:16:55,760 --> 02:17:03,669

coffee

1824

02:17:03,679 --> 02:17:08,629

jenny you're breaking up

1825

02:17:08,639 --> 02:17:14,549

happy tamar

1826

02:17:14,559 --> 02:17:19,110

i know you're coming in here

1827

02:17:19,120 --> 02:17:25,030

all right keep me updated on it

1828

02:17:25,040 --> 02:17:31,589

i will

1829

02:17:35,429 --> 02:17:33,589

and tomorrow we're just uh keeping an

1830

02:17:36,790 --> 02:17:35,439

eye on your medics wanting to come down

1831

02:17:38,870 --> 02:17:36,800

a little bit which is why we had you

1832

02:17:42,549 --> 02:17:38,880

stand by for a little while we're

1833

02:17:44,629 --> 02:17:42,559

pushing with the nominal timeline now so

1834

02:17:49,830 --> 02:17:44,639

we're seeing your medox return to to a

1835

02:17:56,230 --> 02:17:52,790

sounds good thanks for keeping me honest

1836

02:18:02,309 --> 02:17:56,240

no problem shane's around three three

1837

02:18:06,950 --> 02:18:04,389

i see i see him coming

1838

02:18:07,910 --> 02:18:06,960

in between the two high roasters

1839

02:18:17,429 --> 02:18:07,920

nice

1840

02:18:22,709 --> 02:18:19,990

there's a good view of tomah pesquet at

1841

02:18:25,990 --> 02:18:22,719

the flight support equipment carrier if

1842

02:18:28,389 --> 02:18:26,000

you will in which the two

1843

02:18:29,589 --> 02:18:28,399

the first pair of iss rollout solar

1844

02:18:31,349 --> 02:18:29,599

eraser

1845

02:18:33,830 --> 02:18:31,359

housed

1846

02:18:36,309 --> 02:18:33,840

he will begin work very soon to begin

1847

02:18:38,950 --> 02:18:36,319

loosening bolts and anti-rotation

1848

02:18:41,030 --> 02:18:38,960

devices as they are called basically

1849

02:18:42,549 --> 02:18:41,040

launch constraints

1850

02:18:45,270 --> 02:18:42,559

that

1851

02:18:47,429 --> 02:18:45,280

held the arrays in place

1852

02:18:49,589 --> 02:18:47,439

when they were launched back on june 3rd

1853

02:18:51,589 --> 02:18:49,599

in the trunk of the crew dragon cargo

1854

02:18:53,750 --> 02:18:51,599

vehicle that spacex

1855

02:18:56,389 --> 02:18:53,760

launched on a falcon 9 rocket from the

1856

02:18:58,070 --> 02:18:56,399

kennedy space center to bring to orbit

1857

02:19:01,270 --> 02:18:58,080

there's a rays arriving at the space

1858

02:19:04,150 --> 02:19:01,280

station on june 5th and then robotically

1859

02:19:08,150 --> 02:19:04,160

removed from the trunk of

1860

02:19:10,709 --> 02:19:08,160

cargo dragon and mounted at that

1861

02:19:12,950 --> 02:19:10,719

payload attachment fixture for the time

1862

02:19:14,389 --> 02:19:12,960

being awaiting the start of today's

1863

02:19:16,389 --> 02:19:14,399

spacewalk

1864

02:19:18,870 --> 02:19:16,399

in the foreground is the trusty

1865

02:19:21,509 --> 02:19:18,880

canadarm2 robotic arm

1866

02:19:22,629 --> 02:19:21,519

that uh astronaut megan mcarthur will be

1867

02:19:24,389 --> 02:19:22,639

operating

1868

02:19:26,950 --> 02:19:24,399

a short time from now

1869

02:19:30,469 --> 02:19:26,960

to move tomah pesquet

1870

02:19:33,270 --> 02:19:30,479

to the p6 worksite as he carries the

1871

02:19:34,389 --> 02:19:33,280

arrays manually the first

1872

02:19:36,950 --> 02:19:34,399

solar array

1873

02:19:39,990 --> 02:19:36,960

to hand off to shane kimbrough

1874

02:19:42,469 --> 02:19:40,000

before it is mounted on a bracket at the

1875

02:20:13,830 --> 02:19:42,479

base at the mast canister base

1876
02:20:17,190 --> 02:20:15,670
i got you each other in front of me here

1877
02:20:19,030 --> 02:20:17,200
i'm just here to start with cheetah

1878
02:20:42,070 --> 02:20:19,040
carts

1879
02:20:42,080 --> 02:20:45,910
your feet there tomorrow

1880
02:20:45,920 --> 02:21:08,790
nice

1881
02:21:18,590 --> 02:21:09,990
what do you want me to do tomorrow come

1882
02:21:22,309 --> 02:21:20,230
[Music]

1883
02:21:24,870 --> 02:21:22,319
shane you just need to get your pgt to

1884
02:21:26,550 --> 02:21:24,880
tomah um we have

1885
02:21:28,389 --> 02:21:26,560
the publish steps to stow it on the

1886
02:21:33,510 --> 02:21:28,399
tower handrail but if you can pass it to

1887
02:21:36,150 --> 02:21:34,630
yeah

1888
02:21:37,510 --> 02:21:36,160

that's what we'll try and do you stay

1889

02:21:38,710 --> 02:21:37,520

there tomorrow on the pallet now it's

1890

02:21:57,230 --> 02:21:38,720

you okay

1891

02:22:10,150 --> 02:22:00,710

[Music]

1892

02:22:10,160 --> 02:22:14,210

um

1893

02:22:14,220 --> 02:22:32,710

[Applause]

1894

02:22:32,720 --> 02:22:38,790

there you have it image of yours

1895

02:22:42,330 --> 02:22:39,830

thank you

1896

02:22:43,830 --> 02:22:42,340

come back any time

1897

02:22:45,910 --> 02:22:43,840

[Applause]

1898

02:22:46,950 --> 02:22:45,920

all right let me move slowly off of here

1899

02:22:48,630 --> 02:22:46,960

and then i'll let you know when i'm

1900

02:22:54,900 --> 02:22:48,640

clear yeah i'll wait for you to be going

1901

02:23:02,260 --> 02:23:00,750

[Music]

1902

02:23:05,190 --> 02:23:02,270

[Applause]

1903

02:23:06,630 --> 02:23:05,200

[Music]

1904

02:23:23,590 --> 02:23:06,640

all right i'm just going to back up the

1905

02:23:23,600 --> 02:23:35,190

um

1906

02:23:35,200 --> 02:23:50,710

uh

1907

02:24:05,440 --> 02:23:52,230

clear

1908

02:24:05,450 --> 02:24:16,070

[Music]

1909

02:24:20,950 --> 02:24:18,630

45 minutes into uh the space walk shane

1910

02:24:23,270 --> 02:24:20,960

kimbrough and tomah pesquet are at the

1911

02:24:26,469 --> 02:24:23,280

flight support equipment structure

1912

02:24:29,110 --> 02:24:26,479

holding the first pair of iss roll out

1913

02:24:31,349 --> 02:24:29,120

solar arrays that were launched a couple

1914

02:24:32,710 --> 02:24:31,359

of weeks ago aboard the spacex cargo

1915

02:24:35,990 --> 02:24:32,720

dragon vehicle

1916

02:24:38,870 --> 02:24:36,000

to the international space station

1917

02:24:40,389 --> 02:24:38,880

each one of these arrays weighs 750

1918

02:24:43,030 --> 02:24:40,399

pounds of mass

1919

02:24:45,830 --> 02:24:43,040

of course weightless in orbit

1920

02:24:48,469 --> 02:24:45,840

each new solar array will produce more

1921

02:24:51,270 --> 02:24:48,479

than 20 kilowatts of electricity

1922

02:24:52,469 --> 02:24:51,280

eventually upping the power capability

1923

02:24:55,429 --> 02:24:52,479

of the station

1924

02:24:56,870 --> 02:24:55,439

by some 120 kilowatts this is the first

1925

02:24:59,190 --> 02:24:56,880

of three pairs

1926
02:25:01,429 --> 02:24:59,200
of these arrays that will be installed

1927
02:25:02,469 --> 02:25:01,439
at various truss structures of the

1928
02:25:04,790 --> 02:25:02,479
station

1929
02:25:07,670 --> 02:25:04,800
today and on sunday in the second of

1930
02:25:11,030 --> 02:25:07,680
this first set of spacewalks

1931
02:25:13,510 --> 02:25:11,040
the 2b and 4b power channels of the p6

1932
02:25:16,790 --> 02:25:13,520
truss will be augmented by these arrays

1933
02:25:19,110 --> 02:25:16,800
they do not replace the older legacy

1934
02:25:20,309 --> 02:25:19,120
solar arrays they simply augment the

1935
02:25:23,270 --> 02:25:20,319
power

1936
02:25:26,070 --> 02:25:23,280
output of the existing arrays

1937
02:25:29,670 --> 02:25:26,080
the next two sets of arrays will

1938
02:25:32,230 --> 02:25:29,680

be installed on the p4 and s4 trusses

1939

02:25:35,670 --> 02:25:32,240

and then ultimately the final pair on

1940

02:25:37,670 --> 02:25:35,680

the s6 and s4 truss structures of the

1941

02:25:39,510 --> 02:25:37,680

international space station

1942

02:25:41,670 --> 02:25:39,520

six of the eight power channels on the

1943

02:25:43,910 --> 02:25:41,680

station to be augmented those are the

1944

02:25:46,469 --> 02:25:43,920

channels that have uh indicated the

1945

02:25:48,070 --> 02:25:46,479

greatest set of degradation over the

1946

02:25:49,910 --> 02:25:48,080

course of

1947

02:25:52,230 --> 02:25:49,920

some two decades of use at the

1948

02:25:53,990 --> 02:25:52,240

international outpost and also

1949

02:25:55,750 --> 02:25:54,000

accommodate the highest

1950

02:25:58,070 --> 02:25:55,760

usage loads

1951

02:26:01,270 --> 02:25:58,080

for various payloads and scientific

1952

02:26:11,990 --> 02:26:01,280

experiments and new modules to arrive at

1953

02:26:15,910 --> 02:26:13,990

some of your warnings your cautions are

1954

02:26:18,389 --> 02:26:15,920

avoid contact with the deployed and

1955

02:26:20,790 --> 02:26:18,399

stowed radiators and the battery adapter

1956

02:26:28,309 --> 02:26:20,800

plate cables on the iea are a snag

1957

02:26:33,030 --> 02:26:30,389

thank you

1958

02:26:35,030 --> 02:26:33,040

shane you're translating outboard to p6

1959

02:26:36,710 --> 02:26:35,040

i'll check your gauntlets are down and i

1960

02:26:41,910 --> 02:26:36,720

have a green hook location when you're

1961

02:26:46,389 --> 02:26:44,150

okay downloads are down and ready for

1962

02:26:55,030 --> 02:26:46,399

the same hook location

1963

02:26:59,910 --> 02:26:56,870

three four i've got

1964

02:27:01,030 --> 02:26:59,920

again i have the 7 16

1965

02:27:03,670 --> 02:27:01,040

12

1966

02:27:12,469 --> 02:27:03,680

on the green g2

1967

02:27:16,790 --> 02:27:14,630

project

1968

02:27:18,710 --> 02:27:16,800

excellent next steps for you toma are to

1969

02:27:21,190 --> 02:27:18,720

start releasing the anti-rotation

1970

02:27:24,309 --> 02:27:21,200

devices so i'll have you translate to

1971

02:27:30,309 --> 02:27:24,319

the charlie one bolt which is zenith and

1972

02:27:34,230 --> 02:27:33,030

i was waiting for charlie on board

1973

02:27:35,670 --> 02:27:34,240

this

1974

02:28:09,510 --> 02:27:35,680

board

1975

02:28:09,520 --> 02:28:19,990

uh

1976

02:28:23,750 --> 02:28:21,990

will be attaching an articulating

1977

02:28:26,389 --> 02:28:23,760

portable foot restraint at the end of

1978

02:28:28,230 --> 02:28:26,399

the canadarm2 robotic arm

1979

02:28:30,469 --> 02:28:28,240

that he will ultimately plant his feet

1980

02:28:32,870 --> 02:28:30,479

in to be driven by astronaut megan

1981

02:28:35,510 --> 02:28:32,880

mcarthur who will operate the arm from a

1982

02:28:39,110 --> 02:28:35,520

robotic workstation inside the station

1983

02:28:40,630 --> 02:28:39,120

he will carry the first iss rollout

1984

02:28:43,910 --> 02:28:40,640

solar array over

1985

02:28:46,389 --> 02:28:43,920

to the p6 truss where shane kimbrough

1986

02:28:48,870 --> 02:28:46,399

will set up another articulating

1987

02:28:52,070 --> 02:28:48,880

portable foot restraint so he has a

1988

02:28:54,309 --> 02:28:52,080

stability in receiving a handoff of that

1989

02:28:56,469 --> 02:28:54,319

array from pesquet at the appropriate

1990

02:29:09,980 --> 02:28:56,479

time to attach an adjustable equipment

1991

02:29:15,429 --> 02:29:12,790

[Applause]

1992

02:30:04,810 --> 02:29:15,439

you can translate outboard to p6 with

1993

02:30:15,750 --> 02:30:11,900

[Music]

1994

02:30:19,110 --> 02:30:17,590

your pgt settings

1995

02:30:26,230 --> 02:30:19,120

when you're ready for them

1996

02:30:26,240 --> 02:30:36,710

level 3 counter 2.

1997

02:30:41,030 --> 02:30:39,670

pesquet using a pistol grip tool

1998

02:30:43,910 --> 02:30:41,040

he will

1999

02:30:46,550 --> 02:30:43,920

use it for about 18 to 20 turns

2000

02:30:47,670 --> 02:30:46,560

until a outer hinge restraint bolt is

2001

02:30:50,790 --> 02:30:47,680

released

2002

02:30:51,750 --> 02:30:50,800

that essentially is the first step in

2003

02:30:54,790 --> 02:30:51,760

freeing

2004

02:30:56,550 --> 02:30:54,800

the first iss rollout solar array from

2005

02:31:08,150 --> 02:30:56,560

its flight support equipment that it was

2006

02:31:11,349 --> 02:31:09,750

obviously you guys can see that it's

2007

02:31:26,870 --> 02:31:11,359

night time just a reminder to adjust

2008

02:31:26,880 --> 02:31:29,990

bravo

2009

02:31:34,230 --> 02:31:31,270

good words

2010

02:31:40,469 --> 02:31:34,240

you'll be releasing the stop block bolt

2011

02:31:45,670 --> 02:31:42,770

copy

2012

02:32:18,389 --> 02:31:45,680

[Music]

2013

02:32:21,349 --> 02:32:19,670

i'm going to work on the settings now

2014

02:32:23,110 --> 02:32:21,359

that's right copy that's a good install

2015

02:32:26,870 --> 02:32:23,120

clocking of 12. we're looking for a

2016

02:32:32,710 --> 02:32:29,590

that's shane kimbrough installing uh

2017

02:32:36,710 --> 02:32:32,720

his articulating portable foot restraint

2018

02:32:39,750 --> 02:32:36,720

at the p6 truss work site that will be

2019

02:32:42,550 --> 02:32:39,760

the place where he receives the array

2020

02:32:50,790 --> 02:32:42,560

from tomah pesquet once that array is

2021

02:32:54,389 --> 02:32:52,150

and tomorrow when you have a minute

2022

02:32:59,670 --> 02:32:54,399

we'll get you to power cycle your heka

2023

02:33:04,790 --> 02:33:01,270

bye-bye

2024

02:33:10,230 --> 02:33:04,800

this pith knob is really stiff any ideas

2025

02:33:10,240 --> 02:33:15,270

okay i got the ard

2026

02:33:15,280 --> 02:33:21,429

bring it back to my new workstation

2027

02:33:30,710 --> 02:33:23,429

the mini workstation end effector might

2028

02:33:46,830 --> 02:33:32,630

okay i got the hourglass station you

2029

02:33:46,840 --> 02:33:57,030

[Music]

2030

02:33:57,040 --> 02:34:04,630

okay

2031

02:34:13,030 --> 02:34:07,349

i'm ready to return to your defaulting

2032

02:34:22,230 --> 02:34:16,070

your settings are bravo one clockwise

2033

02:34:26,870 --> 02:34:23,750

one

2034

02:34:31,750 --> 02:34:28,790

good read back and we're looking for

2035

02:34:38,309 --> 02:34:31,760

turning this bolt to torque like you say

2036

02:34:38,319 --> 02:34:45,730

10 charms

2037

02:34:51,349 --> 02:34:49,270

[Applause]

2038

02:34:52,870 --> 02:34:51,359

shane once you have those apfr settings

2039

02:34:54,309 --> 02:34:52,880

in we're looking for a check that the

2040

02:34:56,670 --> 02:34:54,319

pitch knob is popped out and you can

2041

02:35:00,309 --> 02:34:56,680

retrieve the cable bag bundle

2042

02:35:03,830 --> 02:35:01,110

okay

2043

02:35:05,590 --> 02:35:03,840

working on the cable diagram and i'll uh

2044

02:35:23,030 --> 02:35:05,600

finishing up these vfr settings that's

2045

02:35:29,429 --> 02:35:26,070

then yeah

2046

02:35:31,190 --> 02:35:29,439

green light 11.9 on the torque on that

2047

02:35:33,030 --> 02:35:31,200

five and a half wrench

2048

02:35:34,790 --> 02:35:33,040

i think maybe you've seen my haircuts

2049

02:35:35,910 --> 02:35:34,800

because the stop block has rotated a

2050

02:35:37,110 --> 02:35:35,920

little bit

2051

02:35:39,990 --> 02:35:37,120

and now

2052

02:35:42,469 --> 02:35:40,000

it's pushing against the fold of that

2053

02:35:44,230 --> 02:35:42,479

also the face of the extension that

2054

02:35:46,550 --> 02:35:44,240

holds

2055

02:35:47,510 --> 02:35:46,560

oh there's kind of a six millimeter

2056

02:35:49,270 --> 02:35:47,520

difference

2057

02:35:51,910 --> 02:35:49,280

from where it was before when it was

2058

02:35:54,070 --> 02:35:51,920

flush against the beam

2059

02:35:55,590 --> 02:35:54,080

that makes sense

2060

02:35:57,270 --> 02:35:55,600

yeah i follow what you're saying come on

2061

02:35:59,750 --> 02:35:57,280

we're checking on that but for now i

2062

02:36:07,350 --> 02:35:59,760

copy the torque of 11.9 a green light

2063

02:36:07,360 --> 02:36:19,290

[Music]

2064

02:36:19,300 --> 02:36:32,950

[Applause]

2065

02:36:36,230 --> 02:36:34,950

and tomorrow we talked about

2066

02:36:37,590 --> 02:36:36,240

that turn count down here we're

2067

02:36:39,270 --> 02:36:37,600

comfortable with you moving on in the

2068

02:36:42,070 --> 02:36:39,280

procedure for now so you can stow your

2069

02:36:49,650 --> 02:36:42,080

pgt and translate to charlie 2 which is

2070

02:36:49,660 --> 02:37:06,309

[Music]

2071

02:37:10,389 --> 02:37:07,750

i'm doing shane

2072

02:37:11,510 --> 02:37:10,399

i'm good i'm finishing up the apfrog

2073

02:37:13,910 --> 02:37:11,520

or the

2074

02:37:40,710 --> 02:37:13,920

cable bag i'm on prt now

2075

02:37:45,590 --> 02:37:43,429

as we approach the one hour mark into

2076
02:37:48,230 --> 02:37:45,600
today's spacewalk tomorrow pesquet in

2077
02:37:51,190 --> 02:37:48,240
this view from his helmet camera

2078
02:37:54,230 --> 02:37:51,200
continuing work with a pistol grip tool

2079
02:37:57,590 --> 02:37:54,240
to free up a series of bolts

2080
02:38:01,190 --> 02:37:57,600
that essentially were launch restraints

2081
02:38:03,830 --> 02:38:01,200
for the first of the irosa or iss roll

2082
02:38:06,389 --> 02:38:03,840
up solar arrays as they were housed in

2083
02:38:08,790 --> 02:38:06,399
the trunk of the cargo dragon vehicle

2084
02:38:17,030 --> 02:38:08,800
that spacex launched to the station two

2085
02:38:22,270 --> 02:38:19,110
copy that is a good config chain you can

2086
02:38:24,469 --> 02:38:22,280
translate outboard to handrail

2087
02:38:29,349 --> 02:38:24,479
5307 where you'll be sewing the cable

2088
02:38:29,359 --> 02:38:34,540

all right three zero seven

2089

02:39:30,070 --> 02:38:41,980

[Music]

2090

02:39:33,750 --> 02:39:31,510

shane and tomorrow we're around 30

2091

02:39:35,510 --> 02:39:33,760

seconds from handover i'll be back with

2092

02:39:38,790 --> 02:39:35,520

you after that

2093

02:40:38,710 --> 02:39:38,800

[Music]

2094

02:40:44,870 --> 02:40:40,630

we're

2095

02:40:49,590 --> 02:40:47,190

my journey of my uh

2096

02:40:57,190 --> 02:40:49,600

the free hook from my eight key in my

2097

02:41:08,309 --> 02:40:58,630

copy shane your

2098

02:41:08,319 --> 02:41:13,670

station is now on the arb

2099

02:41:13,680 --> 02:41:20,710

copy

2100

02:41:26,710 --> 02:41:23,990

the ard that you're hearing uh referred

2101
02:41:27,910 --> 02:41:26,720
to is the acronym for an anti-rotation

2102
02:41:30,230 --> 02:41:27,920
device

2103
02:41:33,750 --> 02:41:30,240
this is a feature on the flight support

2104
02:41:36,469 --> 02:41:33,760
equipment holding the irosa or iss

2105
02:41:38,309 --> 02:41:36,479
rollout solar arrays in place

2106
02:41:40,710 --> 02:41:38,319
that is essentially a launch restraint

2107
02:41:42,790 --> 02:41:40,720
that needs to be removed prior to

2108
02:41:45,670 --> 02:41:42,800
pesquet using his pistol grip tool to

2109
02:41:46,870 --> 02:41:45,680
break torque on the bolts that are

2110
02:41:50,070 --> 02:41:46,880
holding

2111
02:41:52,469 --> 02:41:50,080
the first of these two arrays in place

2112
02:41:54,230 --> 02:41:52,479
copy we just wanted to uh triple check

2113
02:41:56,389 --> 02:41:54,240

there we understand tomorrow that you're

2114

02:42:12,150 --> 02:41:56,399

ready to the ard on charlie 2 and you're

2115

02:42:21,910 --> 02:42:15,590

tomah your settings are bravo 3 counter

2116

02:42:27,429 --> 02:42:23,750

good read back and shane you'll be

2117

02:42:29,750 --> 02:42:27,439

stowing the cable bag on handrails in

2118

02:42:31,429 --> 02:42:29,760

that corner of the iea around handrail

2119

02:42:33,670 --> 02:42:31,439

5307

2120

02:42:37,830 --> 02:42:33,680

make sure that you position the hinge

2121

02:42:41,670 --> 02:42:38,790

i'll be

2122

02:42:44,150 --> 02:42:41,680

working on that so we got two uh

2123

02:42:47,349 --> 02:42:44,160

defenders now working on our third down

2124

02:42:50,950 --> 02:42:49,830

jenny i'm ready for 10 turns on the ard

2125

02:42:53,510 --> 02:42:50,960

volts

2126
02:42:55,830 --> 02:42:53,520
a firm 10 turns only that'll release the

2127
02:42:58,600 --> 02:42:55,840
ard

2128
02:43:07,110 --> 02:42:58,610
you try ssc 13 that's in node 2.

2129
02:43:07,120 --> 02:43:18,320
thanks

2130
02:43:18,330 --> 02:43:39,750
[Music]

2131
02:43:44,950 --> 02:43:42,389
again pesquet right now using a pistol

2132
02:43:47,030 --> 02:43:44,960
grip tool to release what is called an

2133
02:43:48,710 --> 02:43:47,040
anti-rotation device

2134
02:43:49,830 --> 02:43:48,720
this is the

2135
02:43:52,309 --> 02:43:49,840
mechanism

2136
02:43:54,550 --> 02:43:52,319
that must be removed prior to breaking

2137
02:43:57,190 --> 02:43:54,560
torque on the bolts holding the irosa

2138
02:43:58,630 --> 02:43:57,200

array in place on its flight support

2139

02:44:01,030 --> 02:43:58,640

structure on the truss of the

2140

02:44:02,389 --> 02:44:01,040

international space station meanwhile

2141

02:44:05,750 --> 02:44:02,399

shane kimbrough

2142

02:44:09,030 --> 02:44:05,760

is out at the p6 truss uh stowing a bag

2143

02:44:11,110 --> 02:44:09,040

of power cables on a handrail

2144

02:44:14,070 --> 02:44:11,120

that will be used later in the space

2145

02:44:17,990 --> 02:44:14,080

walk by uh kimbrough and pesquet

2146

02:44:20,150 --> 02:44:18,000

to electrically connect the new array uh

2147

02:44:25,830 --> 02:44:20,160

to the power system of the international

2148

02:44:25,840 --> 02:44:31,670

and i'll head to the worksheet

2149

02:44:34,870 --> 02:44:33,429

and shane we're also looking for a glove

2150

02:44:41,429 --> 02:44:34,880

inspection hap check and countless check

2151

02:44:41,439 --> 02:44:47,670

okay um white glove no change looks good

2152

02:44:52,630 --> 02:44:49,670

that's a lot of no change looks good dry

2153

02:44:55,110 --> 02:44:52,640

up and gauntlets are down

2154

02:44:58,070 --> 02:44:55,120

copy those are good checks shane

2155

02:44:59,830 --> 02:44:58,080

when you have the crew lock bag you can

2156

02:45:05,269 --> 02:44:59,840

translate to the left mod kit i have

2157

02:45:05,279 --> 02:45:08,150

okay

2158

02:45:14,309 --> 02:45:11,349

stand by one shane uh i see your ard is

2159

02:45:16,230 --> 02:45:14,319

released as reported toma pgt settings

2160

02:45:19,980 --> 02:45:16,240

to drive the stop block bolt the torque

2161

02:45:21,190 --> 02:45:19,990

or gravel one clockwise too

2162

02:45:23,030 --> 02:45:21,200

[Music]

2163

02:45:25,269 --> 02:45:23,040

the ard is released there's a lot of

2164

02:45:38,790 --> 02:45:25,279

friction on those ar

2165

02:45:38,800 --> 02:45:43,800

bravo one clockwise two

2166

02:45:47,910 --> 02:45:46,230

[Music]

2167

02:45:49,750 --> 02:45:47,920

cautions for you shane no sudden

2168

02:45:51,750 --> 02:45:49,760

movements on the mass canister or mod

2169

02:45:59,429 --> 02:45:51,760

kit we'll have you translate slowly and

2170

02:46:03,269 --> 02:46:01,030

you'll be stowing the crew lock bag on

2171

02:46:05,830 --> 02:46:03,279

the left lower strut handrail closest to

2172

02:46:23,790 --> 02:46:05,840

the mounting bracket the lower handrail

2173

02:47:19,190 --> 02:46:26,790

[Music]

2174

02:47:24,309 --> 02:47:22,550

then you have a good torque

2175

02:47:28,150 --> 02:47:24,319

drop turns

2176

02:47:34,309 --> 02:47:28,160

and uh torque sorry 19 16 turns

2177

02:47:51,030 --> 02:47:37,830

copy green light 12 on the torque and 12

2178

02:47:56,070 --> 02:47:54,150

tomas you can stow your ptt

2179

02:47:59,269 --> 02:47:56,080

and then we'll put you back to the crew

2180

02:48:07,670 --> 02:47:59,279

lock bag to stow those ards retrieve the

2181

02:48:16,710 --> 02:48:09,830

back to a crew while back

2182

02:48:16,720 --> 02:48:30,389

hmm

2183

02:48:30,399 --> 02:48:35,170

god

2184

02:48:35,180 --> 02:49:10,309

[Music]

2185

02:49:24,469 --> 02:49:12,640

bye

2186

02:49:24,479 --> 02:49:33,750

ground copies

2187

02:49:50,550 --> 02:49:44,910

[Music]

2188

02:49:58,309 --> 02:49:52,590

uh

2189

02:50:35,030 --> 02:49:58,319

[Music]

2190

02:50:39,830 --> 02:50:37,429

copy those are good words to ma

2191

02:50:42,230 --> 02:50:39,840

you'll also be retrieving the scoop with

2192

02:51:03,990 --> 02:50:42,240

the long duration tie down tether and

2193

02:51:09,030 --> 02:51:05,990

this is mission control houston one hour

2194

02:51:11,910 --> 02:51:09,040

12 minutes into uh today's spacewalk by

2195

02:51:14,950 --> 02:51:11,920

tomah pesquet and shane kimbrough

2196

02:51:18,790 --> 02:51:14,960

the uh two uh spacewalkers are

2197

02:51:20,790 --> 02:51:18,800

working in the very very early stages of

2198

02:51:23,349 --> 02:51:20,800

their respective tasks

2199

02:51:24,230 --> 02:51:23,359

that will result in the removal of the

2200

02:51:26,710 --> 02:51:24,240

first

2201

02:51:29,910 --> 02:51:26,720

irosa roll-up solar array from its

2202

02:51:32,630 --> 02:51:29,920

flight support structure

2203

02:51:34,870 --> 02:51:32,640

you can see in this image that large

2204

02:51:37,590 --> 02:51:34,880

support structure that was housed in the

2205

02:51:39,269 --> 02:51:37,600

trunk of the spacex cargo dragon vehicle

2206

02:51:41,990 --> 02:51:39,279

that carried it to orbit

2207

02:51:43,910 --> 02:51:42,000

back on june 3rd when it was launched

2208

02:51:45,910 --> 02:51:43,920

from the kennedy space center

2209

02:51:48,309 --> 02:51:45,920

arriving at the international space

2210

02:51:50,150 --> 02:51:48,319

station two days later

2211

02:51:51,429 --> 02:51:50,160

make sure it stays ready to the crew

2212

02:51:52,950 --> 02:51:51,439

lock bag

2213

02:52:00,309 --> 02:51:52,960

and you'll install it with the handle

2214

02:52:04,230 --> 02:52:02,550

pesquet next we'll use a pistol grip

2215

02:52:06,230 --> 02:52:04,240

tool to break torque

2216

02:52:07,830 --> 02:52:06,240

on two bolts

2217

02:52:10,309 --> 02:52:07,840

on that flight support equipment

2218

02:52:11,910 --> 02:52:10,319

structure holding the irosa array in

2219

02:52:14,469 --> 02:52:11,920

place

2220

02:52:16,790 --> 02:52:14,479

shane kimbrough is still working in the

2221

02:52:19,510 --> 02:52:16,800

final steps of setting up a shop at the

2222

02:52:21,110 --> 02:52:19,520

p6 truss with an articulating portable

2223

02:52:23,670 --> 02:52:21,120

foot restraint

2224

02:52:25,510 --> 02:52:23,680

that he will be awaiting the arrival of

2225

02:52:27,110 --> 02:52:25,520

pesquet in

2226

02:52:30,950 --> 02:52:27,120

pesquet uh

2227

02:52:33,750 --> 02:52:30,960

will set up a foot restraint of his own

2228

02:52:36,070 --> 02:52:33,760

at the end of the canadarm2 robotic arm

2229

02:52:38,469 --> 02:52:36,080

and then place his feet

2230

02:52:41,349 --> 02:52:38,479

in that foot restraint

2231

02:52:44,630 --> 02:52:41,359

pull the array out of the flight support

2232

02:52:47,110 --> 02:52:44,640

equipment structure and haul it over

2233

02:52:50,150 --> 02:52:47,120

to uh where kimbrough is

2234

02:52:52,469 --> 02:52:50,160

for a handoff kimbrough will then rotate

2235

02:52:55,030 --> 02:52:52,479

that array in the proper orientation to

2236

02:52:56,630 --> 02:52:55,040

await pesquez arrival so that the two

2237

02:52:58,710 --> 02:52:56,640

crew members can work

2238

02:53:00,309 --> 02:52:58,720

with each other for the ultimate

2239

02:53:03,269 --> 02:53:00,319

installation of that array on a

2240

02:53:05,110 --> 02:53:03,279

modification kit essentially a bracket

2241

02:53:07,990 --> 02:53:05,120

that was installed at the base of the

2242

02:53:09,269 --> 02:53:08,000

mast canister of the p6 truss array

2243

02:53:11,750 --> 02:53:09,279

structure

2244

02:53:16,389 --> 02:53:11,760

on a previous spacewalk okay i see the

2245

02:53:22,309 --> 02:53:18,950

yeah we uh

2246

02:53:23,510 --> 02:53:22,319

we see that in your wvs

2247

02:53:24,950 --> 02:53:23,520

make sure that you have the scoop with

2248

02:53:26,230 --> 02:53:24,960

the long duration tie-down tether which

2249

02:53:31,520 --> 02:53:26,240

you do and that goes in on your mini

2250

02:53:31,530 --> 02:53:43,110

[Music]

2251

02:53:45,750 --> 02:53:44,710

you have the scoop which is staying

2252

02:53:47,830 --> 02:53:45,760

right into the bag and you're going to

2253

02:53:54,790 --> 02:53:47,840

be installing it on the root beam micro

2254

02:53:54,800 --> 02:53:58,630

okay i don't have to scoop

2255

02:54:01,429 --> 02:53:59,429

this

2256

02:54:10,550 --> 02:54:01,439

the modulation

2257

02:54:20,070 --> 02:54:11,990

following that we'll have you do a

2258

02:54:20,080 --> 02:54:42,389

um

2259

02:54:49,590 --> 02:54:44,710

this is on my new workstation

2260

02:54:53,750 --> 02:54:51,030

that's exactly right so mom we're

2261

02:54:57,190 --> 02:54:53,760

looking for the 5 8 12 inch socket on

2262

02:55:15,269 --> 02:54:58,469

happy 5

2263

02:55:20,389 --> 02:55:17,670

copy shane that's a good config you can

2264

02:55:23,750 --> 02:55:20,399

get started on routing the right wire

2265

02:55:25,429 --> 02:55:23,760

harnesses from the cable bag

2266

02:55:43,030 --> 02:55:25,439

let me know if you need additional words

2267

02:55:43,040 --> 02:56:19,820

huh

2268

02:56:53,429 --> 02:56:28,430

[Music]

2269

02:56:57,590 --> 02:56:55,110

12 inches back on the socket carrying

2270

02:56:59,910 --> 02:56:57,600

the good pull test working on

2271

02:57:01,910 --> 02:56:59,920

another 5 8 12 inch

2272

02:57:04,950 --> 02:57:01,920

on speed

2273

02:57:06,389 --> 02:57:04,960

i copy a good pull test on the 7 16 12

2274

02:57:33,030 --> 02:57:06,399

inch on the socket caddy and you're

2275

02:57:33,040 --> 02:57:39,349

all right the target is probably on

2276

02:57:43,349 --> 02:57:41,510

copy good pull test on the 5 8 12 inch

2277

02:57:45,269 --> 02:57:43,359

on the pgt

2278

02:57:48,230 --> 02:57:45,279

your next steps tomorrow are to break

2279

02:58:01,910 --> 02:57:48,240

torque on the irosa fse bolts

2280

02:58:05,269 --> 02:58:03,990

jenny i have a wrap on the red cables so

2281

02:58:07,590 --> 02:58:05,279

i'm going to release the red from the

2282

02:58:08,870 --> 02:58:07,600

back and then take them up to the

2283

02:58:09,450 --> 02:58:08,880

market

2284

02:58:11,910 --> 02:58:09,460

right side

2285

02:58:13,670 --> 02:58:11,920

[Applause]

2286

02:58:18,469 --> 02:58:13,680

poppy shane

2287

02:58:21,910 --> 02:58:19,910

and tomorrow while you're buttoning up

2288

02:58:23,510 --> 02:58:21,920

this crew lock bag i just wanted to let

2289

02:58:25,190 --> 02:58:23,520

you know that occasionally your calm is

2290

02:58:26,710 --> 02:58:25,200

coming through muffled

2291

02:58:28,550 --> 02:58:26,720

i understand there's not much that you

2292

02:58:30,150 --> 02:58:28,560

can do about that at this point your mic

2293

02:58:31,910 --> 02:58:30,160

booms are set

2294

02:58:33,429 --> 02:58:31,920

but that's why i'm repeating calls back

2295

02:58:34,390 --> 02:58:33,439

to you and just correct me if we ever

2296

02:58:36,710 --> 02:58:34,400

get it wrong

2297

02:58:39,110 --> 02:58:36,720

[Music]

2298

02:58:40,630 --> 02:58:39,120

that's all good jenny and uh

2299

02:58:42,469 --> 02:58:40,640

i'll try to be clear

2300

02:58:43,910 --> 02:58:42,479

and change you do you copy me or is it

2301
02:58:45,990 --> 02:58:43,920
the same for you

2302
02:58:47,110 --> 02:58:46,000
um well i'm copying you good

2303
02:58:57,110 --> 02:58:47,120
okay

2304
02:59:02,810 --> 02:58:59,670
are you sure it's not my friend's

2305
02:59:02,820 --> 02:59:11,750
[Music]

2306
02:59:18,070 --> 02:59:14,389
you'll be translating to charlie 2 to

2307
02:59:23,590 --> 02:59:20,469
charlie 2 to red torch

2308
02:59:30,230 --> 02:59:23,600
a firm that's the venus and inboard or

2309
02:59:35,030 --> 02:59:32,630
spacewalk communicator jenny seidi a

2310
02:59:36,950 --> 02:59:35,040
canadian space agency astronaut talking

2311
02:59:39,510 --> 02:59:36,960
to tomah pesquet

2312
02:59:41,670 --> 02:59:39,520
as he uses a pistol grip tool to break

2313
02:59:43,830 --> 02:59:41,680

torque on a pair of bolts

2314

02:59:46,230 --> 02:59:43,840

holding this first irosa

2315

02:59:48,469 --> 02:59:46,240

rollout solar array in place on its

2316

02:59:51,429 --> 02:59:48,479

flight support equipment on the truss

2317

02:59:55,510 --> 02:59:51,439

of the station a distinct canadian

2318

02:59:57,190 --> 02:59:55,520

flavor to today's spacewalk with sidie

2319

02:59:59,590 --> 02:59:57,200

talking directly to the two space

2320

03:00:01,110 --> 02:59:59,600

walkers outside next to her

2321

03:00:03,269 --> 03:00:01,120

is veteran astronaut and veteran

2322

03:00:05,830 --> 03:00:03,279

spacewalker drew feustel

2323

03:00:08,950 --> 03:00:07,349

was educated

2324

03:00:14,710 --> 03:00:08,960

amongst other places at queen's

2325

03:00:19,429 --> 03:00:16,710

the space station's robotic arm the

2326
03:00:22,309 --> 03:00:19,439
canadarm2 will be used to move tomah

2327
03:00:24,550 --> 03:00:22,319
pesquet holding the irosa solar array

2328
03:00:27,429 --> 03:00:24,560
over to shane kimbrough where they will

2329
03:00:30,710 --> 03:00:27,439
work uh in concert with one another

2330
03:00:33,030 --> 03:00:30,720
to install it at the mast canister base

2331
03:00:34,389 --> 03:00:33,040
of the p6 solar array truss

2332
03:00:35,830 --> 03:00:34,399
structure

2333
03:00:37,910 --> 03:00:35,840
the p6

2334
03:00:39,830 --> 03:00:37,920
truss arrays were delivered to the

2335
03:00:42,469 --> 03:00:39,840
international space station

2336
03:00:45,590 --> 03:00:42,479
on the sts-97 mission aboard the shuttle

2337
03:00:48,389 --> 03:00:45,600
endeavour in december of 2000

2338
03:00:51,030 --> 03:00:48,399

that also featured the presence on board

2339

03:00:52,630 --> 03:00:51,040

of canadian space agency astronaut

2340

03:01:23,750 --> 03:00:52,640

mark garneau

2341

03:01:27,030 --> 03:01:25,830

come on okay you're at charlie too let

2342

03:01:44,469 --> 03:01:27,040

me know when you're ready for pgt

2343

03:01:44,479 --> 03:02:16,150

um

2344

03:02:21,349 --> 03:02:19,030

and i'm ready for settings

2345

03:02:24,710 --> 03:02:21,359

copy you're in a good config tomah your

2346

03:02:27,030 --> 03:02:24,720

settings are bravo three counter two

2347

03:02:28,150 --> 03:02:27,040

you'll be releasing charlie tune charlie

2348

03:02:36,550 --> 03:02:28,160

two

2349

03:03:01,110 --> 03:02:36,560

more than half a turn

2350

03:03:10,160 --> 03:03:04,150

copy half a turn on charlie two you can

2351
03:03:10,170 --> 03:03:11,030
[Music]

2352
03:03:11,040 --> 03:03:26,270
on to one

2353
03:03:41,429 --> 03:03:35,910
[Music]

2354
03:03:53,880 --> 03:03:43,590
twerk

2355
03:03:53,890 --> 03:04:57,510
[Music]

2356
03:04:57,520 --> 03:05:14,470
yes

2357
03:05:33,910 --> 03:05:30,290
[Music]

2358
03:05:38,550 --> 03:05:35,269
and the second we're talking about to

2359
03:05:38,560 --> 03:05:43,990
around that you know

2360
03:05:47,750 --> 03:05:45,429
this is mission control houston

2361
03:05:49,830 --> 03:05:47,760
approaching the one hour 30 minute mark

2362
03:05:52,070 --> 03:05:49,840
into today's spacewalk

2363
03:05:54,309 --> 03:05:52,080

a good view of european space agency

2364

03:05:56,150 --> 03:05:54,319

astronaut thomas pesquet

2365

03:05:58,790 --> 03:05:56,160

by the floor flight support equipment

2366

03:06:01,750 --> 03:05:58,800

and you are getting a great view of the

2367

03:06:05,349 --> 03:06:01,760

two pairs of folded

2368

03:06:07,590 --> 03:06:05,359

iss roll out solar arrays

2369

03:06:09,510 --> 03:06:07,600

one of which will be extracted from that

2370

03:06:11,349 --> 03:06:09,520

flight support equipment

2371

03:06:14,150 --> 03:06:11,359

a short time from now

2372

03:06:16,950 --> 03:06:14,160

and moved by pesquet at the end of the

2373

03:06:19,429 --> 03:06:16,960

station's robotic arm over to

2374

03:06:21,830 --> 03:06:19,439

hand off to shane kimbrough at the p6

2375

03:06:23,429 --> 03:06:21,840

truss of the station where it ultimately

2376

03:06:25,990 --> 03:06:23,439

will be installed

2377

03:06:30,230 --> 03:06:26,000

and mounted in place for its deployment

2378

03:06:34,070 --> 03:06:31,830

the international space station is

2379

03:06:35,590 --> 03:06:34,080

flying into an orbital sunrise over the

2380

03:06:38,230 --> 03:06:35,600

pacific ocean

2381

03:06:41,590 --> 03:06:38,240

soon to cross the coast of mexico

2382

03:06:44,950 --> 03:06:41,600

flying 258 statute miles above the earth

2383

03:06:46,870 --> 03:06:44,960

in an orbit inclined 51.6 degrees to

2384

03:07:07,320 --> 03:06:46,880

either side of the equator this track

2385

03:07:07,330 --> 03:07:12,550

[Music]

2386

03:07:16,630 --> 03:07:14,630

you'll be breaking torque on charlie one

2387

03:07:17,510 --> 03:07:16,640

less than half a turn

2388

03:07:20,870 --> 03:07:17,520

let me know when you're ready for

2389

03:07:25,910 --> 03:07:22,830

you can talk on charging one less than

2390

03:07:35,910 --> 03:07:25,920

half of stone i'm ready for city

2391

03:07:39,190 --> 03:07:36,830

level

2392

03:08:07,080 --> 03:07:39,200

three don't take two

2393

03:08:07,090 --> 03:08:18,630

[Music]

2394

03:08:22,950 --> 03:08:20,550

let me do that again

2395

03:08:27,269 --> 03:08:22,960

i got low torque

2396

03:08:29,990 --> 03:08:27,279

focus 9.4 for 18.4 it's not great

2397

03:08:32,150 --> 03:08:30,000

moved by less than half a turn but

2398

03:08:42,070 --> 03:08:32,160

i'll need to give it a little bit more

2399

03:08:44,710 --> 03:08:43,510

yeah we're happy with that tomorrow as

2400

03:08:48,150 --> 03:08:44,720

long as it moves we're just breaking

2401

03:08:50,710 --> 03:08:48,160

torque at this point

2402

03:08:55,830 --> 03:08:52,870

thank you so now you'll be releasing

2403

03:08:59,429 --> 03:08:55,840

charlie 1 27 turns only and i have new

2404

03:09:03,269 --> 03:09:01,910

copy 27 turns on so one and i'm ready

2405

03:09:07,910 --> 03:09:03,279

for six

2406

03:09:07,920 --> 03:09:22,250

level three

2407

03:09:31,510 --> 03:09:28,389

[Music]

2408

03:09:33,990 --> 03:09:31,520

it seems like a term charlie won with a

2409

03:09:36,229 --> 03:09:34,000

counter clockwise one

2410

03:09:37,670 --> 03:09:36,239

i think

2411

03:09:40,309 --> 03:09:37,680

breaking talk

2412

03:09:45,670 --> 03:09:40,319

did you go back at 10 o'clock question

2413

03:09:49,269 --> 03:09:47,429

you can continue again we just wanted to

2414

03:09:53,349 --> 03:09:49,279

break torque there so as long as the

2415

03:09:59,110 --> 03:09:56,469

okay perfect so bravo three counter

2416

03:10:01,349 --> 03:09:59,120

three correct a firm those are good

2417

03:10:07,030 --> 03:10:01,359

settings you'll be releasing charlie 1

2418

03:10:17,030 --> 03:10:11,190

looking for 27 turns on

2419

03:10:21,670 --> 03:10:18,550

right right tables are done i'm going

2420

03:10:26,150 --> 03:10:24,150

copy shane the right wire harnesses are

2421

03:10:30,870 --> 03:10:26,160

complete you're moving on to retrieve

2422

03:10:30,880 --> 03:10:47,269

[Music]

2423

03:10:51,590 --> 03:10:49,910

copy 27 turns on charlie one you can

2424

03:10:55,590 --> 03:10:51,600

stow your pgt and we'll have you

2425

03:10:57,590 --> 03:10:55,600

translate back to charlie too

2426

03:11:08,070 --> 03:10:57,600

i'll be studying the pgct and back to

2427

03:11:14,710 --> 03:11:11,910

a great view of thomas pesquet uh

2428

03:11:17,269 --> 03:11:14,720

using his equipment to break torque

2429

03:11:18,710 --> 03:11:17,279

on a pair of bolts holding the irosa

2430

03:11:21,030 --> 03:11:18,720

solar array

2431

03:11:23,510 --> 03:11:21,040

in place on its flight support equipment

2432

03:11:25,510 --> 03:11:23,520

meanwhile shane kimbrough at his work

2433

03:11:27,830 --> 03:11:25,520

site at the p6 trust of the station the

2434

03:11:29,750 --> 03:11:27,840

far left side of the backbone

2435

03:11:34,950 --> 03:11:29,760

of the station is routing

2436

03:11:39,750 --> 03:11:37,830

associated with the power connectors

2437

03:11:42,229 --> 03:11:39,760

that will hook up the electrical

2438

03:11:45,670 --> 03:11:42,239

connections for the new solar array

2439

03:11:55,349 --> 03:11:45,680

to the power system at the mast canister

2440

03:11:59,429 --> 03:11:57,510

white cables

2441

03:12:01,190 --> 03:11:59,439

ink outside i'll release the red from

2442

03:12:44,469 --> 03:12:01,200

the back

2443

03:12:48,710 --> 03:12:46,150

i'm back with you after a handover i

2444

03:13:00,630 --> 03:12:48,720

copied the ret config for the wire

2445

03:13:00,640 --> 03:13:06,610

hmm

2446

03:13:17,110 --> 03:13:13,880

[Music]

2447

03:13:17,120 --> 03:13:30,710

oh

2448

03:13:30,720 --> 03:13:53,349

yes

2449

03:13:58,469 --> 03:13:56,790

jenny i am ready for settings on the pg

2450

03:14:00,630 --> 03:13:58,479

for challenge 2

2451
03:14:10,780 --> 03:14:00,640
for parents

2452
03:14:16,950 --> 03:14:13,590
[Music]

2453
03:14:20,070 --> 03:14:16,960
a firm and you'll be releasing charlie 2

2454
03:14:30,710 --> 03:14:20,080
51 to 54 turns the bolt will spring out

2455
03:14:30,720 --> 03:14:44,190
hey firm

2456
03:14:44,200 --> 03:15:04,790
[Music]

2457
03:15:04,800 --> 03:15:09,990
uh

2458
03:15:10,000 --> 03:15:45,590
hmm

2459
03:15:50,630 --> 03:15:48,469
as we hit the one hour 36 minute mark

2460
03:15:52,710 --> 03:15:50,640
into the space walk this view from shane

2461
03:15:54,389 --> 03:15:52,720
kimbrough's helmet camera

2462
03:15:55,990 --> 03:15:54,399
ian pesquet and the rest of the crew

2463
03:15:56,950 --> 03:15:56,000

members on the international space

2464

03:15:58,950 --> 03:15:56,960

station

2465

03:16:01,110 --> 03:15:58,960

are crossing of the coast of mexico

2466

03:16:04,150 --> 03:16:01,120

north of guadalajara

2467

03:16:07,030 --> 03:16:04,160

orbiting 258 statute miles above the

2468

03:16:09,349 --> 03:16:07,040

earth pesquet using a pistol grip tool

2469

03:16:11,269 --> 03:16:09,359

to break torque on a pair of bolts

2470

03:16:14,070 --> 03:16:11,279

holding the iss

2471

03:16:15,750 --> 03:16:14,080

rollout solar array in place on a flight

2472

03:16:17,830 --> 03:16:15,760

support cradle

2473

03:16:20,150 --> 03:16:17,840

that was delivered to the station with

2474

03:16:22,469 --> 03:16:20,160

the first pair of solar arrays on the

2475

03:16:24,070 --> 03:16:22,479

spacex cargo dragon vehicle two weeks

2476
03:16:25,830 --> 03:16:24,080
ago

2477
03:16:26,950 --> 03:16:25,840
kimbrough meanwhile

2478
03:16:29,190 --> 03:16:26,960
is routing

2479
03:16:31,910 --> 03:16:29,200
a series of cables

2480
03:16:34,870 --> 03:16:31,920
that will ultimately be used

2481
03:16:36,790 --> 03:16:34,880
to hook up electrical connections

2482
03:16:39,830 --> 03:16:36,800
between the new array

2483
03:16:50,990 --> 03:16:39,840
and the electrical ports at the base of

2484
03:16:56,389 --> 03:16:53,429
[Music]

2485
03:17:03,270 --> 03:16:56,399
okay toma i copy charlie 2 released with

2486
03:17:17,510 --> 03:17:13,270
[Music]

2487
03:17:17,520 --> 03:17:22,000
was really high and then it kind of

2488
03:17:30,790 --> 03:17:28,790

[Music]

2489

03:17:33,890 --> 03:17:30,800

okay we copy tomah the change in torquey

2490

03:17:38,080 --> 03:17:33,900

fault when you're releasing

2491

03:17:51,429 --> 03:17:39,550

[Applause]

2492

03:17:51,439 --> 03:17:55,910

uh

2493

03:17:55,920 --> 03:18:02,610

hmm

2494

03:18:02,620 --> 03:18:14,950

[Music]

2495

03:18:19,429 --> 03:18:17,750

your next step is to install the scoop

2496

03:18:31,750 --> 03:18:19,439

on the root beam micro square near

2497

03:18:34,630 --> 03:18:32,950

hey firm

2498

03:18:37,269 --> 03:18:34,640

and remember that scoop is going to be

2499

03:18:41,510 --> 03:18:37,279

installed at a 45 degree angle toward

2500

03:18:41,520 --> 03:18:47,590

35 degree angle

2501

03:18:51,990 --> 03:18:50,469

i got the first cable wire drive down

2502

03:18:53,590 --> 03:18:52,000

i'm gonna have to move the second one

2503

03:18:56,550 --> 03:18:53,600

i'm just like the other one so give me a

2504

03:18:56,560 --> 03:19:00,380

copy

2505

03:19:00,390 --> 03:19:12,309

[Music]

2506

03:19:19,190 --> 03:19:14,070

and then you don't scoop it at a 45

2507

03:19:23,830 --> 03:19:21,670

let's get you in place

2508

03:19:44,710 --> 03:19:23,840

crappy oh we can see that it looks good

2509

03:19:49,670 --> 03:19:46,630

okay and i'm gonna go back to the other

2510

03:19:51,269 --> 03:19:49,680

side jenny if that's uh correct

2511

03:19:53,269 --> 03:19:51,279

hey firm

2512

03:19:55,429 --> 03:19:53,279

that is right thomas you are headed back

2513

03:19:58,630 --> 03:19:55,439

to the tower handrail where you will

2514

03:20:00,630 --> 03:19:58,640

swap pgt's so stow shane

2515

03:20:23,230 --> 03:20:00,640

retrieve yours and then i'll take glove

2516

03:20:54,070 --> 03:20:27,110

[Music]

2517

03:20:54,080 --> 03:21:02,150

um

2518

03:21:07,510 --> 03:21:04,710

the cable machine

2519

03:21:10,390 --> 03:21:07,520

uh just moving this uh wire tag in

2520

03:21:31,550 --> 03:21:10,400

and then i'll tap this down

2521

03:21:31,560 --> 03:21:55,590

[Music]

2522

03:21:55,600 --> 03:22:45,440

yes

2523

03:22:45,450 --> 03:23:01,110

[Music]

2524

03:23:07,309 --> 03:23:02,550

5 8

2525

03:23:13,269 --> 03:23:10,229

l0013 on the tower and i'll go ahead and

2526

03:23:15,490 --> 03:23:13,279

retrieve my load from that pgp

2527

03:23:15,970 --> 03:23:15,500

copy good word

2528

03:23:21,990 --> 03:23:15,980

[Music]

2529

03:23:27,590 --> 03:23:24,229

down with two wire ties

2530

03:23:32,389 --> 03:23:27,600

on the mid right hand rail one on the

2531

03:23:53,830 --> 03:23:35,269

two wire ties down for the left wire

2532

03:23:58,070 --> 03:23:55,910

shane before we do anything else heading

2533

03:24:00,150 --> 03:23:58,080

back inboard we want you to check that

2534

03:24:08,389 --> 03:24:00,160

the soft capture features are armed and

2535

03:24:17,670 --> 03:24:10,469

okay the one in right now

2536

03:24:22,790 --> 03:24:21,269

shane kimbrough at the base of the p6

2537

03:24:24,469 --> 03:24:22,800

solar arrays

2538

03:24:26,790 --> 03:24:24,479

that were delivered to the international

2539

03:24:28,950 --> 03:24:26,800

space station

2540

03:24:31,429 --> 03:24:28,960

the first set of solar arrays to arrive

2541

03:24:33,910 --> 03:24:31,439

at the station back in december of 2000

2542

03:24:35,590 --> 03:24:33,920

on the sts-97 mission aboard the shuttle

2543

03:24:43,429 --> 03:24:35,600

endeavour

2544

03:24:46,710 --> 03:24:45,290

okay your strut's going to lie

2545

03:24:48,630 --> 03:24:46,720

[Applause]

2546

03:24:51,349 --> 03:24:48,640

as well below the plane there so i think

2547

03:24:55,269 --> 03:24:52,550

he's saying it looks like the mounting

2548

03:24:57,429 --> 03:24:55,279

bracket is in a good config so with that

2549

03:25:01,590 --> 03:24:57,439

i will have you head in board retrieving

2550

03:25:04,389 --> 03:25:02,870

okay i'm going to

2551

03:25:06,830 --> 03:25:04,399

try out the screwdriver a little bit

2552

03:25:19,349 --> 03:25:06,840

better and then i'll keep heading

2553

03:25:22,389 --> 03:25:20,309

on the

2554

03:25:24,309 --> 03:25:22,399

binding workstation

2555

03:25:26,469 --> 03:25:24,319

and machine speaking we're going to hand

2556

03:25:28,550 --> 03:25:26,479

you over the right

2557

03:25:33,030 --> 03:25:28,560

cubby tomas that's a good config i'll

2558

03:25:37,190 --> 03:25:35,110

okay gloves are

2559

03:25:39,429 --> 03:25:37,200

good no change

2560

03:25:41,510 --> 03:25:39,439

absolutely no damage whatsoever

2561

03:25:43,510 --> 03:25:41,520

i'm gonna have to dry

2562

03:25:46,870 --> 03:25:43,520

copy no change to your gloves and a dry

2563

03:25:48,469 --> 03:25:46,880

hat you can move on to ssrms setup steps

2564

03:25:53,270 --> 03:25:48,479

which has you first translating to the

2565

03:25:57,510 --> 03:25:54,950

[Music]

2566

03:25:59,750 --> 03:25:57,520

one hour 46 minutes into the spacewalk

2567

03:26:03,030 --> 03:25:59,760

pesquet has released

2568

03:26:06,630 --> 03:26:03,040

these two bolts holding the irosa solar

2569

03:26:09,110 --> 03:26:06,640

array that he is uh

2570

03:26:10,630 --> 03:26:09,120

just behind on this flight support

2571

03:26:12,790 --> 03:26:10,640

equipment structure

2572

03:26:15,190 --> 03:26:12,800

two bolts that he used a pistol grip

2573

03:26:18,150 --> 03:26:15,200

tool to release

2574

03:26:20,150 --> 03:26:18,160

next up for pesquet will be the setup of

2575

03:26:22,630 --> 03:26:20,160

an articulating portable foot restraint

2576
03:26:24,469 --> 03:26:22,640
at the end of the canadarm2 robotic arm

2577
03:26:27,750 --> 03:26:24,479
as the international space station

2578
03:26:42,389 --> 03:26:27,760
passes just over the capital of canada

2579
03:26:42,399 --> 03:26:54,670
come on right

2580
03:26:54,680 --> 03:27:11,030
[Applause]

2581
03:27:17,910 --> 03:27:11,990
the

2582
03:27:21,349 --> 03:27:17,920
this is a new design that uses a

2583
03:27:23,830 --> 03:27:21,359
one-piece carbon fiber composite boom

2584
03:27:25,670 --> 03:27:23,840
that is essentially folded up into

2585
03:27:29,030 --> 03:27:25,680
halves

2586
03:27:34,150 --> 03:27:29,040
hinge

2587
03:27:36,389 --> 03:27:34,160
was released earlier in the spacewalk by

2588
03:27:39,590 --> 03:27:36,399

pesquet

2589

03:27:41,269 --> 03:27:39,600

this enables stored energy on the two

2590

03:27:44,070 --> 03:27:41,279

halves of the boom

2591

03:28:29,190 --> 03:27:44,080

to actuate the deployment sequence later

2592

03:28:35,190 --> 03:28:32,630

that apfr should have an ingress aid

2593

03:28:46,469 --> 03:28:35,200

your to retrieve it and translate back

2594

03:28:51,110 --> 03:28:49,429

again uh about to set up a portable foot

2595

03:28:52,389 --> 03:28:51,120

restraint at the end of the canadarm2

2596

03:28:54,790 --> 03:28:52,399

robotic arm

2597

03:28:58,389 --> 03:28:54,800

that will be operated inside a robotic

2598

03:29:00,870 --> 03:28:58,399

workstation by megan mcarthur

2599

03:29:03,429 --> 03:29:00,880

she will drive the arm with pesquet at

2600

03:29:05,030 --> 03:29:03,439

the end of it he'll be holding the irosa

2601
03:29:07,269 --> 03:29:05,040
solar array

2602
03:29:10,229 --> 03:29:07,279
and we'll bring it towards shane

2603
03:29:12,790 --> 03:29:10,239
kimbrough who's awaiting its arrival

2604
03:29:13,830 --> 03:29:12,800
at the base of the p6 solar ray truss

2605
03:29:15,990 --> 03:29:13,840
structure

2606
03:29:18,389 --> 03:29:16,000
after routing uh two

2607
03:29:19,590 --> 03:29:18,399
sets of wire harnesses

2608
03:29:22,389 --> 03:29:19,600
that

2609
03:29:23,990 --> 03:29:22,399
house connections electrical connections

2610
03:29:25,830 --> 03:29:24,000
that will hook up the array to the

2611
03:30:01,110 --> 03:29:25,840
electrical system of the international

2612
03:30:07,190 --> 03:30:03,349
here's my prt work from the api for

2613
03:30:07,200 --> 03:30:17,440

happy tomorrow

2614

03:30:17,450 --> 03:31:07,990

[Music]

2615

03:31:22,930 --> 03:31:10,710

okay jf5 on my brt and i'm making my way

2616

03:31:26,389 --> 03:31:24,830

[Music]

2617

03:31:29,269 --> 03:31:26,399

you

2618

03:31:31,990 --> 03:31:29,279

so shane i don't go back to the ssc

2619

03:31:33,910 --> 03:31:32,000

shane you can translate

2620

03:31:36,469 --> 03:31:33,920

you can translate to the fsc you'll be

2621

03:31:38,070 --> 03:31:36,479

at the grapple tower and uh tomorrow

2622

03:31:40,229 --> 03:31:38,080

you're actually just translating to the

2623

03:31:45,750 --> 03:31:40,239

port cedar cart where you'll give ssrms

2624

03:31:45,760 --> 03:31:57,590

[Applause]

2625

03:31:57,600 --> 03:32:01,349

damn on the fsc

2626
03:32:01,359 --> 03:32:33,349
happy shane

2627
03:32:36,790 --> 03:32:35,030
shane i'll take a glove inspection and a

2628
03:33:10,700 --> 03:32:36,800
half check from you and then we're

2629
03:33:10,710 --> 03:33:31,030
[Music]

2630
03:33:33,750 --> 03:33:32,790
sleepy door's just under your back back

2631
03:33:35,110 --> 03:33:33,760
here

2632
03:33:36,710 --> 03:33:35,120
i'll tell you what

2633
03:33:43,590 --> 03:33:36,720
i said you try this on the pack your

2634
03:33:43,600 --> 03:33:48,550
okay

2635
03:33:48,560 --> 03:33:52,469
there we go

2636
03:33:52,479 --> 03:33:58,130
nice

2637
03:33:58,140 --> 03:34:12,830
[Music]

2638
03:34:12,840 --> 03:34:21,750

okay okay

2639

03:34:28,550 --> 03:34:23,429

i have a big picture update for both of

2640

03:34:28,560 --> 03:34:34,229

um ready

2641

03:34:39,830 --> 03:34:36,150

okay so the next steps for tomorrow are

2642

03:34:42,469 --> 03:34:39,840

going to be to configure the arm

2643

03:34:44,309 --> 03:34:42,479

that means that we have about 20 to 30

2644

03:34:46,710 --> 03:34:44,319

minutes before we're ready for for

2645

03:34:48,469 --> 03:34:46,720

release from the sse

2646

03:34:51,349 --> 03:34:48,479

which shane are going to be your next

2647

03:34:52,790 --> 03:34:51,359

steps per the nominal timeline

2648

03:34:54,550 --> 03:34:52,800

so

2649

03:34:56,550 --> 03:34:54,560

we're

2650

03:34:58,790 --> 03:34:56,560

pulling you two on how you would feel

2651
03:35:01,269 --> 03:34:58,800
about get ahead on the r bolts on the

2652
03:35:04,150 --> 03:35:01,279
lower eye rosa for shane at this time

2653
03:35:06,070 --> 03:35:04,160
well toma you push with the arm reconfig

2654
03:35:09,590 --> 03:35:06,080
and the nominal r bolts for the upper

2655
03:35:09,600 --> 03:35:15,429
[Music]

2656
03:35:19,269 --> 03:35:17,429
in whichever intermediate configuration

2657
03:35:21,349 --> 03:35:19,279
we're in but we have to get through

2658
03:35:22,950 --> 03:35:21,359
certain points with those categories we

2659
03:35:29,910 --> 03:35:22,960
can break out from those our bolts at

2660
03:35:34,550 --> 03:35:32,630
um i need about five minutes here we can

2661
03:35:36,309 --> 03:35:34,560
take my weight better

2662
03:35:41,750 --> 03:35:36,319
so once i'm done with that i'll be i can

2663
03:35:45,990 --> 03:35:44,070

that sounds really good to us and

2664

03:35:47,830 --> 03:35:46,000

there is no rush you take your time

2665

03:35:49,190 --> 03:35:47,840

shane to configure your tethers and

2666

03:35:53,269 --> 03:35:49,200

tomorrow will push with your nominal

2667

03:35:55,750 --> 03:35:53,279

step shane let me know when you're ready

2668

03:35:56,469 --> 03:35:55,760

okay thank you it sounds good and i'll

2669

03:35:58,550 --> 03:35:56,479

be

2670

03:36:01,030 --> 03:35:58,560

ready megan if you're with us we're

2671

03:36:02,870 --> 03:36:01,040

getting mark i'll be ready for uh the

2672

03:36:05,510 --> 03:36:02,880

maneuvered ups

2673

03:36:07,750 --> 03:36:05,520

hfr install position

2674

03:36:09,590 --> 03:36:07,760

okay tomorrow megan's ready as well uh

2675

03:36:11,990 --> 03:36:09,600

this public position would be 50

2676

03:36:13,910 --> 03:36:12,000

centimeters station zenith

2677

03:36:15,269 --> 03:36:13,920

um do i understand correctly that you go

2678

03:36:18,220 --> 03:36:15,279

for gta or should we wait for other

2679

03:36:21,269 --> 03:36:18,230

crowns nope um

2680

03:36:24,250 --> 03:36:21,279

[Music]

2681

03:36:32,790 --> 03:36:24,260

hey let's start gca

2682

03:36:34,450 --> 03:36:32,800

[Music]

2683

03:36:46,150 --> 03:36:34,460

motion

2684

03:36:46,160 --> 03:36:53,170

here's the publish

2685

03:36:59,510 --> 03:36:55,510

[Music]

2686

03:36:59,520 --> 03:37:04,950

five

2687

03:37:11,590 --> 03:37:06,790

okay i heard you say stop motion is this

2688

03:37:26,070 --> 03:37:15,510

10 to 15 feet or that's a 20

2689

03:37:26,080 --> 03:37:35,550

so 20 more stations venus 20 miles

2690

03:37:35,560 --> 03:37:42,830

[Music]

2691

03:37:42,840 --> 03:37:47,510

emotions five to go

2692

03:37:51,349 --> 03:37:49,670

good position stuff pusher

2693

03:37:55,870 --> 03:37:51,359

happy stop motion and you want a 20

2694

03:37:55,880 --> 03:38:05,750

[Music]

2695

03:38:05,760 --> 03:38:21,020

um

2696

03:38:38,950 --> 03:38:34,350

[Music]

2697

03:38:43,110 --> 03:38:41,429

breaks on you do have a go to install

2698

03:39:00,800 --> 03:38:43,120

that acfr let me know when you're ready

2699

03:39:23,830 --> 03:39:18,620

[Music]

2700

03:39:36,110 --> 03:39:25,250

um

2701
03:39:54,870 --> 03:39:41,030

[Music]

2702
03:39:57,830 --> 03:39:56,630
and shane when you have a spare minute

2703
03:39:59,910 --> 03:39:57,840
understand you're working with your

2704
03:40:10,309 --> 03:39:59,920
tethers now could you please power cycle

2705
03:40:10,319 --> 03:40:16,790
gotta get a green light out

2706
03:40:16,800 --> 03:40:42,150
copy

2707
03:40:57,670 --> 03:40:45,590
looking for an install clocking of 12.

2708
03:41:00,469 --> 03:40:59,269
i can go ahead with the rest of the

2709
03:41:01,920 --> 03:41:00,479
settings please

2710
03:41:05,750 --> 03:41:01,930
papa papa box

2711
03:41:11,010 --> 03:41:07,269
foxtrot six

2712
03:41:11,020 --> 03:41:22,150
[Music]

2713
03:41:22,160 --> 03:41:26,880

uh

2714

03:42:03,110 --> 03:41:44,010

[Music]

2715

03:42:03,120 --> 03:42:15,070

copy good words

2716

03:42:15,080 --> 03:42:34,469

[Music]

2717

03:42:38,630 --> 03:42:37,189

then you have a clocking

2718

03:42:40,630 --> 03:42:38,640

and of twelve

2719

03:42:44,229 --> 03:42:40,640

full and success

2720

03:42:45,910 --> 03:42:44,239

black on black on the talking color

2721

03:42:50,710 --> 03:42:45,920

happy those are good checks and let's

2722

03:42:55,750 --> 03:42:52,950

and the kitchen all these parts actually

2723

03:43:01,429 --> 03:42:58,870

copy that's a good config come on

2724

03:43:03,930 --> 03:43:01,439

i can talk you through your safety cover

2725

03:43:06,229 --> 03:43:03,940

swap to the sfrms now

2726

03:43:08,870 --> 03:43:06,239

[Music]

2727

03:43:23,820 --> 03:43:08,880

uh give me just one second

2728

03:43:23,830 --> 03:43:29,429

[Music]

2729

03:43:33,189 --> 03:43:31,429

the timing still looks good so i'll get

2730

03:43:34,870 --> 03:43:33,199

a glove inspection and a half check from

2731

03:43:39,269 --> 03:43:34,880

you and then i have your first get ahead

2732

03:43:43,269 --> 03:43:41,189

okay left glove's good right glove i

2733

03:43:44,950 --> 03:43:43,279

have a little black smudge on the middle

2734

03:43:46,070 --> 03:43:44,960

finger

2735

03:43:48,710 --> 03:43:46,080

see that

2736

03:43:51,830 --> 03:43:48,720

a little bit more damage or anything

2737

03:43:52,950 --> 03:43:51,840

like this increase modes or something

2738

03:44:05,320 --> 03:43:52,960

copy

2739

03:44:14,550 --> 03:44:13,110

[Music]

2740

03:44:16,070 --> 03:44:14,560

first you'll lock your green tether

2741

03:44:31,180 --> 03:44:16,080

wheel and check your green hook is

2742

03:44:31,190 --> 03:44:42,229

[Music]

2743

03:44:46,950 --> 03:44:44,630

two hours five minutes into today's

2744

03:44:49,189 --> 03:44:46,960

spacewalk uh continuing to

2745

03:44:50,229 --> 03:44:49,199

receive breathtaking views of tomah

2746

03:44:51,670 --> 03:44:50,239

pesquet

2747

03:44:53,990 --> 03:44:51,680

at the flight support equipment

2748

03:44:57,510 --> 03:44:54,000

structure on the truss of the station

2749

03:44:59,670 --> 03:44:57,520

housing the first pair of irosa or iss

2750

03:45:01,670 --> 03:44:59,680

roll out solar arrays

2751
03:45:02,550 --> 03:45:01,680
one of which will be installed at the

2752
03:45:05,269 --> 03:45:02,560
base

2753
03:45:06,389 --> 03:45:05,279
of the p6 solar ray truss structure this

2754
03:45:08,950 --> 03:45:06,399
morning

2755
03:45:11,990 --> 03:45:08,960
to begin the augmentation of power

2756
03:45:14,309 --> 03:45:12,000
capability for the international outpost

2757
03:45:16,870 --> 03:45:14,319
pesquet is about to enter an

2758
03:45:19,110 --> 03:45:16,880
articulating portable foot restraint he

2759
03:45:21,830 --> 03:45:19,120
has attached at the end of the station's

2760
03:45:23,910 --> 03:45:21,840
robotic arm the canadarm2

2761
03:45:27,110 --> 03:45:23,920
that will be operated by astronaut megan

2762
03:45:28,710 --> 03:45:27,120
macarthur who will transport pesquet and

2763
03:45:30,630 --> 03:45:28,720

the first of the

2764

03:45:33,429 --> 03:45:30,640

two solar arrays

2765

03:45:35,510 --> 03:45:33,439

over to shane kimbrough at the p6 truss

2766

03:45:37,429 --> 03:45:35,520

to begin the installation of that array

2767

03:45:46,790 --> 03:45:37,439

at the mast canister

2768

03:45:50,389 --> 03:45:48,870

unfortunately

2769

03:45:51,590 --> 03:45:50,399

i'm gonna go ahead and unlock my green

2770

03:45:55,830 --> 03:45:51,600

reel

2771

03:45:55,840 --> 03:46:09,590

done

2772

03:46:24,790 --> 03:46:11,110

i gotta get our eye on me there's some

2773

03:46:29,110 --> 03:46:26,790

and shane we're just finishing up with

2774

03:46:30,870 --> 03:46:29,120

toma's tether swap at this time but i

2775

03:46:32,710 --> 03:46:30,880

can send you to the crewlock bag to

2776

03:46:34,229 --> 03:46:32,720

retrieve the socket caddy

2777

03:46:42,870 --> 03:46:34,239

you'll be installing a socket on the

2778

03:46:42,880 --> 03:46:49,400

all right that sounds like a lot

2779

03:47:05,349 --> 03:46:56,590

[Music]

2780

03:47:07,189 --> 03:47:05,359

uh understand you've attached your green

2781

03:47:09,030 --> 03:47:07,199

hook to structure unlock your green

2782

03:47:11,349 --> 03:47:09,040

tether wheel so that's right

2783

03:47:13,830 --> 03:47:11,359

once calm is clear you have a go to work

2784

03:47:25,429 --> 03:47:13,840

with ssrms to tca to the ingress

2785

03:47:44,309 --> 03:47:27,670

copy and

2786

03:47:48,870 --> 03:47:46,870

position 10 centimeters station forward

2787

03:47:51,030 --> 03:47:48,880

and five zero centimeters station nader

2788

03:47:52,229 --> 03:47:51,040

if that works for you that seems to be

2789

03:47:54,550 --> 03:47:52,239

perfect

2790

03:47:57,110 --> 03:47:54,560

uh so with that you can

2791

03:47:58,870 --> 03:47:57,120

get a gca i think it's a gc

2792

03:48:25,189 --> 03:47:58,880

sorry to visit gta with that we'll

2793

03:48:30,630 --> 03:48:27,189

sorry motion first motion is 10

2794

03:48:31,830 --> 03:48:30,640

centimeters station forward

2795

03:48:33,429 --> 03:48:31,840

so good

2796

03:48:39,910 --> 03:48:33,439

that's a good motion

2797

03:48:45,670 --> 03:48:41,990

okay to my correction we're going seven

2798

03:48:47,429 --> 03:48:45,680

zero centimeters station nader

2799

03:48:52,710 --> 03:48:47,439

seven zero that we should keep

2800

03:48:52,720 --> 03:48:58,550

thank you for stopping your mark

2801

03:49:02,389 --> 03:49:00,229

all right uh

2802

03:49:04,389 --> 03:49:02,399

looks like i can enter the ok file from

2803

03:49:06,870 --> 03:49:04,399

here without too many problems so i'll

2804

03:49:21,050 --> 03:49:06,880

call that gca completely copy gca

2805

03:49:25,349 --> 03:49:22,950

[Music]

2806

03:49:28,070 --> 03:49:25,359

waste tether to the apfr and then you

2807

03:49:30,389 --> 03:49:28,080

are go for ingress and shane i'm back

2808

03:49:34,630 --> 03:49:30,399

with you you're installing the 7 16 6

2809

03:49:37,110 --> 03:49:35,830

okay and

2810

03:49:38,469 --> 03:49:37,120

i was just going to call you and see

2811

03:49:39,990 --> 03:49:38,479

about the timing because it seems like

2812

03:49:41,910 --> 03:49:40,000

you keep pretty close but maybe i don't

2813

03:49:43,349 --> 03:49:41,920

have a big picture

2814

03:49:45,510 --> 03:49:43,359

yeah it's a big picture i can fill you

2815

03:49:47,830 --> 03:49:45,520

in there um we still have a couple of

2816

03:49:50,790 --> 03:49:47,840

arm motions and also those bolts which

2817

03:49:52,710 --> 03:49:50,800

require 245 turns so those will take a

2818

03:49:54,389 --> 03:49:52,720

couple minutes each and since we can

2819

03:49:56,150 --> 03:49:54,399

break out of doing

2820

03:49:58,630 --> 03:49:56,160

our bolts at any time we still think

2821

03:50:00,229 --> 03:49:58,640

it's worth getting one or two um but

2822

03:50:04,550 --> 03:50:00,239

we're keeping an eye on things let us

2823

03:50:08,710 --> 03:50:06,070

okay so i'm gonna put this seven

2824

03:50:10,630 --> 03:50:08,720

sixteenth six inch wobble on the

2825

03:50:21,930 --> 03:50:10,640

spare pgt there

2826

03:50:21,940 --> 03:50:30,070

[Music]

2827

03:50:42,229 --> 03:50:34,550

okay so it looks like both heels are in

2828

03:50:47,030 --> 03:50:44,150

i wish that on the

2829

03:50:51,269 --> 03:50:48,950

copy and if your tools and tethers are

2830

03:50:53,429 --> 03:50:51,279

clear and your ingress aid is stowed

2831

03:50:56,880 --> 03:50:53,439

you can maneuver to the back off

2832

03:50:56,890 --> 03:51:09,910

[Music]

2833

03:51:13,269 --> 03:51:11,349

i can't be there in just a minute if i

2834

03:51:15,269 --> 03:51:13,279

break out of this

2835

03:51:18,309 --> 03:51:15,279

just to have a vote that you said there

2836

03:51:25,010 --> 03:51:18,319

and everything looking good

2837

03:51:25,020 --> 03:51:36,790

[Music]

2838

03:51:36,800 --> 03:51:40,870

so

2839

03:52:07,189 --> 03:51:48,389

[Music]

2840

03:52:17,510 --> 03:52:09,530

copy looking for a good pull test

2841

03:52:22,309 --> 03:52:19,510

the way we see it on the arm is we've

2842

03:52:23,910 --> 03:52:22,319

got to move you a little bit to get to a

2843

03:52:25,590 --> 03:52:23,920

spot that'll still be a gca because

2844

03:52:31,750 --> 03:52:25,600

you're so close to structure

2845

03:52:35,590 --> 03:52:34,309

we've got about 37 years to do as a gca

2846

03:52:36,870 --> 03:52:35,600

and after that we'll just do a manual

2847

03:52:38,950 --> 03:52:36,880

back off and over

2848

03:52:41,750 --> 03:52:38,960

okay that's so good and i would be made

2849

03:52:43,429 --> 03:52:41,760

here right at uca

2850

03:52:47,030 --> 03:52:43,439

affirmative uh let me know when you want

2851
03:52:49,990 --> 03:52:47,040
to start that gca prior to dca

2852
03:52:51,429 --> 03:52:50,000
i'm going to pass instructions to shane

2853
03:52:54,229 --> 03:52:51,439
thank you shane you're going to be

2854
03:52:56,229 --> 03:52:54,239
working near stanchion bravo which is

2855
03:53:17,750 --> 03:52:56,239
inboard and venus

2856
03:53:17,760 --> 03:53:25,510
foreign

2857
03:53:29,590 --> 03:53:27,670
and shane i can hold on settings for you

2858
03:53:31,230 --> 03:53:29,600
until you're ready we're about 20

2859
03:53:38,550 --> 03:53:31,240
seconds from handover as well

2860
03:53:42,710 --> 03:53:40,550
okay

2861
03:53:45,830 --> 03:53:42,720
and uh during the handover i think we

2862
03:53:47,990 --> 03:53:45,840
can stop the gca or mark if you agree

2863
03:53:58,229 --> 03:53:48,000

we agree and we're starting at gca 30

2864

03:54:02,830 --> 03:54:00,630

two hours fifteen minutes into today's

2865

03:54:05,510 --> 03:54:02,840

space walk tomorrow pesky and shane

2866

03:54:06,950 --> 03:54:05,520

kimbrough are working

2867

03:54:09,510 --> 03:54:06,960

together

2868

03:54:11,510 --> 03:54:09,520

on different tasks but essentially it's

2869

03:54:14,070 --> 03:54:11,520

all the same work

2870

03:54:16,150 --> 03:54:14,080

to prepare for and conduct the release

2871

03:54:19,429 --> 03:54:16,160

of a series of bolts

2872

03:54:23,510 --> 03:54:19,439

for the irosa or the iss rollout solar

2873

03:54:28,469 --> 03:54:25,990

and a launch restraint

2874

03:54:30,870 --> 03:54:28,479

that is holding the boom in place on the

2875

03:54:34,070 --> 03:54:30,880

flight support equipment

2876

03:54:37,910 --> 03:54:34,080

pallet if you will that uh the arrays

2877

03:54:40,389 --> 03:54:37,920

were carried up on uh during launch

2878

03:54:41,590 --> 03:54:40,399

two weeks ago on the spacex cargo dragon

2879

03:54:43,910 --> 03:54:41,600

vehicle

2880

03:54:46,389 --> 03:54:43,920

there are two uh bolts uh that must be

2881

03:54:48,469 --> 03:54:46,399

released for the for the boom deployment

2882

03:54:49,910 --> 03:54:48,479

restraint system

2883

03:54:52,630 --> 03:54:49,920

there is uh

2884

03:54:55,830 --> 03:54:52,640

an additional pair of bolts that release

2885

03:54:57,269 --> 03:54:55,840

an outer deployment restraint

2886

03:54:59,429 --> 03:54:57,279

capability

2887

03:55:02,150 --> 03:54:59,439

basically they're freeing up the irosa

2888

03:55:04,389 --> 03:55:02,160

array the first of the two sets of

2889

03:55:06,790 --> 03:55:04,399

arrays carried to orbit

2890

03:55:08,950 --> 03:55:06,800

so that pesquet can transport the first

2891

03:55:11,990 --> 03:55:08,960

of the arrays over to kimbrough at the

2892

03:55:14,469 --> 03:55:12,000

p6 worksite for its installation on a

2893

03:55:17,670 --> 03:55:14,479

bracket or a modification kit as it is

2894

03:55:19,830 --> 03:55:17,680

called that was uh erected and installed

2895

03:55:23,260 --> 03:55:19,840

on the international space station on a

2896

03:55:26,950 --> 03:55:24,730

[Music]

2897

03:55:28,630 --> 03:55:26,960

[Applause]

2898

03:55:30,790 --> 03:55:28,640

yeah i think it's a good ebay first you

2899

03:55:53,510 --> 03:55:30,800

gotta drive me from me

2900

03:55:53,520 --> 03:56:08,469

and we're starting motions um

2901
03:56:13,590 --> 03:56:10,229
and just a reminder this is not a gca so

2902
03:56:23,030 --> 03:56:15,030
we agree shane let me know when you're

2903
03:56:35,030 --> 03:56:24,469
was not the bag settings just got the

2904
03:56:38,870 --> 03:56:36,870
inside the international space station

2905
03:56:40,950 --> 03:56:38,880
nasa astronaut mark vanda high has

2906
03:56:43,269 --> 03:56:40,960
joined megan macarthur

2907
03:56:46,309 --> 03:56:43,279
at the robotics workstation

2908
03:56:48,469 --> 03:56:46,319
macarthur is the prime crew member to

2909
03:56:50,630 --> 03:56:48,479
maneuver pesquet

2910
03:56:52,469 --> 03:56:50,640
from the flight support equipment

2911
03:56:53,750 --> 03:56:52,479
housing the

2912
03:56:55,830 --> 03:56:53,760
solar array

2913
03:56:57,750 --> 03:56:55,840

over to the

2914

03:57:00,469 --> 03:56:57,760

work site at the p6 truss where

2915

03:57:01,349 --> 03:57:00,479

kimbrough is conducting uh some advanced

2916

03:57:04,150 --> 03:57:01,359

work

2917

03:57:07,269 --> 03:57:04,160

for sunday's second spacewalk in this

2918

03:57:10,710 --> 03:57:07,279

series in which the second of the two

2919

03:57:13,670 --> 03:57:10,720

iss rollout solar arrays will be removed

2920

03:57:16,150 --> 03:57:13,680

from its flight support equipment and

2921

03:57:19,510 --> 03:57:16,160

maneuvered to the other side of the p6

2922

03:57:21,670 --> 03:57:19,520

truss to hook up to the 4b power channel

2923

03:57:24,710 --> 03:57:21,680

today's work involves hooking up the

2924

03:57:57,750 --> 03:57:24,720

first of the two solar arrays to the 2b

2925

03:58:00,790 --> 03:57:59,910

good how are you tomorrow i'm good i see

2926
03:58:06,389 --> 03:58:00,800
you there

2927
03:58:06,399 --> 03:58:12,389
coming over to the brothers all right

2928
03:58:27,429 --> 03:58:14,469
let's see the next pekka

2929
03:58:27,439 --> 03:58:34,070
okay jimmy uh direct me to r5 please

2930
03:58:50,469 --> 03:58:37,830
copy r5 is at stanton bravo

2931
03:58:57,269 --> 03:58:52,550
okay and which way if i'm driving it is

2932
03:58:57,279 --> 03:59:03,429
or alford

2933
03:59:14,550 --> 03:59:05,429
the bolt should be pointing toward you

2934
03:59:22,469 --> 03:59:16,150
looks like you're in the right position

2935
03:59:26,710 --> 03:59:24,469
hey firm you're on the zenith

2936
03:59:29,269 --> 03:59:26,720
venus inboard side

2937
03:59:45,670 --> 03:59:29,279
so it's on the root beam facing you

2938
03:59:48,790 --> 03:59:47,269

okay tomorrow ready for a motion it's

2939

03:59:49,750 --> 03:59:48,800

going to be about a two-minute journal

2940

03:59:51,189 --> 03:59:49,760

cast

2941

04:00:04,550 --> 03:59:51,199

today or back off

2942

04:00:09,269 --> 04:00:06,309

it should be in between the stanchion

2943

04:00:12,150 --> 04:00:09,279

and the poa

2944

04:00:16,229 --> 04:00:14,229

and it should be just closer to the

2945

04:00:22,790 --> 04:00:16,239

expansion than a

2946

04:00:22,800 --> 04:00:27,670

i see a ball right next to the handrails

2947

04:00:27,680 --> 04:00:34,630

hey firm that should be it

2948

04:00:38,070 --> 04:00:36,550

and that should be eft

2949

04:00:41,830 --> 04:00:38,080

that should be labeled

2950

04:00:45,990 --> 04:00:43,750

shane kimbrough

2951
04:00:50,790 --> 04:00:46,000
at the flight support equipment housing

2952
04:00:52,550 --> 04:00:50,800
the iss rollout solar arrays as he tries

2953
04:00:55,269 --> 04:00:52,560
to loosen up a couple of additional

2954
04:00:57,830 --> 04:00:55,279
bolts that will assist

2955
04:01:01,030 --> 04:00:57,840
in the removal of the first of the two

2956
04:01:03,510 --> 04:01:01,040
arrays that toma pesquet will haul over

2957
04:01:05,030 --> 04:01:03,520
to the p6 truss while the affixed to a

2958
04:01:19,110 --> 04:01:05,040
foot restraint at the end of the

2959
04:01:28,269 --> 04:01:21,189
a two minute heads up for you guys we're

2960
04:01:28,279 --> 04:01:33,110
pass back home

2961
04:01:33,120 --> 04:01:39,510
copy thank you tama

2962
04:01:44,229 --> 04:01:42,710
okay jimmy i'm ready for settings

2963
04:01:45,750 --> 04:01:44,239

bravo two

2964

04:01:47,269 --> 04:01:45,760

counter two

2965

04:01:49,670 --> 04:01:47,279

and you'll be releasing that bolt

2966

04:01:56,309 --> 04:01:49,680

eighteen to twenty turns it'll pop out

2967

04:01:56,319 --> 04:02:02,950

two counter two

2968

04:02:12,389 --> 04:02:04,389

those are good words we'll also be

2969

04:02:12,399 --> 04:02:27,429

getting access

2970

04:02:27,439 --> 04:02:52,309

no um at all shane this is

2971

04:02:57,429 --> 04:02:55,030

all right so our next step will be a gca

2972

04:02:58,870 --> 04:02:57,439

to published the published gives you 75

2973

04:03:07,269 --> 04:02:58,880

centimeters

2974

04:03:08,550 --> 04:03:07,279

does that work for you uh works fine for

2975

04:03:09,910 --> 04:03:08,560

me mark

2976

04:03:14,550 --> 04:03:09,920

okay i'll wait for your command to start

2977

04:03:32,950 --> 04:03:14,560

that gta okay you can install gca

2978

04:03:32,960 --> 04:03:40,550

happy good motion

2979

04:03:44,309 --> 04:03:42,469

continue

2980

04:03:54,389 --> 04:03:44,319

continuing

2981

04:03:54,399 --> 04:03:58,070

25 years ago

2982

04:03:58,080 --> 04:04:02,710

motion mark

2983

04:04:07,750 --> 04:04:05,990

i think that's good as far as

2984

04:04:09,349 --> 04:04:07,760

but i'll need

2985

04:04:12,389 --> 04:04:09,359

two synthetic

2986

04:04:15,349 --> 04:04:12,399

r1 or 2 or 3r4

2987

04:04:16,950 --> 04:04:15,359

i need some station forward or a motion

2988

04:04:28,030 --> 04:04:16,960

towards my head

2989

04:04:36,389 --> 04:04:32,150

[Music]

2990

04:04:44,389 --> 04:04:39,269

a firm you will be starting with r1

2991

04:04:46,790 --> 04:04:45,189

okay

2992

04:04:48,950 --> 04:04:46,800

i'm actually now in a good position for

2993

04:04:51,910 --> 04:04:48,960

all three and r4 but i'll go ahead and

2994

04:04:53,750 --> 04:04:51,920

uh bcaa 15 centimeter

2995

04:04:57,670 --> 04:04:53,760

um head

2996

04:05:14,950 --> 04:04:58,630

while we're going

2997

04:05:19,429 --> 04:05:17,429

you can also do r3 and r4 if you're in a

2998

04:05:22,870 --> 04:05:19,439

better position for those now save the

2999

04:05:26,630 --> 04:05:23,910

i'm actually

3000

04:05:28,870 --> 04:05:26,640

actually in a good position to do this

3001
04:05:33,030 --> 04:05:28,880
so reverse mark i'll call gca complete

3002
04:05:35,349 --> 04:05:33,040
for now copy did you see it complete

3003
04:05:39,590 --> 04:05:35,359
the reference by uh spacewalk

3004
04:05:42,469 --> 04:05:39,600
communicator jenny sidey of r1 2 3 and 4

3005
04:05:43,269 --> 04:05:42,479
refer to a quartet of bolts

3006
04:05:45,910 --> 04:05:43,279
that

3007
04:05:48,389 --> 04:05:45,920
are associated with uh the boom

3008
04:05:51,349 --> 04:05:48,399
deployment uh restraints

3009
04:05:53,349 --> 04:05:51,359
holding the iss rollout solar array in

3010
04:05:56,630 --> 04:05:53,359
place during the launch phase

3011
04:06:00,790 --> 04:05:56,640
which now must be loosened uh to

3012
04:06:02,790 --> 04:06:00,800
enable the uh the boom itself to unfold

3013
04:06:06,229 --> 04:06:02,800

from its folded position and then for

3014

04:06:08,870 --> 04:06:06,239

the array ultimately to unfurl to its uh

3015

04:06:16,070 --> 04:06:08,880

distance of about 60 feet later in the

3016

04:06:20,469 --> 04:06:17,349

okay

3017

04:06:21,510 --> 04:06:20,479

alpha three clockwise three

3018

04:06:22,469 --> 04:06:21,520

pgp

3019

04:06:27,269 --> 04:06:22,479

early

3020

04:06:34,229 --> 04:06:29,670

i can't reach that uh r5 with any

3021

04:06:37,110 --> 04:06:35,510

poppy shane

3022

04:06:50,469 --> 04:06:37,120

we're talking that

3023

04:06:56,309 --> 04:06:53,990

a firm 245 turns on r3 if you call out

3024

04:07:01,990 --> 04:06:56,319

your turns will keep it in in sync with

3025

04:07:09,030 --> 04:07:04,550

okay alpha 3

3026
04:07:11,030 --> 04:07:09,040
4 3 245 on all three with your frequent

3027
04:07:13,990 --> 04:07:11,040
turn content at the beginning and then

3028
04:07:31,870 --> 04:07:14,000
that's frequent as i progress

3029
04:07:35,510 --> 04:07:33,590
[Music]

3030
04:07:37,030 --> 04:07:35,520
and shane we're talking that issue down

3031
04:07:38,550 --> 04:07:37,040
here on the ground

3032
04:07:40,149 --> 04:07:38,560
again we're in no rush for our get ahead

3033
04:07:41,349 --> 04:07:40,159
so we're taking that into consideration

3034
04:07:45,830 --> 04:07:41,359
and we're around 30 seconds from

3035
04:07:49,830 --> 04:07:47,910
approaching the two and a half hour mark

3036
04:07:51,910 --> 04:07:49,840
into the walk

3037
04:07:54,389 --> 04:07:51,920
shane kimbrough working with a pistol

3038
04:07:56,630 --> 04:07:54,399

grip tool or rather tomah pesquet

3039

04:07:59,349 --> 04:07:56,640

working with the pistol grip tool

3040

04:08:01,830 --> 04:07:59,359

to release a series of bolts for the

3041

04:08:38,469 --> 04:08:01,840

boom deployment mechanism

3042

04:08:42,149 --> 04:08:40,389

i'm good i'm just hanging out i can't i

3043

04:08:43,349 --> 04:08:42,159

can't access this bolt so they're

3044

04:08:45,349 --> 04:08:43,359

thinking about it

3045

04:08:48,229 --> 04:08:45,359

that's what i was hearing i didn't see

3046

04:08:51,670 --> 04:08:48,239

it when i was there

3047

04:08:53,510 --> 04:08:51,680

it's just too deep in the power blocks

3048

04:08:55,030 --> 04:08:53,520

i think we can get to it once the upper

3049

04:08:57,429 --> 04:08:55,040

our roadster is going

3050

04:08:58,630 --> 04:08:57,439

uh i think we'll need a longer

3051

04:09:00,630 --> 04:08:58,640

extension

3052

04:09:02,309 --> 04:09:00,640

oh and we're back with you after the

3053

04:09:04,550 --> 04:09:02,319

handover

3054

04:09:06,149 --> 04:09:04,560

shane we copy um you think you might

3055

04:09:09,349 --> 04:09:06,159

need a longer socket for that bolt is

3056

04:09:13,110 --> 04:09:11,510

yeah this is going to have to be like

3057

04:09:17,910 --> 04:09:13,120

valve 8 12 i'll get there i think it

3058

04:09:17,920 --> 04:09:24,550

okay copy

3059

04:09:31,030 --> 04:09:26,309

okay do you want me to show you what how

3060

04:09:35,830 --> 04:09:33,830

we don't have your helmet cam yet after

3061

04:10:07,429 --> 04:09:35,840

the uh the handover but i'll let you

3062

04:10:12,950 --> 04:10:09,830

it's probably six to seven inches short

3063

04:10:16,550 --> 04:10:15,189

i'm watching here against the fella and

3064

04:10:19,189 --> 04:10:16,560

uh

3065

04:10:37,670 --> 04:10:19,199

with the v side

3066

04:10:42,149 --> 04:10:39,910

and shane do you think any reorientation

3067

04:10:43,110 --> 04:10:42,159

of the pgt would help i understand

3068

04:10:44,550 --> 04:10:43,120

you've tried a lot of different

3069

04:10:47,990 --> 04:10:44,560

positions we just want to be thorough

3070

04:10:52,790 --> 04:10:49,990

i mean at least with my reach i can't

3071

04:10:55,189 --> 04:10:52,800

get the pgt any closer than this

3072

04:10:56,550 --> 04:10:55,199

well no matter what orientation is

3073

04:10:58,710 --> 04:10:56,560

doesn't matter

3074

04:11:00,309 --> 04:10:58,720

that's not the limiting factor for me

3075

04:11:10,950 --> 04:11:00,319

okay i copy shane thanks for letting us

3076

04:11:10,960 --> 04:11:29,510

2 30 turns 2 30.

3077

04:11:32,870 --> 04:11:31,670

i'm not in a position to see indicator

3078

04:11:38,670 --> 04:11:32,880

right now

3079

04:11:42,870 --> 04:11:41,030

245 turns tomorrow you know that was a

3080

04:11:44,389 --> 04:11:42,880

lot well done and that you can't from

3081

04:11:46,630 --> 04:11:44,399

your current position cannot see the

3082

04:11:49,110 --> 04:11:46,640

base of the root beam so with that we

3083

04:11:52,309 --> 04:11:49,120

will move on to our four i have new

3084

04:11:56,870 --> 04:11:54,790

okay first of all i need uh some gca

3085

04:11:59,189 --> 04:11:56,880

mark and megan if you guys are here i

3086

04:12:02,469 --> 04:11:59,199

need to go body right for

3087

04:12:05,990 --> 04:12:02,479

at least i'll say 20 centimeters maybe

3088

04:12:08,550 --> 04:12:06,000

so tomorrow prior to taking calm for gca

3089

04:12:09,990 --> 04:12:08,560

uh just some words for shane um we're

3090

04:12:10,710 --> 04:12:10,000

not sure if the

3091

04:12:14,389 --> 04:12:10,720

the

3092

04:12:15,750 --> 04:12:14,399

longer socket would help with reach um

3093

04:12:17,750 --> 04:12:15,760

but at this point we're going to send

3094

04:12:20,469 --> 04:12:17,760

you back to the crewlock bag to do a

3095

04:12:22,149 --> 04:12:20,479

socket swap to the 12 inch socket and

3096

04:12:23,590 --> 04:12:22,159

assess that reach and that'll be the

3097

04:12:30,550 --> 04:12:23,600

only get ahead that we're working in

3098

04:12:34,710 --> 04:12:33,349

as we follow along with pesquet and

3099

04:12:37,030 --> 04:12:34,720

kimbrough

3100

04:12:39,030 --> 04:12:37,040

not only are they working to release the

3101

04:12:41,830 --> 04:12:39,040

final bolts for the first of the two

3102

04:12:44,550 --> 04:12:41,840

solar arrays the irosa arrays that are

3103

04:12:46,070 --> 04:12:44,560

housed on the flight support structure

3104

04:12:48,229 --> 04:12:46,080

on the trust of the station there's a

3105

04:12:49,189 --> 04:12:48,239

good view

3106

04:12:51,590 --> 04:12:49,199

of the

3107

04:12:53,910 --> 04:12:51,600

two arrays the first pair

3108

04:12:56,229 --> 04:12:53,920

launched

3109

04:12:57,910 --> 04:12:56,239

on the spacex cargo dragon flight two

3110

04:13:00,550 --> 04:12:57,920

weeks ago but they're all they have been

3111

04:13:03,189 --> 04:13:00,560

working on some get ahead work to try to

3112

04:13:05,590 --> 04:13:03,199

loosen up bolts for sunday's next

3113

04:13:08,229 --> 04:13:05,600

spacewalk that will have the second of

3114

04:13:10,630 --> 04:13:08,239

the two arrays released from that flight

3115

04:13:15,110 --> 04:13:10,640

support equipment structure and mounted

3116

04:13:15,120 --> 04:13:18,710

i'm sorry to light in copy with that

3117

04:13:23,189 --> 04:13:21,269

motion did you use that motion

3118

04:13:26,309 --> 04:13:23,199

yes stop motion okay

3119

04:13:28,309 --> 04:13:26,319

complete thank you did you say complete

3120

04:13:30,149 --> 04:13:28,319

all right and i'm ready for settings on

3121

04:13:32,229 --> 04:13:30,159

r4 uh

3122

04:13:34,469 --> 04:13:32,239

and break your app and break our own

3123

04:13:50,790 --> 04:13:34,479

thank you copy copy breaks on your

3124

04:13:56,309 --> 04:13:53,189

zero on the turn count you can release

3125

04:13:59,750 --> 04:13:56,319

our for 245 turns we're following along

3126
04:14:07,110 --> 04:14:01,429
alpha 3

3127
04:14:07,120 --> 04:14:29,510
copy

3128
04:14:29,520 --> 04:15:08,370
uh

3129
04:15:08,380 --> 04:15:20,630
[Music]

3130
04:15:20,640 --> 04:15:45,110
assisted turns

3131
04:15:45,120 --> 04:16:09,189
five

3132
04:16:09,199 --> 04:16:28,469
return

3133
04:16:33,670 --> 04:16:31,349
two hours 37 minutes into the spacewalk

3134
04:16:36,309 --> 04:16:33,680
pesquet and kimbrough still working to

3135
04:16:39,030 --> 04:16:36,319
release the final bolts that will free

3136
04:16:42,710 --> 04:16:39,040
up the first of the two irosa solar

3137
04:16:46,149 --> 04:16:42,720
arrays from its flight support structure

3138
04:16:48,710 --> 04:16:46,159

that will enable pesquet to begin

3139

04:17:01,510 --> 04:16:48,720

transporting that array over to the p6

3140

04:17:01,520 --> 04:17:21,750

five years

3141

04:17:21,760 --> 04:17:41,590

blue

3142

04:17:41,600 --> 04:17:51,810

andrew

3143

04:18:12,309 --> 04:17:53,830

[Music]

3144

04:18:12,319 --> 04:18:20,970

okay

3145

04:18:24,020 --> 04:18:22,370

[Applause]

3146

04:18:31,030 --> 04:18:24,030

[Music]

3147

04:18:35,080 --> 04:18:32,790

you pull chest on our 12 amp standard

3148

04:18:37,510 --> 04:18:35,090

6-inch summer socket caddy

3149

04:18:40,149 --> 04:18:37,520

[Music]

3150

04:18:47,510 --> 04:18:40,159

45-4

3151
04:18:50,389 --> 04:18:49,030
all right

3152
04:18:52,389 --> 04:18:50,399
um

3153
04:18:55,429 --> 04:18:52,399
if you're good to

3154
04:18:56,710 --> 04:18:55,439
become i'll need some emergency f4201

3155
04:18:58,630 --> 04:18:56,720
you got it

3156
04:19:05,990 --> 04:18:58,640
all right mark

3157
04:19:10,389 --> 04:19:08,550
and you're go for the gca

3158
04:19:12,710 --> 04:19:10,399
we'll have shane move back to the r5

3159
04:19:15,189 --> 04:19:12,720
socket or our five volt and test that

3160
04:19:20,870 --> 04:19:15,199
socket for reach um otherwise you can

3161
04:19:24,070 --> 04:19:22,469
until i was on the run loop again and i

3162
04:19:25,990 --> 04:19:24,080
am ready for the gta number that comes

3163
04:19:26,950 --> 04:19:26,000

been used

3164

04:19:40,870 --> 04:19:26,960

for that

3165

04:19:48,149 --> 04:19:44,510

centimeters body up starting motion

3166

04:19:48,159 --> 04:20:06,900

happy good motion

3167

04:20:06,910 --> 04:20:10,830

[Music]

3168

04:20:16,149 --> 04:20:13,750

complete breaks are on help people ready

3169

04:20:21,510 --> 04:20:18,229

understand you have settings for me for

3170

04:20:30,309 --> 04:20:21,520

r2 hey firm your settings for r2 are

3171

04:20:35,750 --> 04:20:34,389

a firm you'll be releasing r2 10 to 13

3172

04:20:48,070 --> 04:20:35,760

turns and the bolt will spring out when

3173

04:20:48,080 --> 04:20:53,030

it's alpha four counter two

3174

04:20:57,030 --> 04:20:55,269

boxer four countries

3175

04:20:58,560 --> 04:20:57,040

attached

3176
04:21:00,309 --> 04:20:58,570
upper four countries two

3177
04:21:04,070 --> 04:21:00,319
[Music]

3178
04:21:04,080 --> 04:21:10,070
hey firm 10 to 13 turns

3179
04:21:10,080 --> 04:21:20,790
work

3180
04:21:24,870 --> 04:21:23,110
and shane now that you're back at the r5

3181
04:21:28,870 --> 04:21:24,880
bolt how does that reach look with the

3182
04:21:32,149 --> 04:21:30,149
you know now i'll let you know here

3183
04:21:40,990 --> 04:21:32,159
shortly

3184
04:21:41,000 --> 04:21:49,269
[Music]

3185
04:21:58,309 --> 04:21:52,950
copy 10 turns r2 released

3186
04:22:02,469 --> 04:22:00,950
need to do the pdf on that side or go to

3187
04:22:04,790 --> 04:22:02,479
r1 now

3188
04:22:07,429 --> 04:22:04,800

so you can do the bds now that you've

3189

04:22:09,110 --> 04:22:07,439

released r2 or you can do them both

3190

04:22:12,950 --> 04:22:09,120

together afterward it just depends on

3191

04:22:16,790 --> 04:22:15,269

okay although

3192

04:22:17,670 --> 04:22:16,800

i might have to move

3193

04:22:19,590 --> 04:22:17,680

on

3194

04:22:21,349 --> 04:22:19,600

okay copy so if you rotate it now just

3195

04:22:23,429 --> 04:22:21,359

keep in mind that you need to rotate it

3196

04:22:25,830 --> 04:22:23,439

slowly to the deployed position

3197

04:22:27,750 --> 04:22:25,840

and after rotation it might not rest

3198

04:22:30,790 --> 04:22:27,760

fully on the blanket in the rotated

3199

04:22:30,800 --> 04:22:44,309

after

3200

04:22:48,630 --> 04:22:46,790

okay coffee

3201
04:22:53,910 --> 04:22:48,640
we have time to do that bolt now so your

3202
04:22:57,910 --> 04:22:56,229
that's right

3203
04:23:00,710 --> 04:22:57,920
you'll be released slowly but surely

3204
04:23:04,070 --> 04:23:00,720
tomorrow pesquet is rotating the

3205
04:23:07,189 --> 04:23:04,080
boom deployment system handle

3206
04:23:09,110 --> 04:23:07,199
that will ultimately enable

3207
04:23:13,590 --> 04:23:09,120
the array to be

3208
04:23:19,030 --> 04:23:16,229
and for the uh array itself which is

3209
04:23:21,670 --> 04:23:19,040
basically folded up in its two sections

3210
04:23:25,269 --> 04:23:21,680
of the boom folded up

3211
04:23:27,429 --> 04:23:25,279
in half will enable the boom to unfurl

3212
04:23:30,389 --> 04:23:27,439
at the point at which uh it is installed

3213
04:23:32,309 --> 04:23:30,399

at the base of the p6 solar ray truss

3214

04:23:37,830 --> 04:23:32,319

that looks like a great view for us

3215

04:23:44,550 --> 04:23:41,510

and i'm ready to ask well a mark if you

3216

04:23:46,870 --> 04:23:44,560

can give me occasion you're ready to uh

3217

04:23:48,710 --> 04:23:46,880

give me gca there you go

3218

04:23:52,070 --> 04:23:48,720

okay mark if you're ready

3219

04:23:54,790 --> 04:23:52,080

i would need 20 centimeters i'll watch

3220

04:23:54,800 --> 04:23:58,950

a coffee houston need to come

3221

04:23:58,960 --> 04:24:03,910

you go for gca you can take the cop

3222

04:24:07,830 --> 04:24:05,750

okay we're starting the gca 20

3223

04:24:18,389 --> 04:24:07,840

centimeters body left

3224

04:24:28,469 --> 04:24:21,110

you have good motion i've got good motor

3225

04:24:31,990 --> 04:24:29,910

okay that's the 20 centimeters you asked

3226

04:24:33,110 --> 04:24:32,000

for and we can stop

3227

04:24:34,790 --> 04:24:33,120

the ocean

3228

04:24:39,189 --> 04:24:34,800

and it's a good position i'll call you

3229

04:24:41,990 --> 04:24:39,199

so you can see the gta complete

3230

04:24:43,349 --> 04:24:42,000

okay jenny i got 20 turns on there um it

3231

04:24:44,950 --> 04:24:43,359

looks like it's popped out i can't

3232

04:24:46,229 --> 04:24:44,960

completely see you just do the lighting

3233

04:24:47,590 --> 04:24:46,239

right now

3234

04:24:50,870 --> 04:24:47,600

um

3235

04:24:54,790 --> 04:24:52,389

copy shane i'll have words for you

3236

04:24:58,229 --> 04:24:54,800

shortly and copy breaks on first for

3237

04:25:02,469 --> 04:24:58,239

tomah your settings for r1 are alpha 4

3238

04:25:07,110 --> 04:25:03,830

alpha 4

3239

04:25:09,750 --> 04:25:07,120

counter clockwise 2.

3240

04:25:11,349 --> 04:25:09,760

a firm you'll be releasing r1 10 to 13

3241

04:25:14,870 --> 04:25:11,359

turns and the bolt will spring out when

3242

04:25:14,880 --> 04:25:26,309

213 turns then they're both

3243

04:25:35,590 --> 04:25:28,710

jimmy looks like the bolt is out to me

3244

04:25:39,830 --> 04:25:38,070

copy shane that sounds good to us uh

3245

04:25:41,269 --> 04:25:39,840

that's the completion of the get-aheads

3246

04:25:43,670 --> 04:25:41,279

that we're going to do in this time so

3247

04:25:45,910 --> 04:25:43,680

you can stow that pgt

3248

04:25:47,030 --> 04:25:45,920

and then we're going to send you to look

3249

04:25:49,349 --> 04:25:47,040

at the

3250

04:25:51,110 --> 04:25:49,359

uh the indicator on the base of the root

3251
04:25:55,830 --> 04:25:51,120
beam that would have popped out when

3252
04:26:03,750 --> 04:25:58,630
okay

3253
04:26:05,590 --> 04:26:03,760
on the r1 and the whole

3254
04:26:07,189 --> 04:26:05,600
dropout

3255
04:26:09,830 --> 04:26:07,199
it popped up it

3256
04:26:13,750 --> 04:26:09,840
looks really really

3257
04:26:15,830 --> 04:26:13,760
copy r1 popped out 11 turns

3258
04:26:19,830 --> 04:26:15,840
same way that you did with the r2 boom

3259
04:26:21,590 --> 04:26:19,840
deployment system you can rotate the bds

3260
04:26:23,990 --> 04:26:21,600
associated with r1 to the deployed

3261
04:26:25,590 --> 04:26:24,000
position slowly and keep in mind it

3262
04:26:28,830 --> 04:26:25,600
might not contact the blanket in the

3263
04:26:37,750 --> 04:26:31,990

position i'm rotating

3264

04:27:07,750 --> 04:26:38,710

jenny where are you where would you like

3265

04:27:12,950 --> 04:27:10,469

you can give ssrms a go to maneuver

3266

04:27:15,030 --> 04:27:12,960

to the nader back off position we'll be

3267

04:27:17,429 --> 04:27:15,040

preparing for our rosa release if you

3268

04:27:21,510 --> 04:27:17,439

need a gca prior to taking the calm i'll

3269

04:27:24,790 --> 04:27:22,309

okay

3270

04:27:31,110 --> 04:27:24,800

i don't think it's a gta mark unless you

3271

04:27:31,120 --> 04:28:10,070

and we're working it here

3272

04:28:10,080 --> 04:28:16,630

motion

3273

04:28:16,640 --> 04:28:23,269

okay

3274

04:28:27,830 --> 04:28:25,510

two hours 50 minutes into uh today's

3275

04:28:29,110 --> 04:28:27,840

spacewalk by tomah pesquet and shane

3276

04:28:32,070 --> 04:28:29,120

kimbrough

3277

04:28:35,590 --> 04:28:32,080

the uh bolts holding the first of the

3278

04:28:38,469 --> 04:28:35,600

two iss rollout solar arrays

3279

04:28:39,670 --> 04:28:38,479

have been disengaged

3280

04:28:42,790 --> 04:28:39,680

the

3281

04:28:44,950 --> 04:28:42,800

boom deployment system handles have been

3282

04:28:47,670 --> 04:28:44,960

properly configured

3283

04:28:50,550 --> 04:28:47,680

you see a tomah pesquet in this view

3284

04:28:52,870 --> 04:28:50,560

with the red stripes on his suit at the

3285

04:28:56,070 --> 04:28:52,880

end of the station's canadian build

3286

04:28:59,750 --> 04:28:56,080

robotic arm in a foot restraint

3287

04:29:02,149 --> 04:28:59,760

as we await the actual release of this

3288

04:29:12,630 --> 04:29:02,159

solar array from its flight support

3289

04:29:15,910 --> 04:29:14,149

and shane we're going to send you back

3290

04:29:20,229 --> 04:29:15,920

to the crewlock bag which is on the

3291

04:29:21,750 --> 04:29:20,239

nader outboard side of the fse

3292

04:29:23,590 --> 04:29:21,760

that should set you up well for the next

3293

04:29:25,429 --> 04:29:23,600

steps at the crewlock bag and you should

3294

04:29:27,030 --> 04:29:25,439

also be able to get in a good position

3295

04:29:30,830 --> 04:29:27,040

to look at the base of the root beam of

3296

04:29:34,309 --> 04:29:33,110

okay and jimmy um

3297

04:29:36,630 --> 04:29:34,319

we just got

3298

04:29:41,429 --> 04:29:36,640

an audible warning i got nothing on my

3299

04:29:41,439 --> 04:29:47,510

copy of blank dcm we're looking into it

3300

04:29:52,389 --> 04:29:50,070

you statistic

3301
04:29:54,950 --> 04:29:52,399
look at that did you start it

3302
04:29:56,790 --> 04:29:54,960
you can't see anything it's blind

3303
04:29:59,110 --> 04:29:56,800
all right make it off

3304
04:30:17,269 --> 04:29:59,120
yeah but if you status it stays blank

3305
04:30:22,790 --> 04:30:18,950
shane confirmed that your dcm is still

3306
04:30:25,670 --> 04:30:24,870
correct

3307
04:30:29,830 --> 04:30:25,680
yeah

3308
04:30:29,840 --> 04:30:37,189
contrast to your max

3309
04:30:37,199 --> 04:31:02,469
goes on five

3310
04:31:06,309 --> 04:31:04,550
and shane whether you go forward or back

3311
04:31:12,550 --> 04:31:06,319
on that switch on your dcm it's the same

3312
04:31:12,560 --> 04:31:30,469
copy

3313
04:31:34,229 --> 04:31:32,469

still moving i have a hard time actually

3314

04:31:35,110 --> 04:31:34,239

feeling because it's slow and it's at

3315

04:31:36,870 --> 04:31:35,120

night

3316

04:31:38,550 --> 04:31:36,880

hey tomorrow yeah okay we're setting up

3317

04:31:41,030 --> 04:31:38,560

for our joint outcast and once we're

3318

04:31:43,030 --> 04:31:41,040

sure that shane's okay as well okay okay

3319

04:31:44,309 --> 04:31:43,040

so for now we're staying here

3320

04:31:45,910 --> 04:31:44,319

and we're going to set up the joint

3321

04:31:47,830 --> 04:31:45,920

casting we won't execute it until we

3322

04:31:49,990 --> 04:31:47,840

confirm with everybody that we should

3323

04:32:10,720 --> 04:31:50,000

sounds like a good plan ground copies

3324

04:32:56,790 --> 04:32:24,310

[Music]

3325

04:32:56,800 --> 04:33:25,830

[Applause]

3326

04:33:29,269 --> 04:33:27,670

shane can you check your display

3327

04:33:31,029 --> 04:33:29,279

intensity knob

3328

04:33:34,869 --> 04:33:31,039

and turning it to the left should

3329

04:33:56,869 --> 04:33:37,189

okay yeah just take a look but i'll see

3330

04:34:27,429 --> 04:34:00,629

okay it's fully to the left and nothing

3331

04:34:27,439 --> 04:34:31,910

i'm going to scour this 12-inch socket

3332

04:34:31,920 --> 04:34:35,109

checking

3333

04:34:38,310 --> 04:34:36,629

all right so now we are going to do the

3334

04:34:40,551 --> 04:34:38,320

first of three joint ocassion this one

3335

04:34:42,869 --> 04:34:40,561

will be two minutes long starting that

3336

04:34:42,879 --> 04:34:47,830

okay and uh can you go back with that

3337

04:34:52,709 --> 04:34:49,590

shane you can still now the ground pulls

3338

04:34:56,629 --> 04:34:54,789

shane you can sew the pgt on the tower

3339

04:35:13,269 --> 04:34:56,639

handrail no socket swap required we're

3340

04:35:16,709 --> 04:35:15,109

additional words for you shane we're

3341

04:35:18,629 --> 04:35:16,719

going to put the socket back on the

3342

04:35:23,990 --> 04:35:18,639

socket caddy while we're working this

3343

04:35:27,750 --> 04:35:26,230

if you already want the pgq to go

3344

04:36:07,429 --> 04:35:27,760

you just temp sew it on the tower

3345

04:36:07,439 --> 04:37:04,789

uh

3346

04:37:35,910 --> 04:37:05,910

while we're set up for the second or

3347

04:37:38,789 --> 04:37:37,269

and shane just checking in with you

3348

04:37:40,390 --> 04:37:38,799

we're still talking about that suit

3349

04:37:42,150 --> 04:37:40,400

issue hopefully we have words for you

3350

04:37:47,830 --> 04:37:42,160

shortly i understand you're working the

3351
04:37:52,070 --> 04:37:50,070
the pgt's on the handrail and working

3352
04:37:53,349 --> 04:37:52,080
the socket now

3353
04:37:55,109 --> 04:37:53,359
so while we're starting that second of

3354
04:37:56,709 --> 04:37:55,119
three general casters this this one is

3355
04:37:58,310 --> 04:37:56,719
three minutes

3356
04:38:01,029 --> 04:37:58,320
i'm ready this is mission control

3357
04:38:03,189 --> 04:38:01,039
houston approaching the three hour mark

3358
04:38:05,750 --> 04:38:03,199
into uh today's space walk the view of

3359
04:38:08,390 --> 04:38:05,760
tomah pesquet in a foot restraint at the

3360
04:38:11,189 --> 04:38:08,400
end of the canadarm2 robotic arm

3361
04:38:14,709 --> 04:38:11,199
as he is poised to begin the extraction

3362
04:38:17,750 --> 04:38:14,719
of the uh irosa roll-up solar array from

3363
04:38:19,590 --> 04:38:17,760

its flight support structure however uh

3364

04:38:21,429 --> 04:38:19,600

a couple of data dropouts have been

3365

04:38:24,629 --> 04:38:21,439

noticed in shane kimbrough's

3366

04:38:27,189 --> 04:38:24,639

extravehicular mobility units suit

3367

04:38:30,150 --> 04:38:27,199

associated with his sublimator

3368

04:38:32,470 --> 04:38:30,160

which provides cooling for the suit and

3369

04:38:35,590 --> 04:38:32,480

the display control module that provides

3370

04:38:38,390 --> 04:38:35,600

him with an observation capability for

3371

04:38:40,230 --> 04:38:38,400

the data that the suit is producing this

3372

04:38:42,310 --> 04:38:40,240

may only be instrumentation at this

3373

04:38:43,990 --> 04:38:42,320

point but we're double checking to make

3374

04:38:46,390 --> 04:38:44,000

sure that there's no issue that would

3375

04:38:48,470 --> 04:38:46,400

prevent the array itself from being

3376

04:38:51,029 --> 04:38:48,480
extracted from its flight support

3377

04:38:55,609 --> 04:38:53,429
i'm doing good

3378

04:39:20,499 --> 04:38:55,619
uh

3379

04:39:20,509 --> 04:40:03,030
[Music]

3380

04:40:07,110 --> 04:40:04,868
shannon to my have a big picture update

3381

04:40:09,670 --> 04:40:07,120
for both of you

3382

04:40:11,750 --> 04:40:09,680
we are not committing to releasing irosa

3383

04:40:13,750 --> 04:40:11,760
from the fsd at this time until we have

3384

04:40:15,990 --> 04:40:13,760
a really strong lock on exactly what is

3385

04:40:18,070 --> 04:40:16,000
happening with your suit shane so we're

3386

04:40:19,910 --> 04:40:18,080
working that problem still down here

3387

04:40:22,550 --> 04:40:19,920
just so you know the next steps would be

3388

04:40:24,230 --> 04:40:22,560

getting to my into position to release

3389

04:40:25,910 --> 04:40:24,240

the irosa and we're not going to move

3390

04:40:30,390 --> 04:40:25,920

ahead with that until we know exactly

3391

04:40:39,540 --> 04:40:31,190

okay

3392

04:40:39,550 --> 04:40:52,550

[Music]

3393

04:41:00,470 --> 04:40:54,070

you would have to go back to the lock

3394

04:41:09,910 --> 04:41:02,310

we're talking about that now actually

3395

04:41:13,590 --> 04:41:12,070

spacewalk communicator jenny seidi here

3396

04:41:15,590 --> 04:41:13,600

in mission control

3397

04:41:17,190 --> 04:41:15,600

providing the two spacewalkers the big

3398

04:41:19,750 --> 04:41:17,200

picture

3399

04:41:22,948 --> 04:41:19,760

as we are at the point of releasing the

3400

04:41:23,910 --> 04:41:22,958

irosa solar array but it is contingent

3401

04:41:26,628 --> 04:41:23,920

on

3402

04:41:28,948 --> 04:41:26,638

comfortable

3403

04:41:31,670 --> 04:41:28,958

with the condition of shane kimbrough's

3404

04:41:34,150 --> 04:41:31,680

suit and his ability to read data from

3405

04:41:35,750 --> 04:41:34,160

his display control module which is

3406

04:41:39,990 --> 04:41:35,760

essentially a menu

3407

04:41:42,390 --> 04:41:40,000

of suit system status that he has access

3408

04:41:44,310 --> 04:41:42,400

to right in front of him uh to be able

3409

04:41:46,708 --> 04:41:44,320

to monitor the condition of a suit just

3410

04:41:49,270 --> 04:41:46,718

as the flight control team here in

3411

04:41:52,628 --> 04:41:49,280

mission control can monitor all of the

3412

04:42:50,660 --> 04:41:52,638

systems for both kim brosud and toma

3413

04:43:02,948 --> 04:42:56,980

[Music]

3414

04:43:04,708 --> 04:43:02,958

well we just finished that last joint

3415

04:43:06,390 --> 04:43:04,718

we are setting up for the next motion

3416

04:43:08,470 --> 04:43:06,400

which would be a gca but we'll talk

3417

04:43:12,390 --> 04:43:08,480

about that in a moment

3418

04:43:12,400 --> 04:43:25,590

and uh yeah three awards here

3419

04:43:25,600 --> 04:43:42,070

oh there you go

3420

04:43:46,628 --> 04:43:44,788

hi chain into my have next steps and an

3421

04:43:49,110 --> 04:43:46,638

answer for you on the suit

3422

04:43:51,510 --> 04:43:49,120

for now shane

3423

04:43:54,550 --> 04:43:51,520

what we are going to do is have you

3424

04:43:57,030 --> 04:43:54,560

return to the airlock at this time

3425

04:43:58,788 --> 04:43:57,040

and connect to the scu for a warm

3426

04:44:00,868 --> 04:43:58,798

restart

3427

04:44:02,788 --> 04:44:00,878

then we can assess the sublimator p

3428

04:44:04,948 --> 04:44:02,798

issue but we think that that will at

3429

04:44:06,470 --> 04:44:04,958

least help us diagnose and get a good

3430

04:44:07,910 --> 04:44:06,480

feel for exactly what's happening with

3431

04:44:10,390 --> 04:44:07,920

your dcm

3432

04:44:12,550 --> 04:44:10,400

toma we are going to continue

3433

04:44:14,230 --> 04:44:12,560

with the nominal procedure and hold

3434

04:44:18,310 --> 04:44:14,240

until shane is back and we sort out

3435

04:44:21,030 --> 04:44:19,830

okay

3436

04:44:23,350 --> 04:44:21,040

um

3437

04:44:28,868 --> 04:44:25,990

get your screw back by yourself

3438

04:44:31,350 --> 04:44:28,878

no problem the words uh from spacewalk

3439

04:44:34,310 --> 04:44:31,360

communicator jenny seidi to the crew

3440

04:44:36,628 --> 04:44:34,320

outside the international space station

3441

04:44:39,830 --> 04:44:36,638

the decision by flight director ron

3442

04:44:41,750 --> 04:44:39,840

spencer here in mission control to have

3443

04:44:43,910 --> 04:44:41,760

shane kimbrough return

3444

04:44:45,110 --> 04:44:43,920

for a few minutes back to the quest

3445

04:44:48,070 --> 04:44:45,120

airlock

3446

04:44:50,390 --> 04:44:48,080

to hook himself back up to an umbilical

3447

04:44:54,070 --> 04:44:50,400

and do a restart

3448

04:44:56,550 --> 04:44:54,080

of the display control module which is a

3449

04:44:59,670 --> 04:44:56,560

data center if you will attached to his

3450

04:45:01,510 --> 04:44:59,680

extra vehicular mobility unit

3451
04:45:03,830 --> 04:45:01,520
ron spencer uh with his back to the

3452
04:45:05,190 --> 04:45:03,840
camera in the blue shirt drew feustel

3453
04:45:08,868 --> 04:45:05,200
veteran astronaut and veteran

3454
04:45:10,628 --> 04:45:08,878
spacewalker talking to spacewalk

3455
04:45:12,150 --> 04:45:10,638
lead officer

3456
04:45:14,470 --> 04:45:12,160
keith johnson

3457
04:45:16,470 --> 04:45:14,480
in the back row

3458
04:45:18,070 --> 04:45:16,480
as they prepare for the next set of

3459
04:45:20,708 --> 04:45:18,080
steps so this is essentially a

3460
04:45:24,230 --> 04:45:20,718
diagnostic

3461
04:45:26,788 --> 04:45:24,240
effort to restart this display control

3462
04:45:28,868 --> 04:45:26,798
module which is important providing data

3463
04:45:32,708 --> 04:45:28,878

to the crew members while they are

3464

04:45:33,590 --> 04:45:32,718

outside in the void of space

3465

04:45:34,310 --> 04:45:33,600

come on

3466

04:45:37,350 --> 04:45:34,320

actually

3467

04:45:39,190 --> 04:45:37,360

right here so houston station on one

3468

04:45:40,788 --> 04:45:39,200

um just want to make sure we're in sync

3469

04:45:44,150 --> 04:45:40,798

we're going to go ahead and execute step

3470

04:45:46,628 --> 04:45:44,160

12 of the robo procedure to get tomato

3471

04:45:49,270 --> 04:45:46,638

thyrosis zenith manual maneuver or

3472

04:45:55,030 --> 04:45:49,280

tyrosis venus position and want to check

3473

04:46:00,470 --> 04:45:57,750

yes station houston uh you are correct

3474

04:46:02,230 --> 04:46:00,480

we'll have you finish up 11 and 12. that

3475

04:46:04,150 --> 04:46:02,240

would have us in a good position if we

3476
04:46:06,230 --> 04:46:04,160
were needing to execute any additional

3477
04:46:07,510 --> 04:46:06,240
steps to assist shane but for now that

3478
04:46:10,310 --> 04:46:07,520
also puts you in a good position to

3479
04:46:12,550 --> 04:46:10,320
continue procedures nominal procedures

3480
04:46:14,070 --> 04:46:12,560
and shane will go back to the airlock uh

3481
04:46:16,708 --> 04:46:14,080
we'll get him on the su we're going to

3482
04:46:18,230 --> 04:46:16,718
check out a restart on that dcm

3483
04:46:20,788 --> 04:46:18,240
and and we'll go from there so we think

3484
04:46:22,230 --> 04:46:20,798
that puts us in the best config to

3485
04:46:23,910 --> 04:46:22,240
sort out the problem and then decide if

3486
04:46:28,788 --> 04:46:23,920
we're going to carry on shane will be in

3487
04:46:31,990 --> 04:46:30,390
okay tomorrow we're standing by for your

3488
04:46:34,788 --> 04:46:32,000

command for the gca

3489

04:46:36,868 --> 04:46:34,798

okay and more just to clarify uh you

3490

04:46:38,948 --> 04:46:36,878

confirmed that in case i had to

3491

04:46:41,030 --> 04:46:38,958

get that to go assist chain i would have

3492

04:46:43,750 --> 04:46:41,040

to address the arm here at the at the

3493

04:46:46,070 --> 04:46:43,760

ssc and climb down on the follow-up is

3494

04:46:49,270 --> 04:46:46,080

that correct

3495

04:46:53,830 --> 04:46:51,670

you would uh uh provide this gca and

3496

04:46:55,030 --> 04:46:53,840

then egress the apfr in order to assist

3497

04:46:56,788 --> 04:46:55,040

ev2

3498

04:46:58,310 --> 04:46:56,798

because there's there's really not that

3499

04:46:59,350 --> 04:46:58,320

many dude that involves for me to

3500

04:47:01,590 --> 04:46:59,360

impress

3501

04:47:03,750 --> 04:47:01,600

at the ssc i mean on that

3502

04:47:04,948 --> 04:47:03,760

that i'm on i think it's doable but i

3503

04:47:06,788 --> 04:47:04,958

think

3504

04:47:09,190 --> 04:47:06,798

kind of regress we get to see a card

3505

04:47:12,230 --> 04:47:09,200

before we started all this but okay now

3506

04:47:13,830 --> 04:47:12,240

that we're here i'm ready for gca to uh

3507

04:47:15,990 --> 04:47:13,840

the nfc

3508

04:47:17,590 --> 04:47:16,000

we copy all and we understand we're

3509

04:47:20,230 --> 04:47:17,600

putting ourselves in the best position

3510

04:47:21,830 --> 04:47:20,240

copy your uh comments about

3511

04:47:23,670 --> 04:47:21,840

the necessity to get off the arm if we

3512

04:47:24,948 --> 04:47:23,680

are in that case soma i just want to

3513

04:47:26,788 --> 04:47:24,958

remind shane

3514

04:47:29,270 --> 04:47:26,798

again heading back to the airlock about

3515

04:47:30,948 --> 04:47:29,280

that adjustable which is on the thermal

3516

04:47:32,550 --> 04:47:30,958

cover that he's going to have to remove

3517

04:47:36,948 --> 04:47:32,560

in order to get back in there and

3518

04:47:36,958 --> 04:47:41,990

thanks jimmy

3519

04:47:45,590 --> 04:47:43,750

this is mission control houston the big

3520

04:47:48,948 --> 04:47:45,600

picture here is that shane kimbrough is

3521

04:47:51,670 --> 04:47:48,958

in absolutely no danger whatsoever

3522

04:47:53,510 --> 04:47:51,680

he is fine out there just simply making

3523

04:47:55,830 --> 04:47:53,520

his way back to the quest airlock to the

3524

04:47:58,070 --> 04:47:55,840

crewlock section we'll hook his suit

3525

04:48:00,550 --> 04:47:58,080

back up to an umbilical

3526
04:48:01,670 --> 04:48:00,560
and do a restart of the display control

3527
04:48:04,150 --> 04:48:01,680
module

3528
04:48:07,190 --> 04:48:04,160
which is a data center if you will

3529
04:48:09,430 --> 04:48:07,200
providing information to him

3530
04:48:11,990 --> 04:48:09,440
while he's outside of the international

3531
04:48:18,550 --> 04:48:12,000
space station on the condition of suit

3532
04:48:18,560 --> 04:48:38,070
25 centimeters

3533
04:48:38,080 --> 04:48:54,708
five

3534
04:48:59,270 --> 04:48:56,150
and i think it's a good motion if you

3535
04:49:01,190 --> 04:48:59,280
stop motion and uh colleges you can see

3536
04:49:03,430 --> 04:49:01,200
it's done that's the call position

3537
04:49:10,310 --> 04:49:03,440
uh copy gca complete

3538
04:50:01,700 --> 04:49:12,788

copy gca complete at this time tomorrow

3539

04:50:25,750 --> 04:50:06,910

[Music]

3540

04:50:28,788 --> 04:50:27,190

all right tomorrow i'm getting to the

3541

04:50:43,660 --> 04:50:28,798

seat of spur

3542

04:50:43,670 --> 04:50:48,150

[Music]

3543

04:50:52,150 --> 04:50:50,310

and shane we're about 50 seconds from a

3544

04:50:53,350 --> 04:50:52,160

handover now that you're getting up to

3545

04:50:54,550 --> 04:50:53,360

the airlock i'll tell you when we're

3546

04:50:56,788 --> 04:50:54,560

back with you but we're going to have

3547

04:50:58,390 --> 04:50:56,798

you ingress the airlock and hook up to

3548

04:51:00,390 --> 04:50:58,400

the scu

3549

04:51:02,868 --> 04:51:00,400

we'll be with you to perform a re uh

3550

04:51:05,990 --> 04:51:02,878

warm restart after the handover

3551
04:51:12,150 --> 04:51:06,000
and tomorrow if you want to follow along

3552
04:51:12,160 --> 04:51:17,110
warmer stuff will come through there

3553
04:51:17,120 --> 04:51:46,708
[Music]

3554
04:51:51,350 --> 04:51:48,470
this is mission control houston three

3555
04:51:54,470 --> 04:51:51,360
hours 13 minutes into today's spacewalk

3556
04:51:57,430 --> 04:51:54,480
by pesquet and kimbrough

3557
04:51:59,110 --> 04:51:57,440
we've temporarily lost our downlink from

3558
04:52:01,030 --> 04:51:59,120
the international space station as we

3559
04:52:02,788 --> 04:52:01,040
hand over

3560
04:52:04,948 --> 04:52:02,798
between satellites on the tracking and

3561
04:52:07,270 --> 04:52:04,958
data relay satellite system

3562
04:52:09,830 --> 04:52:07,280
shane kimbrough is almost back at the

3563
04:52:12,390 --> 04:52:09,840

quest airlock where he will enter the

3564

04:52:15,350 --> 04:52:12,400

crew lock section put a suit on an

3565

04:52:16,470 --> 04:52:15,360

umbilical and do what is called a hot

3566

04:52:18,708 --> 04:52:16,480

restart

3567

04:52:20,390 --> 04:52:18,718

of his display control module this is

3568

04:52:23,750 --> 04:52:20,400

essentially a data

3569

04:52:24,390 --> 04:52:23,760

box on the suit that provides suit data

3570

04:52:25,910 --> 04:52:24,400

for

3571

04:52:27,910 --> 04:52:25,920

him and other

3572

04:52:29,590 --> 04:52:27,920

space walking crew members while they're

3573

04:52:30,550 --> 04:52:29,600

outside of the international space

3574

04:52:32,708 --> 04:52:30,560

station

3575

04:52:33,590 --> 04:52:32,718

there were some intermittent dropouts of

3576

04:52:35,430 --> 04:52:33,600

data

3577

04:52:37,350 --> 04:52:35,440

and we want to make sure that that suit

3578

04:52:39,430 --> 04:52:37,360

is providing a

3579

04:52:41,910 --> 04:52:39,440

cohesive and continuous data for the

3580

04:52:43,670 --> 04:52:41,920

crew member outside before we press

3581

04:52:46,310 --> 04:52:43,680

ahead with pesquet

3582

04:52:48,868 --> 04:52:46,320

removing the irosa solar array from its

3583

04:52:51,350 --> 04:52:48,878

flight support equipment

3584

04:52:53,910 --> 04:52:51,360

located on the truss of the station all

3585

04:52:55,910 --> 04:52:53,920

of the bolts have been released

3586

04:52:57,510 --> 04:52:55,920

for that

3587

04:53:00,070 --> 04:52:57,520

irosa array

3588

04:53:01,910 --> 04:53:00,080

the next step uh assuming everything

3589

04:53:04,550 --> 04:53:01,920

goes as planned with the restart of this

3590

04:53:05,670 --> 04:53:04,560

display control module would have

3591

04:53:07,990 --> 04:53:05,680

pesquet

3592

04:53:10,550 --> 04:53:08,000

removing the array

3593

04:53:11,430 --> 04:53:10,560

from the flight support equipment

3594

04:53:13,510 --> 04:53:11,440

and

3595

04:53:16,390 --> 04:53:13,520

moving it at the end of the station's

3596

04:53:18,550 --> 04:53:16,400

robotic arm over to the p6 truss where

3597

04:53:21,190 --> 04:53:18,560

he and kimbrough would then work in

3598

04:54:03,910 --> 04:53:21,200

concert with one another to install it

3599

04:54:12,070 --> 04:54:05,350

hi jenny

3600

04:54:16,070 --> 04:54:13,590

okay coffee shane so we're going to

3601
04:54:18,150 --> 04:54:16,080
perform a warm restart now that you have

3602
04:54:21,030 --> 04:54:18,160
that cuff checklist page open and again

3603
04:54:22,948 --> 04:54:21,040
that's page 28 for tomah to follow along

3604
04:54:25,910 --> 04:54:22,958
you will not be performing that cuff

3605
04:54:28,310 --> 04:54:25,920
checklist i'll be talking you through it

3606
04:54:30,788 --> 04:54:28,320
in a warm restart for calm failure i'll

3607
04:54:33,110 --> 04:54:30,798
lead you through the following steps

3608
04:54:36,070 --> 04:54:33,120
which will be step 4.3 to the end of the

3609
04:54:38,150 --> 04:54:36,080
page to reset your dcm display if you

3610
04:54:39,750 --> 04:54:38,160
unexpectedly lose calm or encounter any

3611
04:54:48,470 --> 04:54:39,760
issues you can use the cuff checklist to

3612
04:54:54,868 --> 04:54:50,948
in this procedure the fan and power will

3613
04:54:56,708 --> 04:54:54,878

be taken off off for seven seconds

3614

04:54:58,948 --> 04:54:56,718

while the fan is off you'll be without

3615

04:55:00,628 --> 04:54:58,958

cooling and co2 removal

3616

04:55:02,948 --> 04:55:00,638

overheating and loss of visibility from

3617

04:55:05,110 --> 04:55:02,958

fogging are possible

3618

04:55:07,750 --> 04:55:05,120

and there will be no calm until you take

3619

04:55:09,590 --> 04:55:07,760

the power back to bat

3620

04:55:11,830 --> 04:55:09,600

if fan operation is delayed or not

3621

04:55:14,550 --> 04:55:11,840

restored or power is not restored after

3622

04:55:22,708 --> 04:55:14,560

switching back to bat open and lock the

3623

04:55:25,830 --> 04:55:23,750

okay

3624

04:55:27,430 --> 04:55:25,840

take a moment to confirm power and fan

3625

04:55:29,830 --> 04:55:27,440

switch access

3626
04:55:32,230 --> 04:55:29,840
the specific actions will be to switch

3627
04:55:34,390 --> 04:55:32,240
fan off off

3628
04:55:36,390 --> 04:55:34,400
switch power to scu

3629
04:55:38,310 --> 04:55:36,400
wait seven seconds

3630
04:55:40,708 --> 04:55:38,320
switch power back to bat

3631
04:55:42,310 --> 04:55:40,718
and switch fan back to on

3632
04:55:48,550 --> 04:55:42,320
when complete with the warm restart

3633
04:55:52,470 --> 04:55:49,510
okay

3634
04:55:53,910 --> 04:55:52,480
i'm gonna go um in this order it'll be

3635
04:55:54,788 --> 04:55:53,920
i'm not doing it now but i'm talking to

3636
04:55:56,628 --> 04:55:54,798
it

3637
04:55:59,270 --> 04:55:56,638
and off

3638
04:56:01,590 --> 04:55:59,280

power to the scu

3639

04:56:05,910 --> 04:56:01,600

wait seven seconds and then power back

3640

04:56:05,920 --> 04:56:13,430

copy that's correct

3641

04:56:13,440 --> 04:56:20,230

when you're ready

3642

04:56:25,270 --> 04:56:22,070

okay shane we're ready for those steps

3643

04:56:28,230 --> 04:56:25,280

so you can switch fan to off off

3644

04:57:16,470 --> 04:56:28,240

expect fan switch off tone for seven

3645

04:57:24,070 --> 04:57:19,110

hey jimmy hopefully i'm back with you

3646

04:57:28,788 --> 04:57:25,910

um i have

3647

04:57:31,030 --> 04:57:28,798

uh end status so i have things on my dcm

3648

04:57:32,868 --> 04:57:31,040

now which is great

3649

04:57:38,200 --> 04:57:32,878

copy you have things on your dcm that's

3650

04:57:38,210 --> 04:57:42,390

[Applause]

3651
04:57:44,868 --> 04:57:43,590
and chain we're just talking the other

3652
04:57:46,868 --> 04:57:44,878
if you had the

3653
04:57:52,628 --> 04:57:46,878
the sublimator p

3654
04:57:52,638 --> 04:57:56,628
you guys saw down there with sophie

3655
04:57:56,638 --> 04:58:02,470
say again

3656
04:58:06,390 --> 04:58:03,990
yeah we're just talking on the other

3657
04:58:15,350 --> 04:58:06,400
issue that we had but i'm glad

3658
04:58:18,230 --> 04:58:17,030
he talked to me about the self-hatred

3659
04:58:46,628 --> 04:58:18,240
because i didn't obviously didn't see

3660
05:00:51,350 --> 04:58:48,470
we're talking it's still shane i'll have

3661
05:00:51,360 --> 05:01:17,990
um

3662
05:01:22,390 --> 05:01:19,670
this is mission control houston three

3663
05:01:24,310 --> 05:01:22,400

hours 22 minutes into the spacewalk

3664

05:01:26,470 --> 05:01:24,320

shane kimbrough back in the quest

3665

05:01:27,990 --> 05:01:26,480

airlock standing by for further words

3666

05:01:29,750 --> 05:01:28,000

i'm comfortable with your current

3667

05:01:31,670 --> 05:01:29,760

position

3668

05:01:33,670 --> 05:01:31,680

with your dcm

3669

05:01:34,628 --> 05:01:33,680

we did see a spike in sublimator

3670

05:01:36,390 --> 05:01:34,638

pressure

3671

05:01:38,070 --> 05:01:36,400

we're looking at the data now and still

3672

05:01:40,550 --> 05:01:38,080

analyzing whether we want to push

3673

05:01:42,788 --> 05:01:40,560

forward with removing the

3674

05:01:44,470 --> 05:01:42,798

irosa from the fse

3675

05:01:46,150 --> 05:01:44,480

but things have leveled off for now

3676
05:01:47,510 --> 05:01:46,160
we're still looking at that and we'll

3677
05:01:50,150 --> 05:01:47,520
keep you updated

3678
05:01:51,590 --> 05:01:50,160
for now with a good config on your dcm

3679
05:01:57,990 --> 05:01:51,600
we're going to have you head back out to

3680
05:02:02,310 --> 05:02:00,070
so those words from spacewalk

3681
05:02:04,788 --> 05:02:02,320
communicator jenny seide

3682
05:02:05,750 --> 05:02:04,798
returning to the quest airlock did the

3683
05:02:07,990 --> 05:02:05,760
trick

3684
05:02:10,070 --> 05:02:08,000
in restarting uh his

3685
05:02:13,430 --> 05:02:10,080
kimbrough's display control module which

3686
05:02:15,910 --> 05:02:13,440
is essentially a data box on his extra

3687
05:02:18,070 --> 05:02:15,920
vehicular mobility unit spacesuit

3688
05:02:19,590 --> 05:02:18,080

providing suit data for him while he's

3689

05:02:21,750 --> 05:02:19,600

outside of the international space

3690

05:02:24,788 --> 05:02:21,760

station you're looking at a view from

3691

05:02:26,868 --> 05:02:24,798

kimbrough's helmet camera as he

3692

05:02:29,830 --> 05:02:26,878

will now remove the umbilical that he

3693

05:02:32,868 --> 05:02:29,840

hooked himself up to a moment ago for

3694

05:02:34,708 --> 05:02:32,878

the restart of that so-called dcm which

3695

05:02:37,190 --> 05:02:34,718

is the acronym for display control

3696

05:02:40,230 --> 05:02:37,200

module the other issue

3697

05:02:43,190 --> 05:02:40,240

that we're taking a look at is pressure

3698

05:02:45,750 --> 05:02:43,200

in the suits sublimator which provides

3699

05:02:48,708 --> 05:02:45,760

the proper cooling for the spacesuit

3700

05:02:51,750 --> 05:02:48,718

there was a momentary blip in data a

3701

05:02:54,150 --> 05:02:51,760

short time ago and that's under analysis

3702

05:02:56,070 --> 05:02:54,160

by engineers here in mission control and

3703

05:02:58,948 --> 05:02:56,080

that will be a determinant factor in

3704

05:03:01,350 --> 05:02:58,958

whether we proceed in removing the irosa

3705

05:03:06,850 --> 05:03:01,360

solar array from its flight support

3706

05:03:25,350 --> 05:03:08,868

[Applause]

3707

05:03:29,110 --> 05:03:27,190

this view of shane kimbrough now

3708

05:03:30,788 --> 05:03:29,120

re-emerging from the airlock and he will

3709

05:03:32,948 --> 05:03:30,798

go out

3710

05:03:35,590 --> 05:03:32,958

to the support structure on the port

3711

05:03:37,990 --> 05:03:35,600

truss of the station to rejoin toma

3712

05:03:49,990 --> 05:03:38,000

pesque and await further words from the

3713

05:03:53,830 --> 05:03:51,750

and shane understand you're working on

3714

05:03:55,590 --> 05:03:53,840

closing the thermal cover at this time

3715

05:03:57,670 --> 05:03:55,600

we're also going to have you power cycle

3716

05:04:01,788 --> 05:03:57,680

your heka when you have a spare point so

3717

05:04:06,948 --> 05:04:05,190

one okay

3718

05:04:10,550 --> 05:04:06,958

come on update for you again we're

3719

05:04:12,550 --> 05:04:10,560

holding prior to uh releasing the arosa

3720

05:04:14,310 --> 05:04:12,560

from the fse we still not made that

3721

05:04:16,628 --> 05:04:14,320

decision and we want to be really safe

3722

05:04:18,470 --> 05:04:16,638

before we make it

3723

05:04:21,030 --> 05:04:18,480

the next step i have for you would be

3724

05:04:22,628 --> 05:04:21,040

attach a red to the micro square

3725

05:04:24,708 --> 05:04:22,638

uh the scoop on the micro square will

3726

05:04:29,270 --> 05:04:24,718

hold for that for now but i will take a

3727

05:04:29,280 --> 05:04:34,550

yep

3728

05:04:40,708 --> 05:04:37,110

i copy the next would be all right on

3729

05:04:49,990 --> 05:04:40,718

the screen that's under microscope

3730

05:04:54,310 --> 05:04:51,510

your thermal cover is closed the

3731

05:05:21,600 --> 05:04:54,320

adjustable is in place

3732

05:05:21,610 --> 05:05:34,230

[Applause]

3733

05:05:34,240 --> 05:05:52,390

hey

3734

05:05:55,190 --> 05:05:53,670

all right tomorrow i'm on the sea that's

3735

05:05:56,708 --> 05:05:55,200

where we're heading your way

3736

05:06:02,230 --> 05:05:56,718

okay

3737

05:07:15,030 --> 05:06:03,628

anything

3738

05:07:19,510 --> 05:07:17,910

hi chain we have next steps for you

3739

05:07:22,948 --> 05:07:19,520

we're going to be back in the cuff

3740

05:07:24,390 --> 05:07:22,958

checklist to address the sublim p

3741

05:07:26,708 --> 05:07:24,400

message we're going to have you pause

3742

05:07:33,350 --> 05:07:26,718

your translation here put down a local

3743

05:07:40,868 --> 05:07:36,230

we're looking for pages

3744

05:07:42,070 --> 05:07:40,878

copy we see it page 1919

3745

05:07:46,070 --> 05:07:42,080

sublime p

3746

05:07:50,708 --> 05:07:49,350

down there so we turn my water off

3747

05:07:58,390 --> 05:07:50,718

a firm

3748

05:07:58,400 --> 05:08:03,110

comes water off

3749

05:08:03,120 --> 05:08:07,350

copy

3750

05:08:12,788 --> 05:08:09,910

let's get a water off message that's

3751
05:08:12,798 --> 05:08:17,270
a firm

3752
05:08:17,280 --> 05:08:21,510
okay so your statement no

3753
05:08:21,520 --> 05:08:36,708
and let me check this up

3754
05:08:36,718 --> 05:08:45,740
1.7

3755
05:08:52,150 --> 05:08:50,390
[Music]

3756
05:08:54,708 --> 05:08:52,160
it'll take a little while to stabilize

3757
05:09:21,830 --> 05:08:54,718
so we'll hold here and see what uh what

3758
05:09:21,840 --> 05:09:52,788
copy we'll give it another 20 seconds

3759
05:09:58,868 --> 05:09:56,470
all right point zero or zero point six

3760
05:10:06,150 --> 05:09:58,878
copy zero point five

3761
05:10:06,160 --> 05:10:12,230
let me continue step three

3762
05:10:12,240 --> 05:10:15,910
checking

3763
05:10:23,510 --> 05:10:18,470

0.3 now

3764

05:10:26,628 --> 05:10:24,788

we're still looking for that to

3765

05:10:46,310 --> 05:10:26,638

stabilize so i copy point three let's

3766

05:10:50,708 --> 05:10:48,390

all right chain let's push with step

3767

05:10:52,628 --> 05:10:50,718

three if you give me a reading more

3768

05:11:09,910 --> 05:10:52,638

comfortable with you setting your tcv to

3769

05:11:09,920 --> 05:11:13,430

it's max hot

3770

05:11:13,440 --> 05:11:18,868

water coming on ready for that ready

3771

05:11:29,990 --> 05:11:20,788

your water is on

3772

05:11:57,990 --> 05:11:32,868

pcb

3773

05:11:58,000 --> 05:12:03,670

okay

3774

05:12:08,150 --> 05:12:06,550

how you doing out there

3775

05:12:11,910 --> 05:12:08,160

good mark

3776

05:12:11,920 --> 05:12:15,350

thanks for checking

3777

05:12:19,430 --> 05:12:17,990

in my clear dirt get back up you are

3778

05:12:20,868 --> 05:12:19,440

we're just talking that down here and if

3779

05:12:25,430 --> 05:12:20,878

your cooling is sufficient we can

3780

05:12:29,430 --> 05:12:26,830

no thank you

3781

05:12:30,708 --> 05:12:29,440

guys gonna help work out happy and

3782

05:12:32,470 --> 05:12:30,718

you're both doing a great job we just

3783

05:12:43,430 --> 05:12:32,480

want to be super safe here

3784

05:12:47,990 --> 05:12:44,868

tomorrow checking in with you how are

3785

05:12:56,390 --> 05:12:49,990

good thanks um

3786

05:12:56,400 --> 05:13:32,708

copy glad to hear it thanks so much

3787

05:13:32,718 --> 05:14:48,628

that's a mom at the fhrc

3788

05:15:02,310 --> 05:14:51,350

shane once you're back on the fse we'll

3789

05:15:02,320 --> 05:15:12,070

thank you coming back shane

3790

05:15:12,080 --> 05:15:18,788

here's your green okay

3791

05:15:22,948 --> 05:15:20,868

this is mission control houston

3792

05:15:25,750 --> 05:15:22,958

three hours 36 minutes into the

3793

05:15:28,310 --> 05:15:25,760

spacewalk shane kimbrough now uh

3794

05:15:30,470 --> 05:15:28,320

back outside of the quest airlock after

3795

05:15:33,350 --> 05:15:30,480

spending a few minutes uh on an

3796

05:15:37,190 --> 05:15:33,360

umbilical to uh perform what is called a

3797

05:15:37,910 --> 05:15:37,200

warm restart of his data display that's

3798

05:15:55,270 --> 05:15:37,920

a

3799

05:15:59,270 --> 05:15:55,280

engineers

3800

05:16:02,230 --> 05:15:59,280

is a temporary blip a quick spike

3801

05:16:05,030 --> 05:16:02,240

in the reading of pressure for his suit

3802

05:16:06,470 --> 05:16:05,040

sublimator that provides cooling for his

3803

05:16:10,550 --> 05:16:06,480

spacesuit

3804

05:16:12,948 --> 05:16:10,560

it appears as if that has now stabilized

3805

05:16:16,470 --> 05:16:12,958

the discussion currently underway uh

3806

05:16:18,470 --> 05:16:16,480

before we commit to removing the irosa

3807

05:16:20,390 --> 05:16:18,480

solar array from its flight support

3808

05:16:22,708 --> 05:16:20,400

equipment structure

3809

05:16:24,390 --> 05:16:22,718

is uh whether or not the sublimator now

3810

05:16:27,190 --> 05:16:24,400

has stabilized and whether we have

3811

05:16:30,310 --> 05:16:27,200

confidence that this is only a sensor

3812

05:16:33,110 --> 05:16:30,320

issue perhaps and not a real issue with

3813

05:16:35,030 --> 05:16:33,120

the sublimator itself we have you back

3814

05:16:37,030 --> 05:16:35,040

at the tower handrail again you'll be

3815

05:16:40,628 --> 05:16:37,040

retrieving your pgt

3816

05:16:42,628 --> 05:16:40,638

so the green pgt

3817

05:16:45,510 --> 05:16:42,638

but first before you do that we're going

3818

05:16:47,430 --> 05:16:45,520

to have you cycle your heka again so

3819

05:17:00,310 --> 05:16:47,440

power cycle on and off and confirm a

3820

05:17:00,320 --> 05:17:13,750

copy green light

3821

05:17:13,760 --> 05:17:32,310

so

3822

05:17:32,320 --> 05:17:36,470

um

3823

05:17:36,480 --> 05:17:55,990

okay

3824

05:18:00,150 --> 05:17:57,670

shane we're just wanting to get a couple

3825

05:18:02,948 --> 05:18:00,160

more data points on the dcm issue had

3826

05:18:05,830 --> 05:18:02,958

you checked your dcm at all since

3827

05:18:09,260 --> 05:18:05,840

the depress and exiting the

3828

05:18:11,750 --> 05:18:09,270

egressing the airlock

3829

05:18:15,030 --> 05:18:11,760

[Applause]

3830

05:18:16,868 --> 05:18:15,040

uh i don't think if i look at it now

3831

05:18:18,230 --> 05:18:16,878

copy we that's what we figured we just

3832

05:18:22,530 --> 05:18:18,240

wanted to double check if you looked at

3833

05:18:22,540 --> 05:18:27,430

[Applause]

3834

05:18:33,430 --> 05:18:31,510

okay i've got the green pgt reddit

3835

05:18:35,270 --> 05:18:33,440

my

3836

05:18:36,708 --> 05:18:35,280

point arm and i'll put the pdt in the

3837

05:18:38,868 --> 05:18:36,718

center

3838

05:18:40,550 --> 05:18:38,878

cubby the pgt is on your swing arm could

3839

05:18:41,990 --> 05:18:40,560

i confirm i gave you this step before

3840

05:18:43,510 --> 05:18:42,000

but we did have that suit issue so

3841

05:18:44,550 --> 05:18:43,520

confirm that the square scoop from the

3842

05:18:50,230 --> 05:18:44,560

crew lock bag is on your mini

3843

05:18:55,270 --> 05:18:52,390

okay copy we are going to get you in

3844

05:18:57,030 --> 05:18:55,280

position at charlie one which is at

3845

05:19:02,830 --> 05:18:57,040

stanchion charlie

3846

05:19:02,840 --> 05:19:19,270

okay now

3847

05:19:24,230 --> 05:19:21,750

and shane another point of clarification

3848

05:19:29,670 --> 05:19:24,240

before the dcm went blank did you see

3849

05:19:32,868 --> 05:19:31,270

all i heard was the talent i never saw a

3850

05:19:37,750 --> 05:19:32,878

message

3851

05:19:55,030 --> 05:19:39,430

that's always wondering how you may stop

3852

05:19:58,230 --> 05:19:56,708

and just so you know we saw a spike in

3853

05:20:21,830 --> 05:19:58,240

the sublime p data that's why we're

3854

05:20:25,830 --> 05:20:23,350

and shane and tomorrow's big picture

3855

05:20:27,590 --> 05:20:25,840

we're just getting a final confirmation

3856

05:20:31,670 --> 05:20:27,600

that we are in a good config to release

3857

05:21:08,070 --> 05:20:34,230

copy thanks

3858

05:21:12,390 --> 05:21:10,470

and shane i have a go back for you

3859

05:21:13,990 --> 05:21:12,400

um when we got your issue we were

3860

05:21:16,150 --> 05:21:14,000

sending you to check the status of the

3861

05:21:17,590 --> 05:21:16,160

indicator on the base of the root beam

3862

05:21:19,270 --> 05:21:17,600

we've still not gotten that check and we

3863

05:21:21,590 --> 05:21:19,280

need it prior to releasing anyway so

3864

05:21:23,430 --> 05:21:21,600

while we're talking this down here

3865

05:21:25,670 --> 05:21:23,440

we're going to send you to check out the

3866

05:21:27,910 --> 05:21:25,680

base of the root beam

3867

05:21:29,990 --> 05:21:27,920

close to the r bolts see if you see that

3868

05:21:32,708 --> 05:21:30,000

indicator it should be just

3869

05:21:37,830 --> 05:21:32,718

further away from the blankets than the

3870

05:21:41,830 --> 05:21:39,910

now or the other end

3871

05:21:42,948 --> 05:21:41,840

of the air

3872

05:21:44,548 --> 05:21:42,958

we're going to have you do that right

3873

05:21:45,510 --> 05:21:44,558

now because the position that you're in

3874

05:21:56,788 --> 05:21:45,520

now

3875

05:22:07,670 --> 05:21:59,670

the journey just here is the indicators

3876
05:22:11,110 --> 05:22:09,590
yeah we want shane to head to a position

3877
05:22:12,310 --> 05:22:11,120
where he can see

3878
05:22:16,948 --> 05:22:12,320
the

3879
05:22:18,230 --> 05:22:16,958
eye rosa

3880
05:22:24,948 --> 05:22:18,240
he's going to be looking on the root

3881
05:22:24,958 --> 05:22:30,708
a firm

3882
05:22:35,910 --> 05:22:34,150
okay um i see the little

3883
05:22:37,910 --> 05:22:35,920
things sticking out the bottom on both

3884
05:22:40,548 --> 05:22:37,920
sides is that what we need to look for

3885
05:22:46,230 --> 05:22:42,150
yep that's exactly what we need to look

3886
05:22:50,150 --> 05:22:47,350
i don't know if you can see it in my

3887
05:22:50,160 --> 05:22:53,510
we're looking

3888
05:23:01,830 --> 05:22:55,990

the two silver things one on each

3889

05:23:43,350 --> 05:23:04,390

copychain

3890

05:23:46,470 --> 05:23:44,868

all right shane thanks again those are a

3891

05:23:48,868 --> 05:23:46,480

good check on those indicators we're

3892

05:23:51,190 --> 05:23:48,878

going to send you back to position uh at

3893

05:24:14,788 --> 05:23:51,200

the final bolt stanchion charlie volt

3894

05:24:14,798 --> 05:24:27,990

yes

3895

05:24:33,030 --> 05:24:29,830

this is mission control houston three

3896

05:24:35,190 --> 05:24:33,040

hours 45 minutes into the space walk

3897

05:24:37,110 --> 05:24:35,200

we should be hearing uh big picture

3898

05:24:39,430 --> 05:24:37,120

words momentarily from spacewalk

3899

05:24:41,920 --> 05:24:39,440

communicator jenny seidy about

3900

05:24:44,948 --> 05:24:41,930

proceeding with today's activities

3901

05:24:47,110 --> 05:24:44,958

[Music]

3902

05:24:50,070 --> 05:24:47,120

yep that's right

3903

05:24:51,670 --> 05:24:50,080

it looks like we're talking uh we're

3904

05:24:53,430 --> 05:24:51,680

talking about releasing our rosa but i

3905

05:25:16,150 --> 05:24:53,440

don't have the go yet

3906

05:25:19,670 --> 05:25:18,628

all right good news for me just in case

3907

05:25:22,070 --> 05:25:19,680

we do

3908

05:25:24,230 --> 05:25:22,080

we are go

3909

05:25:28,548 --> 05:25:24,240

for our rosa release i have next steps

3910

05:25:34,230 --> 05:25:31,590

uh pgt settings

3911

05:25:37,750 --> 05:25:34,240

this is mission control houston so uh to

3912

05:25:39,510 --> 05:25:37,760

recap where we've been for the past hour

3913

05:25:41,910 --> 05:25:39,520

about an hour ago there were two

3914

05:25:43,430 --> 05:25:41,920

separate uh

3915

05:25:45,110 --> 05:25:43,440

issues technically with shane

3916

05:25:48,470 --> 05:25:45,120

kimbrough's suit

3917

05:25:50,150 --> 05:25:48,480

one involved a loss of data to his uh

3918

05:25:53,830 --> 05:25:50,160

display unit

3919

05:25:56,708 --> 05:25:53,840

called a display control module or dcm

3920

05:25:58,628 --> 05:25:56,718

that provides any space walker with uh

3921

05:26:01,270 --> 05:25:58,638

insight into the condition of a suit

3922

05:26:03,590 --> 05:26:01,280

while out in the void of space

3923

05:26:06,868 --> 05:26:03,600

he was ordered to return to the quest

3924

05:26:09,030 --> 05:26:06,878

airlock he went back on an umbilical

3925

05:26:11,590 --> 05:26:09,040

did what is called a warm restart of

3926

05:26:15,270 --> 05:26:11,600

that display unit and it came back to

3927

05:26:18,230 --> 05:26:15,280

life the other issue uh has been uh

3928

05:26:20,788 --> 05:26:18,240

the evaluation of a momentary a minor

3929

05:26:23,670 --> 05:26:20,798

blip and a spike of pressure

3930

05:26:26,070 --> 05:26:23,680

for the uh sublimator unit in kimbrough

3931

05:26:27,510 --> 05:26:26,080

suit which provides cooling for the crew

3932

05:26:30,628 --> 05:26:27,520

member

3933

05:26:33,670 --> 05:26:30,638

that sublimator reading spiked ever so

3934

05:26:36,310 --> 05:26:33,680

slightly for just a moment and then

3935

05:26:37,430 --> 05:26:36,320

returned to normal

3936

05:26:40,830 --> 05:26:37,440

so

3937

05:26:43,750 --> 05:26:40,840

after a series of tests with that

3938

05:26:46,070 --> 05:26:43,760

equipment uh the suit is holding steady

3939

05:26:48,070 --> 05:26:46,080

and is apparently in good shape now and

3940

05:26:50,150 --> 05:26:48,080

flight director ron spencer has directed

3941

05:26:52,628 --> 05:26:50,160

that we proceed with the spacewalk as

3942

05:26:54,788 --> 05:26:52,638

planned kimbrough's suit in good shape

3943

05:26:58,310 --> 05:26:54,798

he was never in any danger during the

3944

05:27:00,230 --> 05:26:58,320

course of this diagnostic evaluation

3945

05:27:01,750 --> 05:27:00,240

while thomas pesquet as you see in the

3946

05:27:03,910 --> 05:27:01,760

right-hand side of your screen has been

3947

05:27:06,390 --> 05:27:03,920

hanging out in a foot restraint at the

3948

05:27:08,788 --> 05:27:06,400

end of the canadarn tomb robotic arm

3949

05:27:11,910 --> 05:27:08,798

waiting for the green light to proceed

3950

05:27:13,670 --> 05:27:11,920

with the extraction of the iss rollout

3951
05:27:15,760 --> 05:27:13,680
solar array from its flight support

3952
05:27:18,470 --> 05:27:15,770
equipment

3953
05:27:20,868 --> 05:27:18,480
[Music]

3954
05:27:22,708 --> 05:27:20,878
keep your divers down

3955
05:27:27,030 --> 05:27:22,718
copy ensure your heels are secure in the

3956
05:27:30,708 --> 05:27:27,990
the heel

3957
05:27:31,830 --> 05:27:30,718
secure ensure shrinking of an island is

3958
05:27:33,910 --> 05:27:31,840
still good

3959
05:27:36,310 --> 05:27:33,920
and uh

3960
05:27:39,110 --> 05:27:36,320
covering the wrist rings

3961
05:27:42,150 --> 05:27:39,120
copy maintain control of irosa well

3962
05:27:44,628 --> 05:27:42,160
shane releases the final fse bolt and

3963
05:27:46,310 --> 05:27:44,638

installs the scoop and repositions for

3964

05:27:54,410 --> 05:27:46,320

your upcoming gca

3965

05:27:54,420 --> 05:28:01,110

[Music]

3966

05:28:05,110 --> 05:28:03,510

how many turns we're looking for 24 to

3967

05:28:53,990 --> 05:28:05,120

26 the bolt will spring out when

3968

05:28:54,000 --> 05:29:08,390

there's 24 turns

3969

05:29:21,270 --> 05:29:10,230

we copy 24 turns and you're giving it a

3970

05:29:21,280 --> 05:29:29,460

okay

3971

05:29:29,470 --> 05:29:33,110

[Applause]

3972

05:29:40,708 --> 05:29:35,910

i copy charlie one is fully released was

3973

05:29:46,548 --> 05:29:42,390

27

3974

05:29:47,830 --> 05:29:46,558

and you're right you can install the

3975

05:29:49,590 --> 05:29:47,840

square scoop

3976

05:29:52,708 --> 05:29:49,600

make sure the handle is pointing venus

3977

05:29:58,628 --> 05:29:55,830

okay where's that come on your hand

3978

05:30:01,590 --> 05:29:58,638

no it's uh near your hand this guy right

3979

05:30:03,910 --> 05:30:01,600

here yeah you got it

3980

05:30:06,548 --> 05:30:03,920

it's a bit far away for you

3981

05:30:08,150 --> 05:30:06,558

yeah it is it's actually wide the other

3982

05:30:11,830 --> 05:30:08,160

one is on the

3983

05:30:28,280 --> 05:30:11,840

marsh far left this way on my phone

3984

05:30:28,290 --> 05:30:43,450

[Applause]

3985

05:30:43,460 --> 05:30:47,110

[Music]

3986

05:30:52,788 --> 05:30:50,150

do you have it yeah i have it

3987

05:31:01,210 --> 05:30:52,798

sorry about that

3988

05:31:01,220 --> 05:31:06,628

[Music]

3989

05:31:11,670 --> 05:31:09,990

and i copy that arosa is off of the fsb

3990

05:31:13,430 --> 05:31:11,680

shane i need you to remove your rat from

3991

05:31:15,910 --> 05:31:13,440

the scoop and get in a position to

3992

05:31:27,510 --> 05:31:15,920

monitor the clearance of the blanket to

3993

05:31:27,520 --> 05:31:43,190

here to get a better look

3994

05:31:47,990 --> 05:31:46,070

yeah i'm in a good position

3995

05:31:52,310 --> 05:31:48,000

and so mark and megan i think we're

3996

05:31:58,070 --> 05:31:55,430

copy go for the upper irosa back off

3997

05:32:00,868 --> 05:31:58,080

we're getting in the mode

3998

05:32:03,350 --> 05:32:00,878

tomorrow you look good right there yeah

3999

05:32:08,070 --> 05:32:03,360

you get about uh 10 centimeters clamps

4000

05:32:10,948 --> 05:32:09,510

how does it feel

4001
05:32:12,470 --> 05:32:10,958
oh

4002
05:32:15,430 --> 05:32:12,480
that's a big

4003
05:32:23,830 --> 05:32:15,440
big old are you but it's okay

4004
05:32:28,070 --> 05:32:25,190
okay we're getting ready to start this

4005
05:32:30,070 --> 05:32:28,080
manual maneuver it's not a gca and

4006
05:32:31,750 --> 05:32:30,080
i'll get a lot of check for your go

4007
05:32:46,708 --> 05:32:31,760
to our goal

4008
05:32:49,270 --> 05:32:47,830
you know it's hard to tell but the

4009
05:32:54,150 --> 05:32:49,280
motion has started

4010
05:32:56,788 --> 05:32:55,190
and again we're back in the

4011
05:32:59,670 --> 05:32:56,798
infrastructure so it's not a gca you can

4012
05:33:04,230 --> 05:33:01,190
understood shane we just want you to

4013
05:33:05,670 --> 05:33:04,240

keep an eye on the tower grapple fixture

4014

05:33:08,628 --> 05:33:05,680

and the clearance with the top of the

4015

05:33:14,548 --> 05:33:08,638

irosa blanket let uh toma know if he

4016

05:33:18,948 --> 05:33:16,948

looks really good right now

4017

05:33:20,868 --> 05:33:18,958

this is mission control houston we're

4018

05:33:22,548 --> 05:33:20,878

closing in on the four hour mark in

4019

05:33:24,948 --> 05:33:22,558

today's spacewalk

4020

05:33:27,350 --> 05:33:24,958

uh to bring you up to date uh the

4021

05:33:28,788 --> 05:33:27,360

two uh spacewalkers tomah pesquet and

4022

05:33:30,470 --> 05:33:28,798

shane kimbrough

4023

05:33:33,590 --> 05:33:30,480

put their suits on internal battery

4024

05:33:34,868 --> 05:33:33,600

power at 7 11 a.m central time 8 11 a.m

4025

05:33:38,548 --> 05:33:34,878

eastern time

4026
05:33:40,948 --> 05:33:38,558
to begin work to release and install

4027
05:33:44,390 --> 05:33:40,958
at the p6 trust the first

4028
05:33:46,470 --> 05:33:44,400
of the two irosa or iss rollout solar

4029
05:33:47,590 --> 05:33:46,480
arrays delivered to the station two

4030
05:33:51,830 --> 05:33:47,600
weeks ago

4031
05:33:53,990 --> 05:33:51,840
on the spacex cargo dragon vehicle

4032
05:33:55,670 --> 05:33:54,000
the most of the work throughout the day

4033
05:33:57,830 --> 05:33:55,680
has been

4034
05:33:59,590 --> 05:33:57,840
the use of a pistol grip tool to release

4035
05:34:02,628 --> 05:33:59,600
a series of bolts

4036
05:34:04,788 --> 05:34:02,638
that were essentially launch restraints

4037
05:34:08,390 --> 05:34:04,798
for the array the first of these two

4038
05:34:10,230 --> 05:34:08,400

arrays as they sat in the flight support

4039

05:34:11,990 --> 05:34:10,240

equipment that you see thomas pesquet

4040

05:34:14,628 --> 05:34:12,000

hovering over at the end of the

4041

05:34:17,910 --> 05:34:14,638

canadarm2 robotic arm

4042

05:34:20,230 --> 05:34:17,920

about an hour and 10 minutes ago

4043

05:34:22,150 --> 05:34:20,240

two issues were detected with shane

4044

05:34:23,350 --> 05:34:22,160

kimbrough's suit

4045

05:34:25,270 --> 05:34:23,360

not yet

4046

05:34:28,070 --> 05:34:25,280

fully explainable

4047

05:34:30,070 --> 05:34:28,080

one was the loss of data on his display

4048

05:34:33,430 --> 05:34:30,080

control module which is essentially a

4049

05:34:35,990 --> 05:34:33,440

data box on his spacesuit that provides

4050

05:34:37,590 --> 05:34:36,000

information about the condition of his

4051
05:34:39,750 --> 05:34:37,600
suit systems

4052
05:34:41,430 --> 05:34:39,760
the other issue was a

4053
05:34:44,390 --> 05:34:41,440
momentary blip

4054
05:34:46,230 --> 05:34:44,400
in uh sublimator pressure the sublimator

4055
05:34:48,868 --> 05:34:46,240
being the device in the suit that

4056
05:34:53,590 --> 05:34:48,878
provides cooling for the crew member

4057
05:34:55,350 --> 05:34:53,600
while outside in the void of space

4058
05:34:57,110 --> 05:34:55,360
kimbrough was directed by flight

4059
05:35:00,150 --> 05:34:57,120
controllers here in mission control to

4060
05:35:02,548 --> 05:35:00,160
return to the quest airlock he uh hooked

4061
05:35:03,670 --> 05:35:02,558
up an umbilical in the crew lock section

4062
05:35:05,750 --> 05:35:03,680
of quest

4063
05:35:08,548 --> 05:35:05,760

did a restart of his display control

4064

05:35:09,510 --> 05:35:08,558

module data package and it came back to

4065

05:35:11,990 --> 05:35:09,520

life

4066

05:35:15,030 --> 05:35:12,000

and he recharged his sublimator and that

4067

05:35:17,430 --> 05:35:15,040

seemed to stabilize uh the situation

4068

05:35:19,670 --> 05:35:17,440

with rock solid readings now being

4069

05:35:21,670 --> 05:35:19,680

received both on suit data and the

4070

05:35:24,948 --> 05:35:21,680

sublimator in particular

4071

05:35:27,350 --> 05:35:24,958

so flight director ron spencer directed

4072

05:35:28,390 --> 05:35:27,360

kim bro to go back outside rejoin

4073

05:35:31,190 --> 05:35:28,400

pesquet

4074

05:35:34,150 --> 05:35:31,200

at the irosa array flight support

4075

05:35:36,868 --> 05:35:34,160

equipment and we are now standing by for

4076

05:35:39,270 --> 05:35:36,878

the release of that irosa array from the

4077

05:35:42,070 --> 05:35:39,280

flight support equipment where pesquet

4078

05:35:43,110 --> 05:35:42,080

then will transfer manually the array

4079

05:35:43,910 --> 05:35:43,120

from

4080

05:35:49,350 --> 05:35:43,920

the

4081

05:35:51,030 --> 05:35:49,360

left section

4082

05:35:53,430 --> 05:35:51,040

of the truss of the

4083

05:36:01,110 --> 05:35:53,440

international space station to begin its

4084

05:36:04,310 --> 05:36:02,548

we're getting answered questions it's

4085

05:36:05,990 --> 05:36:04,320

clear if it's all

4086

05:36:07,430 --> 05:36:06,000

okay copy and i'm back with you after a

4087

05:36:09,190 --> 05:36:07,440

short hand over there

4088

05:36:10,788 --> 05:36:09,200

um

4089

05:36:12,150 --> 05:36:10,798

that's a good report clear of the tower

4090

05:36:13,510 --> 05:36:12,160

we're going to push you to the next

4091

05:36:15,510 --> 05:36:13,520

steps shane

4092

05:36:24,310 --> 05:36:15,520

um we're going to get a glove and half

4093

05:36:28,628 --> 05:36:26,230

hey left glove good right glove just a

4094

05:36:31,270 --> 05:36:28,638

few of those black smudges on there that

4095

05:36:34,070 --> 05:36:31,280

no damage to the glove

4096

05:36:34,080 --> 05:36:37,270

copy

4097

05:36:41,670 --> 05:36:39,190

and so you know shane we're monitoring

4098

05:36:43,190 --> 05:36:41,680

your suit data and everything looks as

4099

05:36:44,628 --> 05:36:43,200

expected

4100

05:36:46,390 --> 05:36:44,638

so with that we are going to have you

4101
05:36:49,110 --> 05:36:46,400
retrieve the socket caddy from the crew

4102
05:36:54,788 --> 05:36:52,708
and you will be removing the 5 8 12 inch

4103
05:36:57,090 --> 05:36:54,798
socket from your pgt installing it back

4104
05:37:16,310 --> 05:36:57,100
in the caddy

4105
05:38:15,030 --> 05:37:18,310
hey come on have a good ride

4106
05:38:19,030 --> 05:38:17,910
and shane you'll be installing the 5 8 2

4107
05:38:55,330 --> 05:38:19,040
inch socket

4108
05:38:55,340 --> 05:39:12,390
[Applause]

4109
05:39:15,670 --> 05:39:14,230
tomorrow we are setting up for a couple

4110
05:39:28,868 --> 05:39:15,680
journal cases

4111
05:39:33,590 --> 05:39:32,310
pretty good full test on the 12 inch

4112
05:39:35,270 --> 05:39:33,600
socket

4113
05:39:53,750 --> 05:39:35,280

copy good pull test 12 inch on the

4114

05:39:53,760 --> 05:39:57,470

well

4115

05:39:57,480 --> 05:40:23,190

[Applause]

4116

05:40:27,270 --> 05:40:25,430

and market you could keep me posted on

4117

05:40:28,948 --> 05:40:27,280

the motion games how'd you feel actually

4118

05:40:31,030 --> 05:40:28,958

when i'm moving it when i'm not in the

4119

05:40:32,708 --> 05:40:31,040

dollar tree with those right

4120

05:40:34,788 --> 05:40:32,718

completely understand that's a timely

4121

05:40:37,270 --> 05:40:34,798

call where this is our first of two

4122

05:40:40,310 --> 05:40:37,280

sorry no cases this one will take two

4123

05:40:54,948 --> 05:40:40,320

minutes starting motion in course

4124

05:41:00,000 --> 05:40:57,030

and that's a good motion i can tell it's

4125

05:41:13,430 --> 05:41:02,548

[Applause]

4126
05:41:13,440 --> 05:41:22,290
um

4127
05:41:22,300 --> 05:41:32,788
[Applause]

4128
05:41:37,510 --> 05:41:35,910
affixed to the end of the canadarm2

4129
05:41:40,788 --> 05:41:37,520
robotic arm

4130
05:41:43,430 --> 05:41:40,798
tomorrow pesquet holding the 750 pound

4131
05:41:45,910 --> 05:41:43,440
irosa solar array the first

4132
05:41:47,990 --> 05:41:45,920
of six such

4133
05:41:50,150 --> 05:41:48,000
augmenting arrays that will be installed

4134
05:41:52,390 --> 05:41:50,160
on the international space station

4135
05:41:55,030 --> 05:41:52,400
to enhance the power capability for the

4136
05:41:58,310 --> 05:41:55,040
complex for the rest of its lifetime

4137
05:41:59,510 --> 05:41:58,320
he will be driven over to the p6 truss

4138
05:42:02,150 --> 05:41:59,520

worksite

4139

05:42:04,948 --> 05:42:02,160

uh megan mcarthur is at the controls uh

4140

05:42:07,270 --> 05:42:04,958

of the robotic arm being assisted by

4141

05:42:09,830 --> 05:42:07,280

mark vandehei from a robotics

4142

05:42:11,670 --> 05:42:09,840

workstation inside the destiny

4143

05:42:20,150 --> 05:42:11,680

laboratory of the international space

4144

05:42:26,708 --> 05:42:23,750

have some rpgt get pull test

4145

05:42:28,788 --> 05:42:26,718

copy you can stow the green ptt on your

4146

05:42:34,868 --> 05:42:28,798

swing arm and then we will have you

4147

05:42:34,878 --> 05:42:48,788

okay

4148

05:42:48,798 --> 05:43:09,990

uh

4149

05:43:24,210 --> 05:43:12,948

set up that second journal cast along

4150

05:43:24,220 --> 05:43:28,788

[Applause]

4151
05:43:31,990 --> 05:43:30,070
tomorrow we're starting the second of

4152
05:43:33,270 --> 05:43:32,000
two joint I cases in course this will

4153
05:43:37,910 --> 05:43:33,280
take three minutes

4154
05:43:37,920 --> 05:43:50,628
let's get started

4155
05:43:50,638 --> 05:44:10,470
wow

4156
05:44:10,480 --> 05:44:20,080
foreign

4157
05:44:20,090 --> 05:44:28,360
[Music]

4158
05:44:28,370 --> 05:44:34,070
[Applause]

4159
05:44:39,590 --> 05:44:36,150
yeah i'm off the frc going to get some

4160
05:44:42,948 --> 05:44:41,350
hey firm shane when you pick up that

4161
05:44:45,270 --> 05:44:42,958
green hook make sure you attach it to a

4162
05:44:53,110 --> 05:44:45,280
waste tether deeping extender or your

4163
05:44:53,120 --> 05:45:13,190

okay

4164

05:45:13,200 --> 05:45:36,390

so

4165

05:45:40,230 --> 05:45:38,230

okay you got the green hook on my d-ring

4166

05:45:42,230 --> 05:45:40,240

lefty-ring extender

4167

05:45:48,948 --> 05:45:42,240

copy and check the wheel is unlocked and

4168

05:45:48,958 --> 05:45:54,070

checking

4169

05:45:58,150 --> 05:45:56,390

it was unlocked and i'm heading out for

4170

05:46:00,548 --> 05:45:58,160

it

4171

05:46:04,470 --> 05:46:00,558

copy you're looking for

4172

05:46:07,910 --> 05:46:04,480

the first handrail outboard of p5 so

4173

05:46:24,150 --> 05:46:07,920

that's p6 handrail 5309 and we're going

4174

05:46:28,628 --> 05:46:26,470

and shane i'll take a gauntlet check as

4175

05:46:31,860 --> 05:46:28,638

well

4176

05:46:33,350 --> 05:46:31,870

station houston uh for the evm

4177

05:46:35,590 --> 05:46:33,360

[Music]

4178

05:46:36,788 --> 05:46:35,600

for evie and ivy crew just a heads up uh

4179

05:46:38,230 --> 05:46:36,798

tomorrow you're likely going to be in

4180

05:46:40,070 --> 05:46:38,240

position we'll need to stand by on the

4181

05:46:41,510 --> 05:46:40,080

manual maneuver until shane is ready for

4182

05:46:54,708 --> 05:46:41,520

the end off so we'll might be a little

4183

05:46:54,718 --> 05:47:42,490

and we copy the gauntlets checked shane

4184

05:47:42,500 --> 05:47:58,628

[Music]

4185

05:48:03,350 --> 05:48:00,708

okay i'm at 5309 that's where i'm going

4186

05:48:05,430 --> 05:48:03,360

to put your green hook down

4187

05:48:10,390 --> 05:48:05,440

good words and check the reel is

4188

05:48:31,590 --> 05:48:25,750

okay

4189

05:48:33,750 --> 05:48:31,600

wheels online

4190

05:49:30,708 --> 05:48:33,760

copy and you can attach your green hook

4191

05:49:36,470 --> 05:49:34,788

okay i'm on 53-12 my greenhouse

4192

05:49:44,868 --> 05:49:36,480

copy and we'll check your wheel is

4193

05:49:49,990 --> 05:49:48,070

you're talking green not real

4194

05:49:52,070 --> 05:49:50,000

hey firm you're going to attach your

4195

05:49:57,110 --> 05:49:52,080

green hook 5312 and check the wheel is

4196

05:49:57,120 --> 05:50:02,390

and both

4197

05:50:02,400 --> 05:50:06,548

copy

4198

05:50:10,470 --> 05:50:09,030

i have a big picture update for both of

4199

05:50:12,150 --> 05:50:10,480

you

4200

05:50:14,390 --> 05:50:12,160

so at this point we're working to get

4201
05:50:16,628 --> 05:50:14,400
our rosa installed on the mod kit

4202
05:50:18,628 --> 05:50:16,638
and unfolded we believe in the next

4203
05:50:20,708 --> 05:50:18,638
eclipse we will have time for our

4204
05:50:30,708 --> 05:50:20,718
connections and then we'll assess

4205
05:50:34,470 --> 05:50:32,788
no problem and shane as written in the

4206
05:50:36,708 --> 05:50:34,480
procedure your next step would be to do

4207
05:50:38,788 --> 05:50:36,718
some work site setup

4208
05:50:41,590 --> 05:50:38,798
including dropping your pgt on the mod

4209
05:50:44,230 --> 05:50:41,600
kit but considering that the arm is

4210
05:50:46,548 --> 05:50:44,240
already in position we're going to skip

4211
05:50:49,670 --> 05:50:46,558
forward a couple of steps and have you

4212
05:50:57,270 --> 05:50:49,680
translate just outboard of your apfr in

4213
05:51:00,628 --> 05:50:58,788

essentially we're just skipping those

4214

05:51:33,190 --> 05:51:00,638

there now but let me get in a better

4215

05:51:33,200 --> 05:51:50,788

please

4216

05:51:50,798 --> 05:51:54,070

oh

4217

05:51:59,190 --> 05:51:55,430

if you go

4218

05:52:34,788 --> 05:52:01,510

look around your psr

4219

05:52:34,798 --> 05:52:38,628

up

4220

05:52:38,638 --> 05:52:52,788

copy

4221

05:53:44,788 --> 05:52:53,830

all right i'm just gonna take a little

4222

05:53:44,798 --> 05:53:48,708

just

4223

05:53:53,990 --> 05:53:50,948

your next step is to put in a fair lead

4224

05:53:56,868 --> 05:53:54,000

in your safety tether

4225

05:53:59,670 --> 05:53:56,878

just outboard of your apfr we're looking

4226
05:54:25,190 --> 05:53:59,680
for handrail 5345 which is on the mmod

4227
05:54:33,750 --> 05:54:27,270
all right can i guess i'll use a for

4228
05:54:33,760 --> 05:54:45,270
your poor man

4229
05:54:49,110 --> 05:54:47,190
yeah shane we're thinking this is just a

4230
05:54:55,350 --> 05:54:49,120
poor man to deconflict your safety each

4231
05:55:44,580 --> 05:54:57,350
just so you guys know 15 seconds okay

4232
05:55:44,590 --> 05:55:50,230
[Applause]

4233
05:55:55,990 --> 05:55:53,270
back with you after handover

4234
05:55:58,470 --> 05:55:56,000
next step for you shane provided that

4235
05:55:59,590 --> 05:55:58,480
fairly dissident is to verify role in

4236
05:56:08,708 --> 05:55:59,600
your settings let me know when you're

4237
05:56:15,270 --> 05:56:10,788
okay i'm ready

4238
05:56:51,830 --> 05:56:17,190

okay

4239

05:56:55,750 --> 05:56:53,590

this is mission control houston four

4240

05:56:58,230 --> 05:56:55,760

hours seventeen minutes into the

4241

05:57:00,070 --> 05:56:58,240

spacewalk today by tomah pesquet and

4242

05:57:02,470 --> 05:57:00,080

shane kimbrough

4243

05:57:04,310 --> 05:57:02,480

as we regain our downlink television

4244

05:57:05,670 --> 05:57:04,320

capability from the international space

4245

05:57:08,548 --> 05:57:05,680

station

4246

05:57:10,948 --> 05:57:08,558

pesquet has finished his journey at the

4247

05:57:12,548 --> 05:57:10,958

end of the canadarm2 robotic arm holding

4248

05:57:14,470 --> 05:57:12,558

the irosa

4249

05:57:16,470 --> 05:57:14,480

solar array

4250

05:57:18,310 --> 05:57:16,480

shane kimbrough is uh

4251

05:57:21,030 --> 05:57:18,320

putting his feet in a portable foot

4252

05:57:23,830 --> 05:57:21,040

restraint on the p6 truss

4253

05:57:25,910 --> 05:57:23,840

ready to receive a handoff of the array

4254

05:57:28,470 --> 05:57:25,920

from pesquet

4255

05:57:30,788 --> 05:57:28,480

while pesquet then will dismount if you

4256

05:57:33,350 --> 05:57:30,798

will from the end of the robotic arm to

4257

05:57:35,830 --> 05:57:33,360

put himself in a position to assist

4258

05:57:38,868 --> 05:57:35,840

kimbrough with the installation of the

4259

05:57:41,110 --> 05:57:38,878

irosa array on the so-called mod kit

4260

05:57:43,430 --> 05:57:41,120

which is a bracket

4261

05:57:45,110 --> 05:57:43,440

upon which the array will be mounted and

4262

05:57:47,270 --> 05:57:45,120

bolted into place

4263

05:58:06,290 --> 05:57:47,280

that mod kit was installed at the base

4264

05:58:12,708 --> 05:58:09,270

[Applause]

4265

05:58:12,718 --> 05:58:15,430

tucked in

4266

05:58:20,868 --> 05:58:18,150

copy you are in the apr and the ingress

4267

05:58:22,230 --> 05:58:20,878

aid is stowed i have some other checks

4268

05:58:23,590 --> 05:58:22,240

for you

4269

05:58:27,430 --> 05:58:23,600

make sure your tools and tethers are

4270

05:58:33,110 --> 05:58:31,030

okay tools and tethers are clear

4271

05:58:35,190 --> 05:58:33,120

we have about 12 minutes until

4272

05:58:40,788 --> 05:58:35,200

insulation so make sure your visor glove

4273

05:58:40,798 --> 05:58:45,510

okay i'll put my visor down

4274

05:58:45,520 --> 05:58:48,788

and everything else i'll keep

4275

05:59:05,350 --> 05:58:50,628

copy ensure your heels are secure in the

4276
05:59:08,868 --> 05:59:07,190
no further action on your left gauntlet

4277
05:59:11,190 --> 05:59:08,878
shane we're satisfied there i think

4278
05:59:14,788 --> 05:59:11,200
those are good checks so you can work

4279
05:59:20,150 --> 05:59:14,798
with ssrms to move iroza in proximity

4280
05:59:25,270 --> 05:59:22,788
mark i'm ready for the handoff position

4281
05:59:27,590 --> 05:59:25,280
copy this is a gc820 published it'll be

4282
05:59:29,750 --> 05:59:27,600
1.7 meters

4283
05:59:32,788 --> 05:59:29,760
body in for tomorrow and shane we don't

4284
05:59:35,350 --> 05:59:32,798
have any good clearance views for the

4285
05:59:39,270 --> 05:59:35,360
irosa itself so count on you for that

4286
05:59:39,280 --> 05:59:53,270
i'm ready for the gta rga

4287
06:00:02,628 --> 05:59:55,430
sorry motion

4288
06:00:02,638 --> 06:00:10,628

copy

4289

06:00:15,910 --> 06:00:12,948

with mark vanderheim providing visual

4290

06:00:19,270 --> 06:00:15,920

cues megan macarthur is maneuvering the

4291

06:00:21,590 --> 06:00:19,280

canadarm2 robotic arm very slowly very

4292

06:00:24,150 --> 06:00:21,600

surely to put pesquet in the right

4293

06:00:27,110 --> 06:00:24,160

orientation to hand off the irosa roll

4294

06:00:29,830 --> 06:00:27,120

up solar array over to shane kimbrough

4295

06:00:32,150 --> 06:00:29,840

kimbrough suit is performing normally

4296

06:00:35,750 --> 06:00:32,160

following a brief interlude in the

4297

06:00:38,230 --> 06:00:35,760

spacewalk as we analyzed and dealt with

4298

06:00:40,310 --> 06:00:38,240

two separate uh technical issues

4299

06:00:41,830 --> 06:00:40,320

kimbrough was never in any trouble never

4300

06:00:45,350 --> 06:00:41,840

in any danger

4301
06:00:46,948 --> 06:00:45,360
his display control module unit uh lost

4302
06:00:49,030 --> 06:00:46,958
uh data

4303
06:00:51,510 --> 06:00:49,040
he was ordered to go back into the quest

4304
06:00:54,470 --> 06:00:51,520
airlock by flight controllers uh to get

4305
06:00:57,350 --> 06:00:54,480
on an umbilical to restart the control

4306
06:00:59,590 --> 06:00:57,360
box that provides suit data information

4307
06:01:01,750 --> 06:00:59,600
to him while he's outside in the void of

4308
06:01:04,310 --> 06:01:01,760
space that all worked fine

4309
06:01:07,270 --> 06:01:04,320
and uh flight controllers then evaluated

4310
06:01:09,350 --> 06:01:07,280
a temporarily a temporary blip

4311
06:01:12,150 --> 06:01:09,360
in sublimator pressure the sublimator

4312
06:01:14,390 --> 06:01:12,160
being the unit that cools the spacesuit

4313
06:01:38,150 --> 06:01:14,400

for a spacewalking astronaut

4314

06:01:38,160 --> 06:01:41,110

what are you thinking about

4315

06:01:41,120 --> 06:01:42,070

don't think it's gonna be rollins

4316

06:01:45,670 --> 06:01:43,990

but nothing else yeah i'm just thinking

4317

06:01:47,110 --> 06:01:45,680

which way you wanna go oh it doesn't

4318

06:02:56,788 --> 06:01:47,120

matter for you

4319

06:02:56,798 --> 06:03:01,830

five zero centimeters

4320

06:03:08,868 --> 06:03:03,350

a little bit towards you because i'm

4321

06:03:11,910 --> 06:03:10,320

there i have a hand on it now

4322

06:03:13,830 --> 06:03:11,920

[Applause]

4323

06:03:33,270 --> 06:03:13,840

can we put a red one

4324

06:03:37,190 --> 06:03:34,948

i think now yeah rosa's not moving it's

4325

06:03:39,430 --> 06:03:37,200

just me going back in the arm

4326

06:03:41,110 --> 06:03:39,440

maybe we could stop here

4327

06:03:43,430 --> 06:03:41,120

so up there mark

4328

06:03:44,868 --> 06:03:43,440

okay we are stopping motion

4329

06:03:49,190 --> 06:03:44,878

happy

4330

06:03:50,230 --> 06:03:49,200

that position um yeah i'll be able to

4331

06:03:52,230 --> 06:03:50,240

move it a little bit obviously we're

4332

06:03:54,948 --> 06:03:52,240

going to rotate it right yeah

4333

06:03:57,110 --> 06:03:54,958

um do you want to keep your red on and

4334

06:04:00,830 --> 06:03:57,120

uh while we're rotating it that can keep

4335

06:04:06,310 --> 06:04:02,948

yourself all right is that a good

4336

06:04:09,430 --> 06:04:06,320

position can we call this gca complete

4337

06:04:14,310 --> 06:04:12,708

ground copy is gca complete

4338

06:04:15,520 --> 06:04:14,320

a warning for both of you don't put your

4339

06:04:15,620 --> 06:04:15,530

fingers

4340

06:04:21,670 --> 06:04:15,630

[Music]

4341

06:04:25,590 --> 06:04:23,110

i need to read you guys a warning not to

4342

06:04:27,510 --> 06:04:25,600

put your fingers in the rosa pin slots

4343

06:04:29,270 --> 06:04:27,520

uh other than that you are going to

4344

06:04:30,548 --> 06:04:29,280

perform your ret swap and you guys are

4345

06:04:33,750 --> 06:04:30,558

exactly right you are going to be

4346

06:04:39,830 --> 06:04:33,760

reorienting irosa to blankets heads up

4347

06:04:47,920 --> 06:04:41,350

i'm going to remove my red chain you

4348

06:04:47,930 --> 06:04:56,868

[Music]

4349

06:04:56,878 --> 06:05:07,430

oh i'm removing my red standby okay

4350

06:05:11,670 --> 06:05:09,750

now my wretch is gone

4351
06:05:35,430 --> 06:05:11,680
my left you're right really slowly you

4352
06:05:35,440 --> 06:05:41,350
okay

4353
06:05:41,360 --> 06:05:57,030
um

4354
06:06:01,270 --> 06:05:58,788
yeah i have it tomorrow do you have it

4355
06:06:03,830 --> 06:06:01,280
you know that orientation for you yes

4356
06:06:12,410 --> 06:06:03,840
okay you have control head control

4357
06:06:12,420 --> 06:06:20,948
[Music]

4358
06:06:29,750 --> 06:06:21,990
sound like the ground had something for

4359
06:06:33,750 --> 06:06:31,430
all right nothing hurt we're gonna

4360
06:06:52,230 --> 06:06:33,760
we got copy to go for the post handoff

4361
06:06:52,240 --> 06:06:59,350
start motion not as easy

4362
06:06:59,360 --> 06:07:04,948
we'll see you in a minute tomorrow

4363
06:07:04,958 --> 06:07:50,230

feel good motion

4364

06:07:50,240 --> 06:08:25,830

steven

4365

06:08:28,868 --> 06:08:27,270

so while we are setting up a general

4366

06:09:53,750 --> 06:08:28,878

test

4367

06:09:56,788 --> 06:09:54,948

all right tomorrow this is one

4368

06:10:09,510 --> 06:09:56,798

journalcast in course it'll take three

4369

06:10:14,628 --> 06:10:11,830

this is mission control houston 4 hours

4370

06:10:15,750 --> 06:10:14,638

31 minutes into today's spacewalk shane

4371

06:10:18,230 --> 06:10:15,760

kimbrough

4372

06:10:22,948 --> 06:10:18,240

now has possession of the first

4373

06:10:26,150 --> 06:10:23,750

he

4374

06:10:27,750 --> 06:10:26,160

is uh going to hang on to that until

4375

06:10:30,390 --> 06:10:27,760

tomah pesquet

4376

06:10:32,788 --> 06:10:30,400

has uh left the foot restraint at the

4377

06:10:35,270 --> 06:10:32,798

end of the station's robotic arm pesquet

4378

06:10:37,190 --> 06:10:35,280

hailed the array over from

4379

06:10:38,708 --> 06:10:37,200

its flight support equipment structure

4380

06:10:41,030 --> 06:10:38,718

on the truss of the station over to the

4381

06:10:43,270 --> 06:10:41,040

p6 work site

4382

06:10:45,350 --> 06:10:43,280

and now the two crew members will begin

4383

06:10:47,430 --> 06:10:45,360

the installation of this array

4384

06:10:49,670 --> 06:10:47,440

to the p6

4385

06:10:50,788 --> 06:10:49,680

2b channel mast canister mounting

4386

06:10:54,708 --> 06:10:50,798

bracket

4387

06:10:57,430 --> 06:10:54,718

or a mod kit as it is called

4388

06:10:59,190 --> 06:10:57,440

that was installed uh to accommodate

4389

06:11:00,310 --> 06:10:59,200

this first irosa

4390

06:11:02,628 --> 06:11:00,320

array

4391

06:11:05,190 --> 06:11:02,638

on a previous spacewalk the second of

4392

06:11:07,750 --> 06:11:05,200

these two eva uh these two uh irosa

4393

06:11:11,110 --> 06:11:07,760

arrays for the 4b channel on the p6

4394

06:11:13,910 --> 06:11:11,120

truss is scheduled uh to be

4395

06:11:15,430 --> 06:11:13,920

attended to by pesquet and kimbrough

4396

06:12:16,548 --> 06:11:15,440

during the next spacewalk that is

4397

06:12:21,590 --> 06:12:17,990

well we just finished the journalcaster

4398

06:12:21,600 --> 06:12:27,670

this one eventually will be a gta

4399

06:12:27,680 --> 06:13:01,030

i'm ready when you're ready

4400

06:13:05,430 --> 06:13:03,270

all right tomorrow on your go we will do

4401
06:13:08,150 --> 06:13:05,440
the gca to the published egress manual

4402
06:13:09,910 --> 06:13:08,160
maneuver position which is four meters

4403
06:13:12,150 --> 06:13:09,920
body in

4404
06:13:14,470 --> 06:13:12,160
for four meters

4405
06:13:26,150 --> 06:13:14,480
okay we'll call that start gca

4406
06:13:26,160 --> 06:13:57,910
second pusher

4407
06:14:01,270 --> 06:13:59,750
and tomorrow was that good motion

4408
06:14:08,548 --> 06:14:01,280
yeah that was good

4409
06:14:12,390 --> 06:14:10,628
a good view of european space agency

4410
06:14:14,310 --> 06:14:12,400
astronaut thomas pesquet being

4411
06:14:15,670 --> 06:14:14,320
maneuvered at the end of the canadarm2

4412
06:14:17,590 --> 06:14:15,680
robotic arm

4413
06:14:19,270 --> 06:14:17,600

by megan mcarthur with assistance from

4414

06:14:20,708 --> 06:14:19,280

mark vande high at the robotic

4415

06:14:23,430 --> 06:14:20,718

workstation

4416

06:14:24,708 --> 06:14:23,440

inside the international space station

4417

06:14:27,030 --> 06:14:24,718

to an area

4418

06:14:28,628 --> 06:14:27,040

that will enable him to leave the

4419

06:14:31,270 --> 06:14:28,638

portable foot restraint at the end of

4420

06:14:34,230 --> 06:14:31,280

the arm to assist shane kimbrough with

4421

06:14:36,548 --> 06:14:34,240

the start of the actual mounting of the

4422

06:14:37,830 --> 06:14:36,558

irosa array on the

4423

06:14:38,788 --> 06:14:37,840

p6

4424

06:14:56,948 --> 06:14:38,798

truss

4425

06:14:56,958 --> 06:15:05,190

thank you

4426
06:15:05,200 --> 06:15:18,230
looks like you're almost there

4427
06:15:18,240 --> 06:15:38,548
one meter

4428
06:15:38,558 --> 06:15:52,708
five zero centimeters

4429
06:16:23,740 --> 06:15:53,990
25

4430
06:16:23,750 --> 06:16:36,708
[Music]

4431
06:16:41,350 --> 06:16:38,948
you're ready for the procedure procedure

4432
06:16:45,990 --> 06:16:41,360
says srs breaks down go for egress and

4433
06:16:52,390 --> 06:16:48,070
understand brakes are on you can egress

4434
06:16:52,400 --> 06:17:03,270
okay

4435
06:17:06,868 --> 06:17:05,510
and i've regressed the hfr i have a

4436
06:17:08,548 --> 06:17:06,878
local

4437
06:17:10,670 --> 06:17:08,558
trust

4438
06:17:21,030 --> 06:17:10,680

copy place a waste tether on handrail

4439

06:17:35,500 --> 06:17:22,948

that's used by long way step i'm not

4440

06:17:35,510 --> 06:17:45,030

[Music]

4441

06:17:49,750 --> 06:17:47,160

our next step is

4442

06:17:51,190 --> 06:17:49,760

[Music]

4443

06:17:53,110 --> 06:17:51,200

copy so that's your

4444

06:17:54,868 --> 06:17:53,120

new load path to structure now we need

4445

06:17:56,390 --> 06:17:54,878

to build back your tether pack you will

4446

06:17:59,350 --> 06:17:56,400

need to reach your yellow hook from the

4447

06:18:03,830 --> 06:17:59,360

ssrms lee you might need to gca to reach

4448

06:18:07,910 --> 06:18:06,230

it would actually be nice to get

4449

06:18:09,350 --> 06:18:07,920

two centimeters or two dozens of

4450

06:18:11,270 --> 06:18:09,360

centimeters

4451
06:18:12,390 --> 06:18:11,280
station venus

4452
06:18:29,270 --> 06:18:12,400
let's say

4453
06:18:35,830 --> 06:18:33,590
the hd camera on toma pesquez space suit

4454
06:18:37,670 --> 06:18:35,840
looking down at the pacific ocean as the

4455
06:18:39,510 --> 06:18:37,680
international space station has entered

4456
06:18:42,788 --> 06:18:39,520
an orbital sunrise

4457
06:18:45,270 --> 06:18:42,798
at an altitude of 258 statute miles

4458
06:19:01,700 --> 06:18:45,280
now four hours forty minutes into

4459
06:19:01,710 --> 06:19:09,350
[Music]

4460
06:19:09,360 --> 06:19:25,190
up on the hand controller

4461
06:19:29,590 --> 06:19:27,030
20 centimeters to go

4462
06:19:31,990 --> 06:19:29,600
make sure you might even pass 40 items

4463
06:19:33,110 --> 06:19:32,000

i'll tell you about continue

4464

06:20:04,708 --> 06:19:33,120

and that's what you asked for you want

4465

06:20:08,628 --> 06:20:06,390

zero centimeters continuing let's make

4466

06:20:32,070 --> 06:20:08,638

it three zero happy three zero

4467

06:20:36,788 --> 06:20:35,030

nice and you can stop motion within it

4468

06:20:38,548 --> 06:20:36,798

as actually could give me a 20

4469

06:20:39,430 --> 06:20:38,558

centimeters station off that would be

4470

06:20:43,590 --> 06:20:39,440

great

4471

06:20:49,030 --> 06:20:47,270

copy 20 centimeters station aft

4472

06:20:55,830 --> 06:20:49,040

right back

4473

06:21:13,190 --> 06:20:58,150

which is why we're doing 20 centimeters

4474

06:21:13,200 --> 06:21:30,708

i'm not sure i see motion

4475

06:21:35,510 --> 06:21:32,390

oh that's a good motion

4476
06:21:35,520 --> 06:21:42,150
10-10 years to go

4477
06:21:42,160 --> 06:21:57,990
sorry say it again

4478
06:21:58,000 --> 06:22:06,948
yellow hook collect

4479
06:22:10,548 --> 06:22:08,628
you'll be retrieving your yellow hook

4480
06:22:12,150 --> 06:22:10,558
you see it controls very fast

4481
06:22:14,628 --> 06:22:12,160
i copy brakes on you'll retrieve your

4482
06:22:16,708 --> 06:22:14,638
yellow hook and attach it to your green

4483
06:22:50,230 --> 06:22:16,718
tether wheel

4484
06:22:53,750 --> 06:22:52,070
okay my yellow hook

4485
06:22:56,548 --> 06:22:53,760
pulls and locked

4486
06:22:58,070 --> 06:22:56,558
a green fifth for the reel which is

4487
06:22:59,830 --> 06:22:58,080
unlocked

4488
06:23:01,270 --> 06:22:59,840

and my red

4489

06:23:03,430 --> 06:23:01,280

is unlocked

4490

06:23:05,830 --> 06:23:03,440

and the red hood goes through

4491

06:23:06,788 --> 06:23:05,840

my left viewing extender and it's

4492

06:23:09,110 --> 06:23:06,798

locked

4493

06:23:11,270 --> 06:23:09,120

black on black

4494

06:23:12,948 --> 06:23:11,280

copy that is a good tether config you

4495

06:23:14,868 --> 06:23:12,958

can sew the ingress 8 and fold it to the

4496

06:23:16,468 --> 06:23:14,878

boot plate and then we'll have you read

4497

06:23:27,910 --> 06:23:16,478

to the apfr

4498

06:23:27,920 --> 06:24:41,670

work

4499

06:24:41,680 --> 06:24:46,468

okay i've already okay

4500

06:24:46,478 --> 06:24:53,110

happy tomorrow

4501
06:25:16,070 --> 06:24:55,190
we're looking to reinstall that apfr

4502
06:25:20,948 --> 06:25:17,430
just want to check in with you how are

4503
06:25:20,958 --> 06:25:25,910
well thanks jimmy

4504
06:25:41,430 --> 06:25:27,590
here's magic

4505
06:25:41,440 --> 06:26:07,430
okay copy the sticky collar timma

4506
06:26:07,440 --> 06:26:53,510
okay i got it

4507
06:26:59,430 --> 06:26:55,990
if you're um r6

4508
06:27:02,230 --> 06:26:59,440
have a good tool and tuck test

4509
06:27:04,788 --> 06:27:02,240
you can install

4510
06:27:07,030 --> 06:27:04,798
copy tomos retrieve your red check your

4511
06:28:14,310 --> 06:27:07,040
tools and tethers are clear around 30

4512
06:28:14,320 --> 06:28:20,548
okay

4513
06:28:24,230 --> 06:28:22,868

back with you after hand over

4514

06:28:26,150 --> 06:28:24,240

the tools

4515

06:28:28,390 --> 06:28:26,160

are clear

4516

06:28:28,650 --> 06:28:28,400

and uh after the clock fixed you i go

4517

06:28:30,230 --> 06:28:28,660

for the

4518

06:28:31,590 --> 06:28:30,240

[Music]

4519

06:28:33,510 --> 06:28:31,600

backup

4520

06:28:35,590 --> 06:28:33,520

for megan

4521

06:28:39,110 --> 06:28:35,600

copy megan is doing that maneuver to the

4522

06:28:39,120 --> 06:28:42,468

all right over at your stream

4523

06:28:42,478 --> 06:28:46,948

all right i'm ready

4524

06:28:46,958 --> 06:28:52,070

break break on motion standby

4525

06:28:56,310 --> 06:28:54,708

happy standby

4526

06:28:57,990 --> 06:28:56,320

can we just get a double check on the

4527

06:28:59,830 --> 06:28:58,000

apfr settings we may have missed them

4528

06:29:01,670 --> 06:28:59,840

and we just want to verify that we're as

4529

06:29:04,948 --> 06:29:01,680

expected with the clocking new clocking

4530

06:29:10,070 --> 06:29:07,270

parking is fixed

4531

06:29:11,430 --> 06:29:10,080

and you understand it's a proper paper

4532

06:29:13,350 --> 06:29:11,440

uh

4533

06:29:15,350 --> 06:29:13,360

it might be a bit of yaw but it's less

4534

06:29:16,548 --> 06:29:15,360

than 10 degrees it's 10 or 20 degrees

4535

06:29:17,830 --> 06:29:16,558

yeah

4536

06:29:19,750 --> 06:29:17,840

the ninja said if you're pointing

4537

06:29:34,868 --> 06:29:19,760

towards the wii i can fix that if you

4538

06:29:34,878 --> 06:29:40,468

and tomorrow we need a yaw of foxtrot

4539

06:29:40,478 --> 06:29:52,390

yeah we have

4540

06:29:52,400 --> 06:30:46,230

i'll be here

4541

06:30:50,150 --> 06:30:48,310

okay settings there are 12

4542

06:31:03,990 --> 06:30:50,160

copper copper

4543

06:31:04,000 --> 06:31:11,270

facing towards the release

4544

06:31:16,230 --> 06:31:12,788

those are good settings we are happy to

4545

06:31:16,240 --> 06:31:21,750

okay

4546

06:31:24,468 --> 06:31:23,030

tomorrow we're still standing by for

4547

06:31:26,868 --> 06:31:24,478

your goal for the p6 back off position

4548

06:31:28,230 --> 06:31:26,878

we want to make sure each other's and uh

4549

06:31:47,030 --> 06:31:28,240

rusty are clear

4550

06:31:50,310 --> 06:31:48,868

tomah that he can translate to ev2's

4551
06:31:54,070 --> 06:31:50,320
apfr and i have some warnings and

4552
06:31:54,080 --> 06:31:57,350
ready

4553
06:31:57,360 --> 06:32:08,660
hey firm

4554
06:32:11,990 --> 06:32:10,310
[Music]

4555
06:32:14,390 --> 06:32:12,000
warning there's a sharp edge hazard on

4556
06:32:16,788 --> 06:32:14,400
the empty rail attachment lug

4557
06:32:17,670 --> 06:32:16,798
near the two bravo ia inboard radiator

4558
06:32:19,350 --> 06:32:17,680
corner

4559
06:32:21,270 --> 06:32:19,360
and another sharp edge hazard the pit

4560
06:32:28,310 --> 06:32:21,280
pins on the ticker and the sticker do

4561
06:32:31,750 --> 06:32:29,990
two cautions avoid contact with the

4562
06:32:33,910 --> 06:32:31,760
deployed and stowed radiators and the

4563
06:32:40,468 --> 06:32:33,920

battery adapter plate cables on the iea

4564

06:32:46,310 --> 06:32:44,150

okay you will be incrementally yawing

4565

06:32:50,230 --> 06:32:46,320

the boot plate of shane's apr for a

4566

06:32:55,190 --> 06:32:52,070

i'll be incrementally drawing the boot

4567

06:33:14,230 --> 06:32:59,110

you come on i'll feel you there

4568

06:33:18,310 --> 06:33:16,468

the same regards your right boots

4569

06:33:20,070 --> 06:33:18,320

okay

4570

06:33:22,868 --> 06:33:20,080

so ready

4571

06:33:24,390 --> 06:33:22,878

i'm ready i'm going to try you

4572

06:33:32,788 --> 06:33:24,400

stay slowly

4573

06:33:32,798 --> 06:33:40,310

moving slowly let's get face

4574

06:33:45,350 --> 06:33:42,948

the first slot

4575

06:33:51,590 --> 06:33:47,990

you pitch the road up pitch it up all

4576
06:33:56,468 --> 06:33:53,670
that's your first swap

4577
06:33:59,110 --> 06:33:56,478
year i was going to stop

4578
06:34:01,270 --> 06:33:59,120
you secretaries with the

4579
06:34:03,830 --> 06:34:01,280
i can't have something on the wrong side

4580
06:34:04,948 --> 06:34:03,840
of my bed

4581
06:34:07,270 --> 06:34:04,958
you're good

4582
06:34:08,390 --> 06:34:07,280
you're done i'm yelling you back to the

4583
06:34:11,910 --> 06:34:08,400
outside

4584
06:34:13,750 --> 06:34:11,920
back to your on your here to your right

4585
06:34:17,910 --> 06:34:13,760
right

4586
06:34:20,948 --> 06:34:17,920
yeah

4587
06:34:22,548 --> 06:34:20,958
a lot of returns to your life

4588
06:34:25,510 --> 06:34:22,558

jenny can you double check me on this

4589

06:34:31,590 --> 06:34:25,520

this all right it looks really close

4590

06:34:35,830 --> 06:34:33,190

i'm going to the left but it feels like

4591

06:34:38,230 --> 06:34:35,840

yarosa has to

4592

06:34:40,708 --> 06:34:38,240

needle between the

4593

06:34:45,190 --> 06:34:40,718

what used to be i think the thicker and

4594

06:35:03,190 --> 06:34:46,948

copy them we're glad you're letting us

4595

06:35:03,200 --> 06:35:07,350

i'll try three packages

4596

06:35:12,310 --> 06:35:09,990

on my left i left

4597

06:35:29,750 --> 06:35:12,320

with this import

4598

06:35:29,760 --> 06:35:42,948

why

4599

06:35:47,030 --> 06:35:44,788

solid

4600

06:35:48,868 --> 06:35:47,040

thanks

4601
06:35:51,830 --> 06:35:48,878
you're not in

4602
06:35:52,708 --> 06:35:51,840
and you have to go back

4603
06:35:54,628 --> 06:35:52,718
yes

4604
06:36:12,310 --> 06:35:54,638
wait

4605
06:36:16,628 --> 06:36:14,948
all right uh you guys were talking uh

4606
06:36:19,510 --> 06:36:16,638
what you mentioned down here and we

4607
06:36:20,628 --> 06:36:19,520
really don't have as uh good situational

4608
06:36:22,948 --> 06:36:20,638
awareness

4609
06:36:24,468 --> 06:36:22,958
on this yaw as you do so your eyes are

4610
06:36:27,030 --> 06:36:24,478
better than any camera views that we

4611
06:36:28,868 --> 06:36:27,040
have so we agree getting shane to lean

4612
06:36:31,670 --> 06:36:28,878
back is a good idea but beyond that we

4613
06:36:33,110 --> 06:36:31,680

can't offer any additional views or

4614

06:36:36,708 --> 06:36:33,120

clearances better than what you have

4615

06:36:46,868 --> 06:36:38,310

yeah i understand that junior how about

4616

06:36:46,878 --> 06:36:53,510

there's nothing there

4617

06:36:56,310 --> 06:36:54,628

you're saying what do you think of the

4618

06:37:03,910 --> 06:36:56,320

cleanse with sweeper for

4619

06:37:06,468 --> 06:37:05,270

i can't see it

4620

06:37:10,868 --> 06:37:06,478

it's

4621

06:37:11,830 --> 06:37:10,878

come see us all right like uh 10 o'clock

4622

06:37:14,150 --> 06:37:11,840

for you

4623

06:37:18,708 --> 06:37:14,160

i see the one below me that i can't see

4624

06:37:23,190 --> 06:37:20,788

one pointing to the earth you mean but

4625

06:37:24,788 --> 06:37:23,200

towards my feet i can see that

4626
06:37:26,948 --> 06:37:24,798
as you can see this one towards your

4627
06:37:28,708 --> 06:37:26,958
feet but not the other one correct

4628
06:37:31,590 --> 06:37:28,718
okay that's the other one that we have

4629
06:37:35,510 --> 06:37:33,990
and to confirm you guys can go whichever

4630
06:37:37,110 --> 06:37:35,520
way you choose here where you have the

4631
06:37:38,468 --> 06:37:37,120
best clearances

4632
06:37:40,548 --> 06:37:38,478
we just have to make sure that the

4633
06:37:44,310 --> 06:37:40,558
tether is clear and that you have eyes

4634
06:37:47,190 --> 06:37:46,310
instead are you talking about journey of

4635
06:37:49,190 --> 06:37:47,200
change

4636
06:37:50,868 --> 06:37:49,200
together

4637
06:37:54,468 --> 06:37:50,878
yep you can move to shane's left or

4638
06:37:55,990 --> 06:37:54,478

shane's right to a setting of yaw ten we

4639

06:37:58,310 --> 06:37:56,000

just have to make that make sure that

4640

06:38:00,468 --> 06:37:58,320

shane's safety tether check which you'll

4641

06:38:03,430 --> 06:38:00,478

be keeping an eye on

4642

06:38:18,468 --> 06:38:04,708

okay

4643

06:38:18,478 --> 06:38:24,868

going

4644

06:38:29,590 --> 06:38:26,390

it's one click

4645

06:38:51,500 --> 06:38:29,600

here let me ramp that up

4646

06:38:51,510 --> 06:38:58,310

[Music]

4647

06:38:58,320 --> 06:39:01,030

looks good

4648

06:39:04,390 --> 06:39:02,628

you can't see anything tomorrow another

4649

06:39:06,070 --> 06:39:04,400

question what are you talking about

4650

06:39:27,750 --> 06:39:06,080

clearance look okay there's nothing

4651
06:39:31,430 --> 06:39:30,390
actually for the same i think

4652
06:39:35,590 --> 06:39:31,440
ah

4653
06:39:35,600 --> 06:39:40,390
all right

4654
06:39:55,350 --> 06:39:42,868
let's keep going anyway you have to send

4655
06:39:58,708 --> 06:39:57,190
we copy to my you're saying you have the

4656
06:40:03,670 --> 06:39:58,718
same clearance concern going in this

4657
06:40:08,230 --> 06:40:05,110
if you guys agree that this is a good

4658
06:40:16,390 --> 06:40:09,590
i just want to be sure we're doing the

4659
06:40:19,750 --> 06:40:18,468
i'm checking for you tomorrow

4660
06:40:22,310 --> 06:40:19,760
that's it

4661
06:40:24,830 --> 06:40:22,320
yeah let's do one more and then go out

4662
06:40:26,390 --> 06:40:24,840
and look at it

4663
06:40:34,548 --> 06:40:26,400

yeah

4664

06:40:39,430 --> 06:40:37,110

we go are we going no no we're not going

4665

06:40:41,350 --> 06:40:39,440

okay so our information is telling us

4666

06:40:43,350 --> 06:40:41,360

that we do have the clearance

4667

06:40:44,868 --> 06:40:43,360

shane can again lean back in order to

4668

06:40:46,310 --> 06:40:44,878

help

4669

06:40:48,070 --> 06:40:46,320

but we should have the clearance to

4670

06:40:49,430 --> 06:40:48,080

continue if you really think it's no go

4671

06:40:53,110 --> 06:40:49,440

that's a different situation because you

4672

06:40:56,628 --> 06:40:54,948

oh i think i think it's gonna be okay

4673

06:41:02,230 --> 06:40:56,638

changing the back

4674

06:41:27,350 --> 06:41:05,830

okay shane you're ready ready

4675

06:41:27,360 --> 06:41:42,548

before one click

4676
06:41:45,510 --> 06:41:44,548
yeah i think it's really there's a lot

4677
06:41:47,190 --> 06:41:45,520
of fear

4678
06:41:48,230 --> 06:41:47,200
okay that's that's for the stating of

4679
06:42:00,868 --> 06:41:48,240
eight

4680
06:42:00,878 --> 06:42:17,030
copy

4681
06:42:17,040 --> 06:42:42,868
here comes the creep

4682
06:42:47,110 --> 06:42:44,868
all right copy we understand you're at a

4683
06:42:49,110 --> 06:42:47,120
setting of 10 and as a sanity check

4684
06:42:53,110 --> 06:42:49,120
tomorrow that looks good for you for the

4685
06:42:56,150 --> 06:42:54,390
it

4686
06:42:57,510 --> 06:42:56,160
looks great

4687
06:43:00,230 --> 06:42:57,520
excellent we're really happy to hear

4688
06:43:02,150 --> 06:43:00,240

that well done you too

4689

06:43:03,750 --> 06:43:02,160

so maya you can double check shane's

4690

06:43:05,670 --> 06:43:03,760

tether all we're looking for there is

4691

06:43:07,830 --> 06:43:05,680

for you to verify that it's clear and

4692

06:43:09,990 --> 06:43:07,840

give him words about how to deconflict

4693

06:43:12,230 --> 06:43:10,000

it when he egresses the apfr after the

4694

06:43:16,708 --> 06:43:12,240

next handoff and then i can get you to

4695

06:43:22,468 --> 06:43:20,390

yeah so you succeed with clear share

4696

06:43:23,910 --> 06:43:22,478

it's kind of going

4697

06:43:26,948 --> 06:43:23,920

back

4698

06:43:29,350 --> 06:43:26,958

and around the apfr

4699

06:43:30,708 --> 06:43:29,360

and then uh choose your uh

4700

06:43:32,070 --> 06:43:30,718

your um

4701
06:43:42,628 --> 06:43:32,080
belly button that's not gonna be a

4702
06:43:46,948 --> 06:43:44,628
and without them crossing over to the

4703
06:43:49,110 --> 06:43:46,958
other side of your ear

4704
06:43:51,510 --> 06:43:49,120
hey firm you can fairly around the iea

4705
06:43:57,160 --> 06:43:51,520
hand corn ia corner let me know if you

4706
06:44:02,150 --> 06:44:00,310
[Music]

4707
06:44:05,190 --> 06:44:02,160
no problem you're headed just outboard

4708
06:44:11,510 --> 06:44:05,200
of your apfr to fairlead

4709
06:44:11,520 --> 06:45:20,548
yes

4710
06:45:28,788 --> 06:45:24,150
you'll be fair leading on handrail 5361

4711
06:45:33,830 --> 06:45:30,548
this is mission control houston five

4712
06:45:37,270 --> 06:45:33,840
hours six minutes into today's spacewalk

4713
06:45:38,788 --> 06:45:37,280

tomorrow pesquet is positioning himself

4714

06:45:41,510 --> 06:45:38,798

at the far

4715

06:45:43,350 --> 06:45:41,520

end of the p6

4716

06:45:45,270 --> 06:45:43,360

truss structure on the international

4717

06:45:46,468 --> 06:45:45,280

space station having joined shane

4718

06:45:49,110 --> 06:45:46,478

kimbrough

4719

06:45:50,948 --> 06:45:49,120

ready to take a handoff of the irosa

4720

06:45:54,070 --> 06:45:50,958

rollout solar array

4721

06:45:57,110 --> 06:45:54,080

back from kimbrough pasque handed the

4722

06:46:00,548 --> 06:45:57,120

array off to kimbrough after delivering

4723

06:46:03,670 --> 06:46:00,558

it to the nasa astronaut

4724

06:46:05,510 --> 06:46:03,680

while uh transiting at the end of the

4725

06:46:07,830 --> 06:46:05,520

station's robotic arm that was being

4726
06:46:10,230 --> 06:46:07,840
driven by megan mcarthur from a robotics

4727
06:46:12,390 --> 06:46:10,240
workstation inside the international

4728
06:46:15,750 --> 06:46:12,400
space station now we're at the second

4729
06:46:18,708 --> 06:46:15,760
handoff position where pesquet will uh

4730
06:46:20,788 --> 06:46:18,718
receive the array once again as the two

4731
06:46:23,590 --> 06:46:20,798
crew members will prepare

4732
06:46:26,230 --> 06:46:23,600
to install the array on a mounting

4733
06:46:29,750 --> 06:46:26,240
bracket at the base basically the mast

4734
06:46:38,628 --> 06:46:29,760
canister portion of the p6 solar array

4735
06:46:55,030 --> 06:46:41,670
uh can i do it on five three five eight

4736
06:47:03,190 --> 06:46:57,750
that's fine things you want on the

4737
06:47:08,468 --> 06:47:04,788
fox 12 so i'm guessing the clocking

4738
06:47:21,910 --> 06:47:08,478

doesn't change the switch is india india

4739

06:47:25,830 --> 06:47:23,750

copy good settings you can ingress the

4740

06:47:34,868 --> 06:47:25,840

apfr tomah and i have a big picture

4741

06:47:40,150 --> 06:47:37,350

i'm ready jimmy whatever

4742

06:47:42,628 --> 06:47:40,160

okay big picture is that we are just

4743

06:47:45,190 --> 06:47:42,638

over 20 minutes until our working

4744

06:47:46,468 --> 06:47:45,200

eclipse starts so we are going to do

4745

06:47:48,150 --> 06:47:46,478

this hand off

4746

06:47:50,868 --> 06:47:48,160

work on getting our rosa installed on

4747

06:47:52,788 --> 06:47:50,878

the mounting bracket and unfolded then

4748

06:47:54,948 --> 06:47:52,798

we'll assess where we are we might jump

4749

06:47:57,510 --> 06:47:54,958

straight to our cable connections if we

4750

06:47:58,548 --> 06:47:57,520

are not working eclipse and then we'll

4751

06:48:00,708 --> 06:47:58,558

um

4752

06:48:02,468 --> 06:48:00,718

come back to the bolts later on and

4753

06:48:03,750 --> 06:48:02,478

we're still assessing deployment at this

4754

06:48:06,468 --> 06:48:03,760

time

4755

06:48:20,230 --> 06:48:06,478

the limiting consumable is seven hours

4756

06:48:27,590 --> 06:48:22,910

jenny on the good

4757

06:48:32,150 --> 06:48:29,830

the big picture words from spacewalk

4758

06:48:34,548 --> 06:48:32,160

communicator jenny seidi

4759

06:48:37,350 --> 06:48:34,558

to uh tomah pesquet and shane kimbrough

4760

06:48:39,510 --> 06:48:37,360

at the p6 solar array truss structure

4761

06:48:42,070 --> 06:48:39,520

as they are

4762

06:48:43,750 --> 06:48:42,080

about to to enter a

4763

06:48:46,468 --> 06:48:43,760

nighttime pass

4764

06:48:50,150 --> 06:48:46,478
during which time the connectors

4765

06:48:53,350 --> 06:48:50,160
the electrical connectors can be mated

4766

06:48:55,670 --> 06:48:53,360
to provide electrical continuity between

4767

06:48:57,590 --> 06:48:55,680
the new solar array and the integrated

4768

06:48:59,270 --> 06:48:57,600
electronics assembly

4769

06:49:01,590 --> 06:48:59,280
basically the guts of the electronic

4770

06:49:04,788 --> 06:49:01,600
system for the p6 solar array power

4771

06:49:05,990 --> 06:49:04,798
channels those being the 2b and 4b power

4772

06:49:07,910 --> 06:49:06,000
channels

4773

06:49:10,868 --> 06:49:07,920
we lost an hour

4774

06:49:13,590 --> 06:49:10,878
while we were evaluating uh the

4775

06:49:15,910 --> 06:49:13,600
condition of shane kimbrough's suit

4776
06:49:17,590 --> 06:49:15,920
while he had to restart his display

4777
06:49:20,948 --> 06:49:17,600
control module

4778
06:49:23,830 --> 06:49:20,958
that had an issue of undetermined nature

4779
06:49:25,830 --> 06:49:23,840
and making sure that his cooling system

4780
06:49:29,110 --> 06:49:25,840
in his suit basically called the

4781
06:49:31,110 --> 06:49:29,120
sublimator was operating properly and

4782
06:49:33,670 --> 06:49:31,120
that cost the crew time

4783
06:49:35,910 --> 06:49:33,680
so downstream here for the remainder of

4784
06:49:38,788 --> 06:49:35,920
the spacewalk we are watching

4785
06:49:40,868 --> 06:49:38,798
consumables and later we'll determine

4786
06:49:43,910 --> 06:49:40,878
whether we can complete all of the work

4787
06:49:45,990 --> 06:49:43,920
associated with the unfolding

4788
06:49:47,350 --> 06:49:46,000

of the array which is basically folded

4789

06:49:50,310 --> 06:49:47,360

up in half

4790

06:49:51,350 --> 06:49:50,320

it must unfold the two sections of this

4791

06:49:54,948 --> 06:49:51,360

boom

4792

06:49:56,150 --> 06:49:54,958

and then ultimately at the end of uh all

4793

06:49:58,948 --> 06:49:56,160

of the work

4794

06:50:01,990 --> 06:49:58,958

it needs to uh be deployed to its full

4795

06:50:03,670 --> 06:50:02,000

length of 60 feet and tensioned properly

4796

06:50:06,628 --> 06:50:03,680

to provide the

4797

06:50:16,628 --> 06:50:06,638

proper electrical continuity and output

4798

06:50:20,310 --> 06:50:18,230

and then

4799

06:50:23,030 --> 06:50:20,320

nice

4800

06:50:25,430 --> 06:50:23,040

okay our two little cameras are cleared

4801
06:50:27,030 --> 06:50:25,440
uh our recruiting is good for now

4802
06:50:28,130 --> 06:50:27,040
puppy ensure your visors and glove

4803
06:50:31,030 --> 06:50:28,140
heaters are set

4804
06:50:33,510 --> 06:50:31,040
[Applause]

4805
06:50:35,350 --> 06:50:33,520
viewers advisories down

4806
06:50:37,110 --> 06:50:35,360
copy i understand your heels are secure

4807
06:50:43,590 --> 06:50:37,120
in the apfr and we'll do a gauntlets

4808
06:50:48,310 --> 06:50:45,670
okay copy i'll let you work with shane

4809
06:50:50,390 --> 06:50:48,320
to uh take control of my rosa you will

4810
06:50:52,230 --> 06:50:50,400
be performing a rep swap and it's

4811
06:50:54,150 --> 06:50:52,240
important to mod that you attach your

4812
06:50:58,548 --> 06:50:54,160
mini workstation rat to the scoop which

4813
06:51:02,150 --> 06:50:59,910

okay

4814

06:51:06,230 --> 06:51:02,160

uh shin can you draw the arrows that you

4815

06:51:06,240 --> 06:51:23,830

it looks good

4816

06:51:31,750 --> 06:51:26,390

bring back your left a little bit and up

4817

06:51:36,788 --> 06:51:34,788

okay i will write on it

4818

06:51:40,628 --> 06:51:36,798

nice work

4819

06:52:01,670 --> 06:51:42,548

come back to the right

4820

06:52:01,680 --> 06:52:07,190

you can rotate your right a bit more

4821

06:52:11,350 --> 06:52:09,270

okay i have two hands on it

4822

06:52:13,590 --> 06:52:11,360

i think you have control okay you have

4823

06:52:16,080 --> 06:52:13,600

control i'll take my run off i have

4824

06:52:41,030 --> 06:52:16,090

control

4825

06:52:45,590 --> 06:52:42,548

all right tomorrow the rent is gone you

4826
06:52:49,590 --> 06:52:45,600
have control i have control

4827
06:52:51,360 --> 06:52:49,600
ground copies red spot complete

4828
06:52:58,708 --> 06:52:51,370
my head control

4829
06:53:08,610 --> 06:53:00,868
shane you can egress the apfr and

4830
06:53:08,620 --> 06:53:27,590
[Applause]

4831
06:53:35,270 --> 06:53:30,700
when we come out

4832
06:53:37,350 --> 06:53:35,280
[Applause]

4833
06:54:12,070 --> 06:53:37,360
i'm not

4834
06:54:16,230 --> 06:54:14,150
shane after your tether is cleared you

4835
06:54:18,468 --> 06:54:16,240
will be translating to the left side of

4836
06:54:24,830 --> 06:54:18,478
the mounting bracket i have a warning

4837
06:54:24,840 --> 06:54:29,270
both coming first

4838
06:54:31,990 --> 06:54:30,868

i think we're ready to computer warning

4839

06:54:34,468 --> 06:54:32,000

and customers

4840

06:54:36,628 --> 06:54:34,478

copy warning when you're on the aft side

4841

06:54:38,948 --> 06:54:36,638

of the mod kit or outboard avoid

4842

06:54:46,548 --> 06:54:38,958

contacting the legacy blanket boxes and

4843

06:54:51,510 --> 06:54:48,948

and caution well you're both working on

4844

06:54:52,868 --> 06:54:51,520

the mod kit you must not simultaneously

4845

06:54:54,390 --> 06:54:52,878

impart loads

4846

06:54:57,190 --> 06:54:54,400

sudden stops and quick grabs are not

4847

06:54:59,990 --> 06:54:57,200

allowed and there is a 30 pound maximum

4848

06:55:36,390 --> 06:55:00,000

lateral load on the mod kit during and

4849

06:55:42,310 --> 06:55:38,948

i'm getting my chili back up fairly come

4850

06:55:53,430 --> 06:55:42,320

on over here there okay good job

4851
06:55:58,310 --> 06:55:56,310
at the five hour 17 minute mark in the

4852
06:56:02,310 --> 06:55:58,320
spacewalk a good look

4853
06:56:03,590 --> 06:56:02,320
at the first irosa iss rollout solar

4854
06:56:05,350 --> 06:56:03,600
array

4855
06:56:06,868 --> 06:56:05,360
that is

4856
06:56:09,190 --> 06:56:06,878
being mounted

4857
06:56:11,830 --> 06:56:09,200
to a mod kit as it's called a basically

4858
06:56:15,110 --> 06:56:11,840
a mounting bracket at the base

4859
06:56:17,190 --> 06:56:15,120
of the p6 solar array truss structure

4860
06:56:19,750 --> 06:56:17,200
these so-called legacy arrays the

4861
06:56:21,670 --> 06:56:19,760
original arrays for the p6 truss

4862
06:56:23,190 --> 06:56:21,680
you're translating outboard you'll be

4863
06:56:26,150 --> 06:56:23,200

looking for uh

4864

06:56:28,628 --> 06:56:26,160
part of the largest arrays uh ever

4865

06:56:31,190 --> 06:56:28,638
built to convert solar energy into

4866

06:56:34,788 --> 06:56:31,200
electrical power previously are still

4867

06:56:36,390 --> 06:56:34,798
armed 27 000 square feet in total for

4868

06:56:38,708 --> 06:56:36,400
the old arrays

4869

06:56:42,468 --> 06:56:38,718
more than half of the area of a football

4870

06:56:44,230 --> 06:56:42,478
field 112 feet long 39 feet wide

4871

06:56:47,190 --> 06:56:44,240
once they unfurl

4872

06:56:48,230 --> 06:56:47,200
the irosa arrays will be about 60 feet

4873

06:56:51,110 --> 06:56:48,240
long

4874

06:56:53,590 --> 06:56:51,120
each to provide 20 additional kilowatts

4875

06:56:57,430 --> 06:56:53,600
of power for station operations

4876
06:56:59,670 --> 06:56:57,440
shane did not stow his pgt on the

4877
06:57:01,750 --> 06:56:59,680
crew lock bag handrail and he did not

4878
06:57:03,830 --> 06:57:01,760
retrieve a long duration tie-down tether

4879
06:57:06,708 --> 06:57:03,840
which is a contingency

4880
06:57:06,718 --> 06:57:09,910
it's something we do now

4881
06:57:13,350 --> 06:57:11,750
and we're not concerned about that at

4882
06:57:21,510 --> 06:57:13,360
this time we're just going to go for

4883
06:57:29,990 --> 06:57:22,948
all right so let me check the mounting

4884
06:57:30,000 --> 06:57:34,788
everything looks good there

4885
06:57:38,310 --> 06:57:36,868
okay copy and chain you want to position

4886
06:57:39,590 --> 06:57:38,320
yourself on the outboard side of the

4887
06:58:00,310 --> 06:57:39,600
mounting bracket

4888
06:58:04,868 --> 06:58:02,070

i have a note and a caution for you

4889

06:58:05,990 --> 06:58:04,878

we're pressing to install

4890

06:58:07,750 --> 06:58:06,000

toma

4891

06:58:09,990 --> 06:58:07,760

you can use the adjustable equipment

4892

06:58:11,910 --> 06:58:10,000

tether hook the long side which is

4893

06:58:13,590 --> 06:58:11,920

stowed on the mounting bracket scoop to

4894

06:58:16,390 --> 06:58:13,600

remove the tether

4895

06:58:22,390 --> 06:58:16,400

on the root beam which is closest to the

4896

06:58:26,708 --> 06:58:24,548

and shane you can help stabilize can you

4897

06:58:29,270 --> 06:58:26,718

check my jaw

4898

06:58:33,270 --> 06:58:29,280

as you all know that it's uh

4899

06:58:35,670 --> 06:58:34,390

yeah

4900

06:58:46,230 --> 06:58:35,680

okay i was talking about the jaw of the

4901
06:59:00,788 --> 06:58:49,110
okay i'll hold right here

4902
06:59:00,798 --> 06:59:05,910
i'm letting go completely yes i have it

4903
06:59:05,920 --> 06:59:10,948
yes i do

4904
06:59:14,948 --> 06:59:12,868
okay now

4905
06:59:17,830 --> 06:59:14,958
the a key

4906
06:59:19,190 --> 06:59:17,840
that goes to the other screw

4907
06:59:23,110 --> 06:59:19,200
goes through the screw from the mounting

4908
06:59:25,270 --> 06:59:23,120
bracket goes to the irosa scoop

4909
06:59:27,510 --> 06:59:25,280
and the red goes to the bearing of this

4910
06:59:29,590 --> 06:59:27,520
led and goes to the bag

4911
06:59:31,110 --> 06:59:29,600
hey firm that's a good config you'll be

4912
06:59:33,030 --> 06:59:31,120
removing the scoop that you just

4913
07:00:01,590 --> 06:59:33,040

threaded to you can tend it back to the

4914

07:00:06,070 --> 07:00:03,190

uh

4915

07:00:11,270 --> 07:00:06,080

towards you just about 10 centimeters

4916

07:00:16,468 --> 07:00:14,390

make sure that when you're doing this

4917

07:00:17,670 --> 07:00:16,478

the bottom of the root beam has to be

4918

07:00:19,830 --> 07:00:17,680

aligned with the mounting bracket

4919

07:00:21,750 --> 07:00:19,840

alignment features prior to install to

4920

07:00:25,910 --> 07:00:21,760

avoid prematurely capturing those soft

4921

07:00:28,628 --> 07:00:27,830

approach use some more let's miss some

4922

07:00:31,590 --> 07:00:28,638

more

4923

07:00:33,270 --> 07:00:31,600

that should be good right there okay

4924

07:00:35,270 --> 07:00:33,280

i have it kind of

4925

07:00:36,788 --> 07:00:35,280

holding it down on the

4926
07:00:38,788 --> 07:00:36,798
on the platform the mounting bracket

4927
07:00:39,590 --> 07:00:38,798
touch on that's

4928
07:00:41,830 --> 07:00:39,600
uh

4929
07:00:44,740 --> 07:00:41,840
lower to your right

4930
07:00:51,190 --> 07:00:44,750
which way right now

4931
07:00:51,200 --> 07:01:03,990
he's taking it off

4932
07:01:07,910 --> 07:01:05,670
hello there

4933
07:01:11,430 --> 07:01:07,920
it's a bit low on your side i see yep

4934
07:01:14,468 --> 07:01:11,440
now i'm good okay now i'm on the ledge

4935
07:01:18,150 --> 07:01:16,468
towards you just a little

4936
07:01:19,670 --> 07:01:18,160
okay

4937
07:01:22,310 --> 07:01:19,680
i think we're good whenever you want to

4938
07:01:25,990 --> 07:01:22,320

press it you're ready to slide it

4939

07:01:30,868 --> 07:01:26,000

okay three two one

4940

07:01:33,190 --> 07:01:32,310

and we'll roll it to your right at all

4941

07:01:35,590 --> 07:01:33,200

or not

4942

07:01:38,708 --> 07:01:35,600

yeah keep it down

4943

07:01:38,718 --> 07:01:48,950

towards

4944

07:01:48,960 --> 07:01:52,230

[Music]

4945

07:01:57,990 --> 07:01:55,350

i don't know

4946

07:02:00,310 --> 07:01:58,000

all right you came out of the slot

4947

07:02:05,750 --> 07:02:02,310

after you re-engage the bolts

4948

07:02:05,760 --> 07:02:16,628

yeah very racial

4949

07:02:16,638 --> 07:02:27,750

helmet is closed

4950

07:02:40,790 --> 07:02:30,410

all right stay here

4951
07:02:40,800 --> 07:02:48,628
[Applause]

4952
07:02:48,638 --> 07:03:03,510
that

4953
07:03:07,190 --> 07:03:04,708
see

4954
07:03:09,110 --> 07:03:07,200
now you're in you're starting i'm in

4955
07:03:10,070 --> 07:03:09,120
yeah keep coming

4956
07:03:11,670 --> 07:03:10,080
off

4957
07:03:14,468 --> 07:03:11,680
yeah huh

4958
07:03:15,990 --> 07:03:14,478
solid contact

4959
07:03:22,550 --> 07:03:16,000
there you go

4960
07:03:22,560 --> 07:03:31,110
[Music]

4961
07:03:38,230 --> 07:03:34,948
got to the end and then mine's still out

4962
07:03:40,868 --> 07:03:38,240
if the ball depends still out

4963
07:03:52,548 --> 07:03:40,878

maybe we triggered it the first time

4964

07:04:10,070 --> 07:03:54,280

this one

4965

07:04:13,350 --> 07:04:11,470

okay everybody's ready now

4966

07:04:21,990 --> 07:04:13,360

[Applause]

4967

07:04:26,468 --> 07:04:23,590

you have the hand back on it we're both

4968

07:04:27,510 --> 07:04:26,478

in the slots right now okay we're just

4969

07:04:28,708 --> 07:04:27,520

slightly

4970

07:04:29,750 --> 07:04:28,718

right yep

4971

07:04:31,590 --> 07:04:29,760

holy

4972

07:04:32,468 --> 07:04:31,600

okay

4973

07:04:35,990 --> 07:04:32,478

no

4974

07:04:36,000 --> 07:04:40,660

let your feeling anywhere

4975

07:04:45,590 --> 07:04:43,190

[Music]

4976

07:04:46,468 --> 07:04:45,600

i know i mean i think

4977

07:04:48,390 --> 07:04:46,478

leo

4978

07:04:51,830 --> 07:04:48,400

you're almost doing and i'm i'm not

4979

07:04:58,628 --> 07:04:51,840

there yet a little further off from you

4980

07:05:04,230 --> 07:05:00,468

you can't put much more force on it so i

4981

07:05:08,830 --> 07:05:06,628

let me retrieve the level two if you

4982

07:05:10,390 --> 07:05:08,840

give me yaw to your

4983

07:05:12,150 --> 07:05:10,400

right

4984

07:05:16,468 --> 07:05:12,160

yeah but that gets me out now i'm

4985

07:05:20,708 --> 07:05:19,430

we need to have mine in first maybe

4986

07:05:22,310 --> 07:05:20,718

because you're right there you can put

4987

07:05:24,708 --> 07:05:22,320

more force on it you're close yeah but

4988

07:05:26,548 --> 07:05:24,718

i'm gonna have to uh y'all the the kfl

4989

07:05:28,390 --> 07:05:26,558

which i can do but i have to

4990

07:05:31,030 --> 07:05:28,400

roll that phone

4991

07:05:32,070 --> 07:05:31,040

okay hey i can hold it

4992

07:05:33,270 --> 07:05:32,080

try to

4993

07:06:03,430 --> 07:05:33,280

get it

4994

07:06:07,430 --> 07:06:05,030

you know when you have it again and i'll

4995

07:06:13,510 --> 07:06:07,440

go check the picture

4996

07:06:13,520 --> 07:06:39,490

my heels back here

4997

07:06:49,990 --> 07:06:45,830

[Music]

4998

07:06:50,000 --> 07:06:54,230

there he goes that triggered on that

4999

07:06:54,240 --> 07:07:02,708

okay you're in a good position now

5000

07:07:04,948 --> 07:07:03,670

um

5001
07:07:06,548 --> 07:07:04,958
you know when you have control on that

5002
07:07:07,750 --> 07:07:06,558
you also expect you know making it

5003
07:07:40,708 --> 07:07:07,760
better

5004
07:08:20,548 --> 07:07:42,468
okay you're back

5005
07:08:26,070 --> 07:08:21,910
here we go

5006
07:08:26,080 --> 07:08:33,030
are you ready ready

5007
07:08:38,830 --> 07:08:35,190
deal nine million uh fishing forward

5008
07:08:45,080 --> 07:08:41,910
great keep it there

5009
07:08:59,030 --> 07:08:45,090
you ready yeah well

5010
07:09:02,948 --> 07:09:01,270
centimeters now that's when i i hate to

5011
07:09:04,948 --> 07:09:02,958
stop right here

5012
07:09:10,708 --> 07:09:04,958
i think we're in but i'm

5013
07:09:10,718 --> 07:09:15,670

that comes with anywhere from here

5014

07:09:22,628 --> 07:09:19,350

we have some marginal forward off

5015

07:09:25,030 --> 07:09:22,638

and we have margin my way

5016

07:09:27,110 --> 07:09:25,040

go away yep and which means you probably

5017

07:09:29,590 --> 07:09:27,120

do on your side too

5018

07:09:31,830 --> 07:09:29,600

well i don't see you but okay

5019

07:09:32,948 --> 07:09:31,840

let me push it towards you

5020

07:09:36,500 --> 07:09:32,958

um

5021

07:09:45,020 --> 07:09:36,510

it's gonna go towards you oh okay my way

5022

07:10:03,270 --> 07:09:47,350

[Music]

5023

07:10:05,910 --> 07:10:04,708

yours is not triggered

5024

07:10:08,548 --> 07:10:05,920

okay

5025

07:10:10,708 --> 07:10:08,558

how about the leftover lining

5026

07:10:11,910 --> 07:10:10,718

good

5027

07:10:13,830 --> 07:10:11,920

yeah i mean we're going right in the

5028

07:10:16,548 --> 07:10:13,840

hole

5029

07:10:18,390 --> 07:10:16,558

every tony just stops for me

5030

07:10:20,310 --> 07:10:18,400

and we copy you too that the alignment

5031

07:10:23,430 --> 07:10:20,320

features are aligned but

5032

07:10:25,190 --> 07:10:23,440

the uh soft capture features are not

5033

07:10:29,350 --> 07:10:25,200

triggering to secure eyerosa we are

5034

07:10:33,270 --> 07:10:31,030

you want to go your side first string

5035

07:10:35,270 --> 07:10:33,280

maybe yeah i triggered a couple times

5036

07:10:36,948 --> 07:10:35,280

jenny but didn't capture it

5037

07:10:39,590 --> 07:10:36,958

yeah we did see them trigger a couple of

5038

07:10:42,070 --> 07:10:39,600

times um once on the first try and then

5039

07:10:43,670 --> 07:10:42,080

prematurely trigger him later on but uh

5040

07:10:56,150 --> 07:10:43,680

we agree with you guys what you guys are

5041

07:11:04,490 --> 07:10:57,830

three two

5042

07:11:10,948 --> 07:11:05,750

[Music]

5043

07:11:14,960 --> 07:11:12,788

i think i'm into

5044

07:11:22,468 --> 07:11:14,970

javier

5045

07:11:26,548 --> 07:11:24,468

and shane if you get one of the soft

5046

07:11:28,070 --> 07:11:26,558

capture features deployed properly you

5047

07:11:29,910 --> 07:11:28,080

can

5048

07:11:31,110 --> 07:11:29,920

try and push the other one in so

5049

07:11:33,990 --> 07:11:31,120

manually

5050

07:11:37,910 --> 07:11:35,990

okay they're both in right now jenny so

5051

07:11:40,150 --> 07:11:37,920

i think we got it all right last try all

5052

07:11:44,708 --> 07:11:42,548

okay copy great job

5053

07:11:46,548 --> 07:11:44,718

great job you two i understand that we

5054

07:11:49,270 --> 07:11:46,558

are installed with the soft captures

5055

07:11:52,150 --> 07:11:49,280

triggered so with that uh shane i'm

5056

07:11:54,788 --> 07:11:52,160

gonna have you finger start m 31 through

5057

07:12:01,990 --> 07:11:54,798

34 which are the m bolts on the bottom

5058

07:12:05,990 --> 07:12:03,910

and so we are all on the same page we

5059

07:12:08,548 --> 07:12:06,000

are working toward getting

5060

07:12:10,390 --> 07:12:08,558

irosa in a structurally sound config and

5061

07:12:15,030 --> 07:12:10,400

we will not be doing electrical

5062

07:12:15,040 --> 07:12:21,990

okay and what's my next step

5063

07:12:22,000 --> 07:12:26,548

make sure

5064

07:12:29,430 --> 07:12:27,910

you are going to be

5065

07:12:31,270 --> 07:12:29,440

uh

5066

07:12:33,990 --> 07:12:31,280

releasing your rat and removing the

5067

07:12:35,830 --> 07:12:34,000

scoop which is in your left hand to do

5068

07:12:37,430 --> 07:12:35,840

that you're going to be using the other

5069

07:12:45,190 --> 07:12:37,440

side of the adjustable equipment tether

5070

07:12:49,670 --> 07:12:46,948

this is mission control houston five

5071

07:12:51,190 --> 07:12:49,680

hours 33 minutes into today's spacewalk

5072

07:12:53,830 --> 07:12:51,200

those words from

5073

07:12:56,948 --> 07:12:53,840

space walk communicator jenny sidey

5074

07:12:59,110 --> 07:12:56,958

to the two space walkers tomah pesquet

5075

07:13:00,150 --> 07:12:59,120

and shane kimbrough indicating that we

5076
07:13:02,390 --> 07:13:00,160
will not

5077
07:13:03,590 --> 07:13:02,400
be able to have enough time today to

5078
07:13:05,270 --> 07:13:03,600
finish up

5079
07:13:07,510 --> 07:13:05,280
all of the work associated with the

5080
07:13:11,350 --> 07:13:07,520
installation and deployment

5081
07:13:13,430 --> 07:13:11,360
of this first iss rollout solar array

5082
07:13:16,468 --> 07:13:13,440
now where we wind up is yet to be

5083
07:13:20,230 --> 07:13:16,478
determined and how much work is left

5084
07:13:22,310 --> 07:13:20,240
to be conducted on the next spacewalk is

5085
07:13:24,310 --> 07:13:22,320
tbd at this point but we will not be

5086
07:13:27,110 --> 07:13:24,320
finishing up all of the work associated

5087
07:13:29,030 --> 07:13:27,120
with this first array during this

5088
07:13:31,110 --> 07:13:29,040

initial spacewalk

5089

07:13:32,310 --> 07:13:31,120

the next spacewalk is scheduled for

5090

07:13:35,110 --> 07:13:32,320

sunday

5091

07:13:36,788 --> 07:13:35,120

by pesquet and kimbrough but what that

5092

07:13:38,788 --> 07:13:36,798

will consist of whether we will press

5093

07:13:41,110 --> 07:13:38,798

ahead to complete this

5094

07:13:44,070 --> 07:13:41,120

uh power channel's work with this

5095

07:13:46,868 --> 07:13:44,080

particular array or leave it in a tie

5096

07:13:49,750 --> 07:13:46,878

down configuration and move ahead from

5097

07:13:52,628 --> 07:13:49,760

scratch with the next solar array for

5098

07:14:09,870 --> 07:13:52,638

the 4b power channel as a subject for

5099

07:14:18,150 --> 07:14:11,990

[Music]

5100

07:14:42,548 --> 07:14:20,230

hey firm egress your apfr tomorrow we're

5101
07:14:42,558 --> 07:14:47,430
bye

5102
07:14:47,440 --> 07:14:54,548
hey jenny i got 31 33 and 34 working 32

5103
07:14:54,558 --> 07:15:00,390
copy shane

5104
07:15:03,430 --> 07:15:01,830
the reason why we're pausing here is

5105
07:15:05,110 --> 07:15:03,440
we're trying to determine

5106
07:15:07,430 --> 07:15:05,120
whether we're going to unfold our rosa

5107
07:15:10,230 --> 07:15:07,440
or not so i will have next steps for you

5108
07:15:12,070 --> 07:15:10,240
both soon but it is uh the correct

5109
07:15:15,990 --> 07:15:12,080
direction that we've gotten those

5110
07:15:16,000 --> 07:15:19,670
all four of those bolts are in

5111
07:15:19,680 --> 07:15:37,990
three times

5112
07:15:38,000 --> 07:15:42,230
so looks like an expectation

5113
07:15:46,070 --> 07:15:44,868

could you repeat your last um we want to

5114

07:15:47,670 --> 07:15:46,080

make sure that you're in the right

5115

07:15:49,830 --> 07:15:47,680

position to do this

5116

07:16:04,788 --> 07:15:49,840

um we need you to release the final

5117

07:16:15,110 --> 07:16:06,310

we're going to have to have you get back

5118

07:16:15,120 --> 07:16:42,468

into my

5119

07:16:45,750 --> 07:16:44,070

that was a quick handover guys i'm back

5120

07:16:48,868 --> 07:16:45,760

with you tomorrow we were last talking

5121

07:16:50,868 --> 07:16:48,878

about releasing that r6 bolt

5122

07:16:52,788 --> 07:16:50,878

correction you can be in the apfr to do

5123

07:16:54,788 --> 07:16:52,798

that you can also be free float to do

5124

07:17:05,830 --> 07:16:54,798

that as long as you can actually release

5125

07:17:05,840 --> 07:17:26,468

i think it's better in your ps4 journey

5126
07:17:26,478 --> 07:17:42,230
oh

5127
07:17:45,910 --> 07:17:43,590
otherwise

5128
07:17:47,910 --> 07:17:45,920
and successfully release it without

5129
07:17:54,070 --> 07:17:47,920
being in the apfr that is also fine

5130
07:17:57,750 --> 07:17:55,750
yeah i copy jenny and i think it's

5131
07:17:58,948 --> 07:17:57,760
better than your ps4

5132
07:18:04,350 --> 07:17:58,958
copy let me know when you're ready for

5133
07:18:04,360 --> 07:18:49,830
[Music]

5134
07:18:49,840 --> 07:18:54,120
yes

5135
07:18:54,130 --> 07:19:03,910
[Music]

5136
07:19:03,920 --> 07:19:15,830
bravo 2 counter 2.

5137
07:19:20,788 --> 07:19:19,590
level two after two

5138
07:19:22,868 --> 07:19:20,798

good read back

5139

07:19:25,590 --> 07:19:22,878

you'll be releasing our six

5140

07:19:36,800 --> 07:19:25,600

18 to 20 turns and the bolt will spring

5141

07:19:36,810 --> 07:19:41,030

[Music]

5142

07:19:47,110 --> 07:19:43,830

five hours 40 minutes into the spacewalk

5143

07:19:54,948 --> 07:19:47,120

tomah pesquet using a pistol grip tool

5144

07:19:59,510 --> 07:19:58,070

one of the final steps before the irosa

5145

07:20:03,190 --> 07:19:59,520

solar array

5146

07:20:05,110 --> 07:20:03,200

can unfold it's basically folded in half

5147

07:20:08,230 --> 07:20:05,120

needs to unfold first

5148

07:20:10,868 --> 07:20:08,240

as they continue work to mount it to a

5149

07:20:13,030 --> 07:20:10,878

modification kit mounting bracket at the

5150

07:20:21,270 --> 07:20:13,040

base of the p6 solar array truss

5151

07:20:21,280 --> 07:20:34,708

okay

5152

07:20:42,788 --> 07:20:36,628

shane i'll take a glove inspection hop

5153

07:20:53,590 --> 07:20:47,030

gloves are good no change and dry hot

5154

07:20:56,628 --> 07:20:54,948

just kind of cracked up the crew like

5155

07:20:59,190 --> 07:20:56,638

bag there struggle there

5156

07:21:00,868 --> 07:20:59,200

you probably saw it

5157

07:21:04,790 --> 07:21:00,878

right now

5158

07:21:04,800 --> 07:21:08,708

[Music]

5159

07:21:15,510 --> 07:21:13,110

is released you can stow your pgt tomah

5160

07:21:21,670 --> 07:21:15,520

at this point we are going to push to

5161

07:21:25,510 --> 07:21:24,628

i go through the api

5162

07:21:27,590 --> 07:21:25,520

yes

5163

07:21:29,350 --> 07:21:27,600

now you egress the apfr

5164

07:21:31,270 --> 07:21:29,360

retract and sew the ingress aid to the

5165

07:21:35,270 --> 07:21:31,280

boot plate

5166

07:21:52,230 --> 07:21:36,510

all

5167

07:21:52,240 --> 07:22:00,440

okay

5168

07:22:00,450 --> 07:22:03,830

[Music]

5169

07:22:07,510 --> 07:22:05,510

can release your fair lead and you'll be

5170

07:22:10,708 --> 07:22:07,520

repositioning to the outboard side of

5171

07:22:16,150 --> 07:22:12,788

while you're there check that the soft

5172

07:22:30,230 --> 07:22:16,160

cap capture feature on your side is down

5173

07:22:30,240 --> 07:22:32,948

bracket

5174

07:22:40,070 --> 07:22:34,708

i'll take your next words jenny one from

5175

07:22:46,788 --> 07:22:41,510

you want more little thought to get it

5176
07:22:46,798 --> 07:22:56,788
a warning for you both when you're ready

5177
07:23:00,948 --> 07:22:58,628
keep clear of rotating irosa it's a

5178
07:23:03,270 --> 07:23:00,958
potential pinch point it looks like you

5179
07:23:06,548 --> 07:23:03,280
are both in a good config as long as

5180
07:23:08,628 --> 07:23:06,558
you're mindful of unfolding it uh shane

5181
07:23:10,628 --> 07:23:08,638
you can initiate and pivot i rosa to the

5182
07:23:13,110 --> 07:23:10,638
unfolded position we're looking to

5183
07:23:21,350 --> 07:23:13,120
engage the right alignment tab and right

5184
07:23:24,708 --> 07:23:22,948
okay tomah just supposed to push it or

5185
07:23:29,430 --> 07:23:24,718
do i kind of ride a little bit or what's

5186
07:23:32,468 --> 07:23:30,140
thank you

5187
07:23:34,468 --> 07:23:32,478
[Music]

5188
07:23:41,590 --> 07:23:34,478

manage it as much as possible you can

5189

07:23:41,600 --> 07:23:48,788

okay are you ready for that

5190

07:23:48,798 --> 07:24:00,708

make

5191

07:24:11,910 --> 07:24:02,310

oh yeah

5192

07:24:11,920 --> 07:24:36,480

very nicely for now

5193

07:24:36,490 --> 07:24:41,110

[Music]

5194

07:24:44,310 --> 07:24:42,788

there we go

5195

07:24:58,628 --> 07:24:44,320

yeah

5196

07:24:58,638 --> 07:25:04,150

position

5197

07:25:10,230 --> 07:25:07,110

slightly a lot missing line maybe there

5198

07:25:10,760 --> 07:25:10,240

you know we're just not pushed

5199

07:25:12,548 --> 07:25:10,770

close

5200

07:25:16,788 --> 07:25:12,558

[Applause]

5201
07:25:31,270 --> 07:25:18,548
you push your face over it all towards

5202
07:25:36,708 --> 07:25:34,948
it's hitting something in the back

5203
07:25:38,708 --> 07:25:36,718
and there's nothing back there but yeah

5204
07:25:39,830 --> 07:25:38,718
but i don't have a stable position they

5205
07:25:41,510 --> 07:25:39,840
tell me

5206
07:25:45,910 --> 07:25:41,520
okay

5207
07:25:45,920 --> 07:25:50,548
i'll move that away

5208
07:26:16,070 --> 07:25:53,350
are you going that way yeah sorry

5209
07:26:27,400 --> 07:26:17,110
towards

5210
07:26:27,410 --> 07:26:31,270
[Music]

5211
07:26:36,548 --> 07:26:33,270
it's not really a line

5212
07:26:38,708 --> 07:26:36,558
it hits the wall yeah wow there's

5213
07:26:40,310 --> 07:26:38,718

a half an inch missing so it needs to

5214

07:26:41,670 --> 07:26:40,320

come my way

5215

07:26:44,310 --> 07:26:41,680

yeah

5216

07:26:46,230 --> 07:26:44,320

let's go go away this way

5217

07:26:48,948 --> 07:26:46,240

um maybe we can take it out a little bit

5218

07:27:16,000 --> 07:26:50,788

do it that way

5219

07:27:22,070 --> 07:27:19,030

[Music]

5220

07:27:23,350 --> 07:27:22,080

okay go towards you okay and i can i can

5221

07:27:26,230 --> 07:27:23,360

pull it and i'll get a pretty good

5222

07:27:27,830 --> 07:27:26,240

position to pull towards me here

5223

07:27:29,350 --> 07:27:27,840

so if you're ready only 10 for three

5224

07:27:31,190 --> 07:27:29,360

years try

5225

07:27:32,830 --> 07:27:31,200

okay one

5226
07:27:35,270 --> 07:27:32,840
two

5227
07:27:44,468 --> 07:27:35,280
three just like an eighth of an inch

5228
07:27:44,478 --> 07:27:49,430
no it's not

5229
07:27:52,628 --> 07:27:51,110
still there's quite a bit missing do we

5230
07:27:54,230 --> 07:27:52,638
have some play on the

5231
07:27:56,708 --> 07:27:54,240
on the other side

5232
07:27:57,910 --> 07:27:56,718
we have about an inch and a half gap but

5233
07:27:59,750 --> 07:27:57,920
before the other one if that's what

5234
07:28:02,388 --> 07:27:59,760
you're asking yeah but can we can we

5235
07:28:03,830 --> 07:28:02,398
compress that properly in solid

5236
07:28:05,670 --> 07:28:03,840
uh i don't

5237
07:28:07,430 --> 07:28:05,680
know yeah yeah no i don't think we can

5238
07:28:08,708 --> 07:28:07,440

do anything about it i think that one

5239

07:28:11,510 --> 07:28:08,718

solid

5240

07:28:14,548 --> 07:28:11,520

because we're missing

5241

07:28:16,708 --> 07:28:14,558

like an eighth of an inch

5242

07:28:18,310 --> 07:28:16,718

i come look i'll show you

5243

07:28:19,830 --> 07:28:18,320

but i understand that's what we

5244

07:28:22,548 --> 07:28:19,840

understand we just got to come my way to

5245

07:28:23,990 --> 07:28:22,558

keep it in the hole

5246

07:28:26,230 --> 07:28:24,000

and and um

5247

07:28:28,628 --> 07:28:26,240

the other half of yarosa

5248

07:28:32,960 --> 07:28:28,638

remove it by any means

5249

07:28:37,510 --> 07:28:35,910

[Music]

5250

07:28:40,070 --> 07:28:37,520

there's a solid connection

5251
07:28:41,750 --> 07:28:40,080
where the uh roaches are already

5252
07:28:50,948 --> 07:28:41,760
yeah but they're on here there's about

5253
07:28:50,958 --> 07:28:57,030
rotating mechanism out there

5254
07:29:01,190 --> 07:28:58,388
yeah it looks like it should fit right

5255
07:29:02,548 --> 07:29:01,200
in there slide right in

5256
07:29:04,230 --> 07:29:02,558
it's only a hit

5257
07:29:05,670 --> 07:29:04,240
every time i think it's hitting on

5258
07:29:07,350 --> 07:29:05,680
something up here

5259
07:29:09,990 --> 07:29:07,360
oh no i know exactly where it's fitting

5260
07:29:11,990 --> 07:29:10,000
it's right in front of me okay so that's

5261
07:29:13,990 --> 07:29:12,000
a guide pin or whatever it's called that

5262
07:29:16,468 --> 07:29:14,000
we're trying to slide into that that on

5263
07:29:18,388 --> 07:29:16,478

that slot yeah it's

5264

07:29:20,468 --> 07:29:18,398

too much to the right and it's hitting

5265

07:29:22,788 --> 07:29:20,478

on the wall just a lot so that

5266

07:29:24,788 --> 07:29:22,798

it's quite if it's at least amazing of

5267

07:29:25,420 --> 07:29:24,798

an inch maybe the ground is a good view

5268

07:29:29,830 --> 07:29:25,430

fire

5269

07:29:33,590 --> 07:29:31,670

yeah we're seeing what you're seeing

5270

07:29:36,868 --> 07:29:33,600

shane and we're talking it we're

5271

07:29:40,548 --> 07:29:38,788

very fast

5272

07:29:42,788 --> 07:29:40,558

that you'll be seeing something shane we

5273

07:29:45,030 --> 07:29:42,798

can't see from your helmet cam in your

5274

07:29:52,548 --> 07:29:45,040

current position

5275

07:29:54,868 --> 07:29:52,558

we have a good view from shane's helmet

5276

07:29:56,708 --> 07:29:54,878

cam

5277

07:29:59,590 --> 07:29:56,718

so what you need to see on my side what

5278

07:30:01,990 --> 07:29:59,600

can i do to give you a good view

5279

07:30:15,910 --> 07:30:02,000

you need to tilt your head down so pitch

5280

07:30:15,920 --> 07:30:28,070

all right that's better we're looking

5281

07:30:32,948 --> 07:30:31,430

we can see the alignment feature on the

5282

07:30:37,990 --> 07:30:32,958

mod kit the mounting bracket but we

5283

07:30:38,000 --> 07:30:48,708

so what do i need to do to give you here

5284

07:30:51,750 --> 07:30:49,830

actually that's good that's helping

5285

07:30:54,548 --> 07:30:51,760

whatever you're doing now

5286

07:30:56,070 --> 07:30:54,558

we can now see it yeah

5287

07:30:58,070 --> 07:30:56,080

thanks tomas did you see what's

5288

07:31:01,190 --> 07:30:58,080

happening

5289

07:31:15,430 --> 07:31:01,200

the bracket alarming feature hitting the

5290

07:31:19,030 --> 07:31:17,590

we've tried to slide it as much as we

5291

07:31:21,510 --> 07:31:19,040

can to

5292

07:31:25,350 --> 07:31:21,520

the right on your view but see there's a

5293

07:31:25,360 --> 07:32:00,868

copy

5294

07:33:20,310 --> 07:32:02,388

guys we're talking about a plan down

5295

07:33:20,320 --> 07:33:24,468

behind you

5296

07:33:28,708 --> 07:33:26,948

sugar sun comes up uh what did it stay

5297

07:33:30,868 --> 07:33:28,718

maybe right now

5298

07:33:32,310 --> 07:33:30,878

could you move because

5299

07:33:35,670 --> 07:33:32,320

yeah yeah no worries

5300

07:33:38,628 --> 07:33:36,948

uh that's a great view that you're

5301
07:34:46,628 --> 07:33:38,638
giving us right now we're still talking

5302
07:34:50,788 --> 07:34:48,310
all right guys we have a forward plan

5303
07:34:53,510 --> 07:34:50,798
we're going to ask you to take pictures

5304
07:34:54,628 --> 07:34:53,520
of the misalignment um at a bunch of

5305
07:34:56,150 --> 07:34:54,638
different angles we really like the

5306
07:34:57,510 --> 07:34:56,160
angle you're giving us now tomorrow but

5307
07:34:59,910 --> 07:34:57,520
as many as you can manage we would

5308
07:35:01,990 --> 07:34:59,920
really appreciate and then at this point

5309
07:35:05,030 --> 07:35:02,000
we are going to refold i rosa and

5310
07:35:08,948 --> 07:35:05,040
re-drive r6 and leave it in a folded

5311
07:35:12,230 --> 07:35:10,468
but jenny um

5312
07:35:14,230 --> 07:35:12,240
copy this is going to be difficult for

5313
07:35:15,030 --> 07:35:14,240

me to take pictures to let go of one

5314

07:35:18,548 --> 07:35:15,040

hand

5315

07:35:20,788 --> 07:35:18,558

and it arrows out kind of opens up again

5316

07:35:21,990 --> 07:35:20,798

folds back again if i can hold it so

5317

07:35:23,670 --> 07:35:22,000

it's it's staying here because i'm

5318

07:35:26,150 --> 07:35:23,680

maintaining it with my two hands like

5319

07:35:27,590 --> 07:35:26,160

one on the mounting bracket

5320

07:35:35,620 --> 07:35:27,600

i could push it towards the mounting

5321

07:35:38,868 --> 07:35:37,270

[Music]

5322

07:35:41,670 --> 07:35:38,878

this is mission control houston

5323

07:35:43,910 --> 07:35:41,680

approaching the six hour mark into uh

5324

07:35:45,350 --> 07:35:43,920

today's spacewalk tomah pesquet and

5325

07:35:47,270 --> 07:35:45,360

shane kimbrough

5326
07:35:49,670 --> 07:35:47,280
have begun work

5327
07:35:51,110 --> 07:35:49,680
to attempt to unfold

5328
07:35:53,270 --> 07:35:51,120
the two halves

5329
07:35:55,430 --> 07:35:53,280
of the folded irosa

5330
07:35:56,150 --> 07:35:55,440
roll up solar array

5331
07:35:59,350 --> 07:35:56,160
that

5332
07:36:01,750 --> 07:35:59,360
has been mounted on a mounting bracket

5333
07:36:03,910 --> 07:36:01,760
on the base of the p6 truss structure

5334
07:36:05,590 --> 07:36:03,920
however they have encountered some

5335
07:36:06,628 --> 07:36:05,600
interference

5336
07:36:08,468 --> 07:36:06,638
with uh

5337
07:36:10,868 --> 07:36:08,478
a piece of equipment on that mounting

5338
07:36:14,070 --> 07:36:10,878

bracket and so the recommendation is to

5339

07:36:15,270 --> 07:36:14,080

refold the array back into its folded

5340

07:36:18,070 --> 07:36:15,280

position

5341

07:36:20,150 --> 07:36:18,080

and then bolt it in place to leave it

5342

07:36:22,468 --> 07:36:20,160

for further analysis

5343

07:36:24,388 --> 07:36:22,478

on a subsequent spacewalk

5344

07:36:27,030 --> 07:36:24,398

so we will not be completing all of the

5345

07:36:29,830 --> 07:36:27,040

work associated with the deployment of

5346

07:36:30,628 --> 07:36:29,840

this array today that was determined

5347

07:36:33,110 --> 07:36:30,638

after

5348

07:36:34,548 --> 07:36:33,120

spending almost an hour troubleshooting

5349

07:36:36,948 --> 07:36:34,558

a couple of issues with shane

5350

07:36:39,830 --> 07:36:36,958

kimbrough's suit one with a display

5351
07:36:43,430 --> 07:36:39,840
control module basically a data box on

5352
07:36:46,788 --> 07:36:43,440
his extra vehicular mobility unit suit

5353
07:36:49,830 --> 07:36:46,798
and a momentary spike in pressure in his

5354
07:36:51,750 --> 07:36:49,840
cooling uh mechanism called a sublimator

5355
07:36:53,190 --> 07:36:51,760
in his suit his suit has been

5356
07:36:55,990 --> 07:36:53,200
functioning perfectly since that

5357
07:36:57,830 --> 07:36:56,000
troubleshooting occurred but we lost

5358
07:37:00,150 --> 07:36:57,840
time in the process of doing that

5359
07:37:02,468 --> 07:37:00,160
troubleshooting and that cost the two

5360
07:37:04,468 --> 07:37:02,478
space walkers valuable time in being

5361
07:37:05,590 --> 07:37:04,478
able to complete all of the work for

5362
07:37:07,750 --> 07:37:05,600
today

5363
07:37:10,070 --> 07:37:07,760

when that work will be picked up will be

5364

07:37:15,510 --> 07:37:10,080

the subject of further discussions in

5365

07:37:19,590 --> 07:37:17,670

he makes my helmet light

5366

07:37:22,548 --> 07:37:19,600

and as i'm taking pictures and blocking

5367

07:37:25,430 --> 07:37:22,558

it

5368

07:37:26,948 --> 07:37:25,440

i think there's a single good one

5369

07:37:28,948 --> 07:37:26,958

we got good video though they can

5370

07:37:30,468 --> 07:37:28,958

definitely use that yeah

5371

07:37:32,788 --> 07:37:30,478

hey firm i'll mention again we had a

5372

07:37:35,190 --> 07:37:32,798

really good view from your helmet camta

5373

07:37:38,230 --> 07:37:35,200

let's step right here okay so

5374

07:37:40,070 --> 07:37:38,240

first there are pictures you need

5375

07:37:46,788 --> 07:37:40,080

by night with the

5376

07:37:50,708 --> 07:37:49,270

shane will also get you to look up if

5377

07:37:52,948 --> 07:37:50,718

you can understand you're maintaining

5378

07:37:55,830 --> 07:37:52,958

control right now if you can look up so

5379

07:38:00,468 --> 07:37:55,840

we got a better view of the hinge

5380

07:38:00,478 --> 07:38:13,360

okay

5381

07:38:13,370 --> 07:38:33,990

[Applause]

5382

07:38:34,000 --> 07:38:46,468

thank you

5383

07:38:50,708 --> 07:38:48,548

and shane we'll have you

5384

07:38:52,548 --> 07:38:50,718

pitch back again

5385

07:38:55,990 --> 07:38:52,558

looking back at the hinge

5386

07:39:25,430 --> 07:38:56,000

just pitch up a little bit

5387

07:39:30,788 --> 07:39:27,670

once again we've just crossed the six

5388

07:39:34,628 --> 07:39:30,798

hour mark into uh today's spacewalk

5389

07:39:36,708 --> 07:39:34,638

pesky and kimbrough attempted to unfold

5390

07:39:38,708 --> 07:39:36,718

the irosa solar array at the mounting

5391

07:39:41,430 --> 07:39:38,718

bracket at the base of the p6 solar ray

5392

07:39:42,948 --> 07:39:41,440

truss structure to its fully unfolded

5393

07:39:45,270 --> 07:39:42,958

configuration

5394

07:39:47,830 --> 07:39:45,280

but they have run into a bit of

5395

07:39:50,468 --> 07:39:47,840

interference with a mechanism

5396

07:39:52,868 --> 07:39:50,478

on that mounting bracket and as a result

5397

07:39:56,628 --> 07:39:52,878

the recommendation to the crew is to

5398

07:39:58,868 --> 07:39:56,638

refold the solar array and to bolt it in

5399

07:40:01,910 --> 07:39:58,878

place uh to leave it

5400

07:40:04,070 --> 07:40:01,920

for another day when we can evaluate not

5401
07:40:06,628 --> 07:40:04,080
only the timing of the next space walk

5402
07:40:22,150 --> 07:40:06,638
but exactly what we will

5403
07:40:22,160 --> 07:40:49,110
it's not unfolding oh yes there we go

5404
07:40:49,120 --> 07:40:58,210
towards you

5405
07:41:02,388 --> 07:41:00,640
[Applause]

5406
07:41:03,510 --> 07:41:02,398
[Music]

5407
07:41:06,948 --> 07:41:03,520
i don't

5408
07:41:23,270 --> 07:41:06,958
have anything to grab

5409
07:41:30,868 --> 07:41:24,788
all right we're lined up

5410
07:41:36,150 --> 07:41:33,750
and now we're gonna go drive

5411
07:41:37,830 --> 07:41:36,160
hey firm tomah you can use your apfr if

5412
07:42:59,110 --> 07:41:37,840
you need to let me know when you're

5413
07:43:03,270 --> 07:43:00,868

all right big picture next step

5414

07:43:05,270 --> 07:43:03,280

come on

5415

07:43:08,788 --> 07:43:05,280

big picture next steps for you guys i

5416

07:43:10,230 --> 07:43:08,798

see uh tomah getting in the apfr

5417

07:43:12,788 --> 07:43:10,240

shane we're going to have you hold that

5418

07:43:14,628 --> 07:43:12,798

position to help tomah until he can

5419

07:43:16,628 --> 07:43:14,638

drive r6 and then we're probably going

5420

07:43:18,868 --> 07:43:16,638

to have you torque down the m bolts that

5421

07:43:39,510 --> 07:43:18,878

you finger started previously you'll use

5422

07:43:39,520 --> 07:43:50,948

[Applause]

5423

07:43:54,628 --> 07:43:52,708

don't go back anymore bend your knees

5424

07:44:03,490 --> 07:43:54,638

and compared to your left

5425

07:44:03,500 --> 07:44:17,170

[Applause]

5426
07:44:20,830 --> 07:44:19,910

[Music]

5427
07:44:22,548 --> 07:44:20,840
to your

5428
07:44:23,670 --> 07:44:22,558
right

5429
07:44:24,868 --> 07:44:23,680
you kind of hit you're hitting it when

5430
07:44:26,388 --> 07:44:24,878
you come up

5431
07:44:28,388 --> 07:44:26,398
i don't know if i should have come up i

5432
07:44:45,430 --> 07:44:28,398
think they always pulling me that twists

5433
07:44:45,440 --> 07:44:50,310
it's spoiling me

5434
07:44:50,320 --> 07:45:30,230
what happened before

5435
07:45:30,240 --> 07:46:05,350
uh

5436
07:46:08,788 --> 07:46:07,510
now still killing me

5437
07:46:46,388 --> 07:46:08,798
i said

5438
07:46:46,398 --> 07:47:08,948

come on

5439

07:47:08,958 --> 07:47:13,590

being made in a song maybe

5440

07:47:23,670 --> 07:47:17,190

and uh put a waste out around that

5441

07:47:27,350 --> 07:47:25,510

six hours and eight minutes into uh

5442

07:47:28,388 --> 07:47:27,360

today's spacewalk a view of nasa

5443

07:47:31,910 --> 07:47:28,398

astronaut

5444

07:47:34,628 --> 07:47:31,920

shane kimbrough from an hd helmet camera

5445

07:47:37,510 --> 07:47:34,638

uh worn by uh european space agency

5446

07:47:39,030 --> 07:47:37,520

astronaut thomas pesquet

5447

07:47:41,670 --> 07:47:39,040

with

5448

07:47:43,510 --> 07:47:41,680

the challenges of today's spacewalk the

5449

07:47:47,270 --> 07:47:43,520

crew is in the process

5450

07:47:48,468 --> 07:47:47,280

of folding up and bolting into place

5451
07:47:52,468 --> 07:47:48,478
the first

5452
07:47:53,830 --> 07:47:52,478
irosa iss rollout solar array that was

5453
07:47:55,910 --> 07:47:53,840
removed

5454
07:47:57,670 --> 07:47:55,920
from a flight support structure on the

5455
07:47:59,510 --> 07:47:57,680
truss of the international space station

5456
07:48:02,310 --> 07:47:59,520
having been delivered

5457
07:48:05,430 --> 07:48:02,320
with one of two such arrays on the

5458
07:48:06,388 --> 07:48:05,440
spacex cargo dragon vehicle two weeks

5459
07:48:08,388 --> 07:48:06,398
ago

5460
07:48:11,430 --> 07:48:08,398
uh that was launched from the kennedy

5461
07:48:14,868 --> 07:48:11,440
space center in florida on the latest uh

5462
07:48:17,670 --> 07:48:14,878
spacex resupply mission to the station

5463
07:48:19,270 --> 07:48:17,680

this irosa array as it is called

5464

07:48:21,830 --> 07:48:19,280
was removed

5465

07:48:23,990 --> 07:48:21,840
from the flight support structure on the

5466

07:48:26,548 --> 07:48:24,000
truss of the station brought over to the

5467

07:48:28,468 --> 07:48:26,558
base of the p6 solar array

5468

07:48:32,388 --> 07:48:28,478
mast

5469

07:48:35,030 --> 07:48:32,398
and work began to unfold the array

5470

07:48:37,430 --> 07:48:35,040
however a small interference has

5471

07:48:39,270 --> 07:48:37,440
prevented a complete unfolding of the

5472

07:48:41,750 --> 07:48:39,280
array that's as far as we would have

5473

07:48:43,270 --> 07:48:41,760
gotten anyway with today's spacewalk

5474

07:48:45,830 --> 07:48:43,280
having lost time

5475

07:48:48,388 --> 07:48:45,840
to troubleshoot some minor issues with

5476
07:48:49,670 --> 07:48:48,398
shane kimbrough's spacesuit earlier in

5477
07:48:51,830 --> 07:48:49,680
the day

5478
07:48:53,910 --> 07:48:51,840
so uh the two crew members have folded

5479
07:48:55,830 --> 07:48:53,920
up the array and are bolting it in place

5480
07:48:58,708 --> 07:48:55,840
in a safe configuration

5481
07:49:02,310 --> 07:48:58,718
and where we go from here with the next

5482
07:49:05,670 --> 07:49:02,320
uh spacewalk in this series to get these

5483
07:49:07,990 --> 07:49:05,680
solar arrays installed and unfurled to

5484
07:49:10,150 --> 07:49:08,000
begin the augmentation of power to the

5485
07:49:12,150 --> 07:49:10,160
international space station will be a

5486
07:49:14,868 --> 07:49:12,160
subject of further discussion by mission

5487
07:49:22,150 --> 07:49:18,868
there is no urgency to get these arrays

5488
07:49:25,350 --> 07:49:22,160

mounted and unfolded and activated

5489

07:49:27,430 --> 07:49:25,360

these arrays are designed to augment the

5490

07:49:30,230 --> 07:49:27,440

current power supply of the existing

5491

07:49:32,070 --> 07:49:30,240

legacy solar arrays not to replace them

5492

07:49:34,150 --> 07:49:32,080

the station is operating in perfect

5493

07:49:36,868 --> 07:49:34,160

fashion with the electrical output

5494

07:49:40,468 --> 07:49:36,878

currently being generated by the station

5495

07:49:43,830 --> 07:49:40,478

the augmentation is required to handle

5496

07:49:46,388 --> 07:49:43,840

the future loads

5497

07:49:47,910 --> 07:49:46,398

both science utilization and additional

5498

07:49:49,830 --> 07:49:47,920

modules to be launched to the

5499

07:50:07,270 --> 07:49:49,840

international space station in the

5500

07:50:13,350 --> 07:50:08,868

good

5501
07:50:15,510 --> 07:50:13,900
sure

5502
07:50:34,868 --> 07:50:15,520
[Applause]

5503
07:50:37,990 --> 07:50:36,948
deeper

5504
07:50:43,830 --> 07:50:38,000
you know

5505
07:50:43,840 --> 07:50:49,130
got one foot

5506
07:50:49,140 --> 07:50:54,628
[Applause]

5507
07:50:59,510 --> 07:50:56,388
once again uh

5508
07:51:01,030 --> 07:50:59,520
the two spacewalkers uh were able to uh

5509
07:51:03,830 --> 07:51:01,040
soft dock

5510
07:51:06,468 --> 07:51:03,840
the irosa rollout solar array to the

5511
07:51:08,948 --> 07:51:06,478
mounting bracket at the base of the p6

5512
07:51:12,150 --> 07:51:08,958
solar array truss structure

5513
07:51:13,030 --> 07:51:12,160

and then they made an attempt to unfold

5514

07:51:15,590 --> 07:51:13,040

the two

5515

07:51:17,750 --> 07:51:15,600

halves of the boom if you will for the

5516

07:51:20,468 --> 07:51:17,760

solar array they were unable to

5517

07:51:23,190 --> 07:51:20,478

completely unfold and line up the bolts

5518

07:51:26,070 --> 07:51:23,200

so after using some time to troubleshoot

5519

07:51:27,590 --> 07:51:26,080

that issue they uh folded the array back

5520

07:51:28,788 --> 07:51:27,600

and you can see that

5521

07:51:30,788 --> 07:51:28,798

in the

5522

07:51:32,708 --> 07:51:30,798

view from a truss camera on the

5523

07:51:34,310 --> 07:51:32,718

international space station

5524

07:51:36,708 --> 07:51:34,320

shane kimbrough on the left tomah

5525

07:51:38,468 --> 07:51:36,718

pesquet on the right and they're bolting

5526
07:51:41,350 --> 07:51:38,478
the array in place

5527
07:51:43,110 --> 07:51:41,360
to put it in a safe configuration

5528
07:51:55,030 --> 07:51:43,120
so that they can attend to it on a

5529
07:51:59,350 --> 07:51:57,830
i am ready for settings journey

5530
07:52:01,270 --> 07:51:59,360
alpha 3

5531
07:52:05,510 --> 07:52:01,280
clockwise 2

5532
07:52:11,670 --> 07:52:08,230
alpha 3

5533
07:52:15,190 --> 07:52:12,868
a7

5534
07:52:20,548 --> 07:52:15,200
external number 6

5535
07:52:20,558 --> 07:52:34,468
there's a line here

5536
07:53:17,430 --> 07:52:36,190
three

5537
07:53:21,670 --> 07:53:19,590
it's a green light

5538
07:53:22,788 --> 07:53:21,680

four point eight for the torch and

5539

07:53:26,150 --> 07:53:22,798

nineteen

5540

07:53:28,468 --> 07:53:26,160

thirty more eight eight turn jenny

5541

07:53:30,150 --> 07:53:28,478

copy green light good torque and 19

5542

07:53:46,070 --> 07:53:30,160

decimal eight

5543

07:53:46,080 --> 07:53:58,070

uh

5544

07:54:01,670 --> 07:53:59,830

thomas

5545

07:54:04,070 --> 07:54:01,680

i'm going to get a glove inspection hack

5546

07:54:07,110 --> 07:54:04,080

check and gauntlet check from you

5547

07:54:09,830 --> 07:54:07,120

and shane now that i rosa that hinge

5548

07:54:12,310 --> 07:54:09,840

bolt is secure you can ready your pgt

5549

07:54:16,548 --> 07:54:12,320

and will drive the m bolts to torque

5550

07:54:26,788 --> 07:54:18,948

it was a good happiest drive and the

5551
07:54:26,798 --> 07:54:37,350
copy come on

5552
07:54:41,190 --> 07:54:38,788
all right just give me a second on the

5553
07:54:46,628 --> 07:54:41,200
pgt tunic

5554
07:54:50,230 --> 07:54:48,310
so ma for you now that we've gotten

5555
07:54:54,150 --> 07:54:50,240
those good checks we are going to send

5556
07:54:56,388 --> 07:54:54,160
you to the y cable connector ends and to

5557
07:54:58,628 --> 07:54:56,398
get ourselves in a good config

5558
07:55:05,670 --> 07:54:58,638
to leave these cables out here we need

5559
07:55:05,680 --> 07:55:11,430
it works

5560
07:55:16,310 --> 07:55:13,590
this is mission control houston six

5561
07:55:18,708 --> 07:55:16,320
hours 16 minutes into the space walk

5562
07:55:20,548 --> 07:55:18,718
today by pesquet and kimbrough they're

5563
07:55:23,590 --> 07:55:20,558

in the process of driving uh the final

5564

07:55:26,788 --> 07:55:23,600

bolts to structurally secure

5565

07:55:27,670 --> 07:55:26,798

the irosa roll-up solar roll-out solar

5566

07:55:29,110 --> 07:55:27,680

array

5567

07:55:31,510 --> 07:55:29,120

to the

5568

07:55:33,110 --> 07:55:31,520

mounting bracket at the base of the p-6

5569

07:55:35,270 --> 07:55:33,120

solar array truss structure you see

5570

07:55:36,230 --> 07:55:35,280

those huge solar arrays

5571

07:55:37,590 --> 07:55:36,240

that are

5572

07:55:39,830 --> 07:55:37,600

deployed

5573

07:55:41,910 --> 07:55:39,840

out of the top of your screen

5574

07:55:44,310 --> 07:55:41,920

on this view from an external uh truss

5575

07:55:47,350 --> 07:55:44,320

camera on the station

5576

07:55:49,830 --> 07:55:47,360

the actual uh unfolding of the two

5577

07:55:53,590 --> 07:55:49,840

halves of the solar array boom

5578

07:55:55,830 --> 07:55:53,600

and its ultimate unfurling of the array

5579

07:55:57,830 --> 07:55:55,840

after it's electrically mated to the

5580

07:55:59,670 --> 07:55:57,840

integrated electronics assembly on the

5581

07:56:01,910 --> 07:55:59,680

international space station is forward

5582

07:56:05,670 --> 07:56:01,920

work that will be left to a future

5583

07:56:10,868 --> 07:56:08,548

number five clockwise

5584

07:56:14,868 --> 07:56:10,878

correction shane we're changing the

5585

07:56:14,878 --> 07:56:20,788

alpha six clockwise two

5586

07:56:26,070 --> 07:56:23,590

happy alpha six

5587

07:56:29,510 --> 07:56:26,080

localized

5588

07:56:29,520 --> 07:56:31,590

that's firm

5589

07:56:36,070 --> 07:56:34,310

happy we understand these bolts have

5590

07:56:39,270 --> 07:56:36,080

been finger started but nominally we

5591

07:56:41,990 --> 07:56:39,280

would expect 11 to 13 turns

5592

07:56:52,388 --> 07:56:42,000

we're driving them all to hard stop with

5593

07:57:07,510 --> 07:56:56,310

and then jenny i'm at the y cables

5594

07:57:11,350 --> 07:57:09,750

all right alpha six

5595

07:57:15,190 --> 07:57:11,360

and

5596

07:57:15,200 --> 07:57:46,230

set you firm

5597

07:57:52,310 --> 07:57:47,990

okay

5598

07:57:57,030 --> 07:57:52,320

a low torque message on the tgt there

5599

07:57:57,040 --> 07:58:03,590

before eleven point nine six turns

5600

07:58:08,388 --> 07:58:05,190

cubby shannon which bolt was that a

5601
07:58:11,750 --> 07:58:08,398
green light there now

5602
07:58:16,150 --> 07:58:11,760
34. that was m34 and that was a low

5603
07:58:19,750 --> 07:58:18,230
copy i'm checking for you

5604
07:58:22,230 --> 07:58:19,760
and tomorrow

5605
07:58:24,150 --> 07:58:22,240
i can give you uh your cable connections

5606
07:58:28,468 --> 07:58:24,160
you can start when you're ready

5607
07:58:31,350 --> 07:58:28,478
you'll be mating p9 alpha to j9 alpha

5608
07:58:36,500 --> 07:58:31,360
and likewise p23 alpha is going to go to

5609
07:58:36,510 --> 07:58:48,830
[Music]

5610
07:58:48,840 --> 07:58:59,110
outside that's a good read back tomorrow

5611
07:59:02,788 --> 07:59:00,468
afternoon

5612
07:59:06,708 --> 07:59:02,798
i know if i connected

5613
07:59:06,718 --> 07:59:12,788

do you get the same message on m33

5614

07:59:38,250 --> 07:59:15,030

12.08

5615

07:59:38,260 --> 07:59:44,628

[Music]

5616

07:59:44,638 --> 07:59:52,070

copy good work tomorrow

5617

07:59:58,150 --> 07:59:55,270

you got a green light on m32

5618

08:00:00,708 --> 07:59:58,160

if they're 11.5 turns

5619

08:00:07,670 --> 08:00:00,718

copy green light on m34

5620

08:00:11,030 --> 08:00:09,270

and shane i can confirm now we're going

5621

08:00:12,708 --> 08:00:11,040

to need a green light on all of those

5622

08:00:31,590 --> 08:00:12,718

bolts so we might have to go back to

5623

08:00:38,310 --> 08:00:35,750

you get a torque 1.6 turns on

5624

08:00:41,110 --> 08:00:38,320

m33 with the green lights

5625

08:00:43,590 --> 08:00:41,120

24 torque yes

5626
08:00:47,910 --> 08:00:43,600
green light on m33 an additional 1.6

5627
08:00:58,468 --> 08:00:49,270
come on next steps for you coming

5628
08:01:02,468 --> 08:01:00,948
so you might have about half a turn on

5629
08:01:03,430 --> 08:01:02,478
m34

5630
08:01:05,910 --> 08:01:03,440
nice

5631
08:01:10,230 --> 08:01:05,920
copy green light half a turn m34 just

5632
08:01:10,240 --> 08:01:44,310
okay

5633
08:01:48,468 --> 08:01:45,990
all right let's work through that one

5634
08:01:52,960 --> 08:01:48,478
let me try it again

5635
08:02:06,948 --> 08:01:54,708
[Music]

5636
08:02:06,958 --> 08:02:23,590
foreign

5637
08:02:43,750 --> 08:02:25,270
tough angle on this one

5638
08:02:43,760 --> 08:02:49,350

m31 with about another quarter turn

5639

08:02:49,360 --> 08:03:06,468

copy shane

5640

08:03:11,270 --> 08:03:09,350

this is an another point for you toma

5641

08:03:13,350 --> 08:03:11,280

and shane we're just thinking up making

5642

08:03:15,110 --> 08:03:13,360

sure i have your next steps understand

5643

08:03:16,388 --> 08:03:15,120

you're standing by

5644

08:03:20,388 --> 08:03:16,398

for me to tell you what to do but i'll

5645

08:03:25,090 --> 08:03:22,868

you get some cables

5646

08:03:31,750 --> 08:03:25,100

on the other side

5647

08:03:31,760 --> 08:03:55,270

second

5648

08:03:59,110 --> 08:03:56,830

behind me yeah it's

5649

08:04:01,350 --> 08:03:59,120

um actually to your left along your left

5650

08:04:02,310 --> 08:04:01,360

leg it's nice looking again

5651
08:04:03,830 --> 08:04:02,320
if

5652
08:04:05,510 --> 08:04:03,840
you'll see it i think you're just right

5653
08:04:07,990 --> 08:04:05,520
on the way

5654
08:04:09,990 --> 08:04:08,000
so it goes through the corner

5655
08:04:11,270 --> 08:04:10,000
where your fair lead is i think maybe i

5656
08:04:14,070 --> 08:04:11,280
didn't very much have just caught on

5657
08:04:15,750 --> 08:04:14,080
something it's not cute

5658
08:04:19,830 --> 08:04:15,760
thank you

5659
08:04:25,110 --> 08:04:21,750
shea and i can confirm that you'll be

5660
08:04:26,868 --> 08:04:25,120
headed out board to connect your

5661
08:04:32,468 --> 08:04:26,878
y cables to one another to leave us in a

5662
08:04:37,190 --> 08:04:35,190
anything you won't need any

5663
08:04:40,388 --> 08:04:37,200

just this time come on i need one more

5664

08:04:49,650 --> 08:04:40,398
minute to confirm

5665

08:04:49,660 --> 08:05:05,590
[Music]

5666

08:05:09,830 --> 08:05:07,430
you can head to the cable bag

5667

08:05:15,430 --> 08:05:09,840
you'll be retrieving the nzgl caps and

5668

08:05:15,440 --> 08:05:20,708
okay

5669

08:05:26,548 --> 08:05:24,150
standing by for your connection today

5670

08:05:28,070 --> 08:05:26,558
copy shane

5671

08:05:32,070 --> 08:05:28,080
you'll be mating

5672

08:05:39,030 --> 08:05:32,080
p7 alpha to j7 alpha

5673

08:05:43,510 --> 08:05:40,868
okay let me look for this and i'll

5674

08:05:43,520 --> 08:05:48,230
creepy though you're saying copy

5675

08:05:48,240 --> 08:05:54,788
okay i have

5676
08:06:01,990 --> 08:05:57,590
a21 and

5677
08:06:02,000 --> 08:06:10,628
copy

5678
08:06:10,638 --> 08:06:31,350
shane

5679
08:06:31,360 --> 08:06:34,868
that's right

5680
08:06:39,430 --> 08:06:36,548
put all of them on the same keeper and

5681
08:06:40,868 --> 08:06:39,440
take the cat keeper with me

5682
08:07:38,460 --> 08:06:40,878
yep you can do that tomorrow we just

5683
08:07:38,470 --> 08:07:55,350
[Music]

5684
08:08:00,708 --> 08:07:57,430
crappy shane around 45 seconds still

5685
08:08:07,270 --> 08:08:02,868
okay that one's done jenny and the next

5686
08:08:09,030 --> 08:08:07,280
one is seven p7 the g7 off

5687
08:08:12,788 --> 08:08:09,040
hey firm we're looking for p7 alpha to

5688
08:08:18,150 --> 08:08:16,310

p7 out for the g7 output copy

5689

08:08:20,948 --> 08:08:18,160

everything looks good

5690

08:08:35,910 --> 08:08:20,958

no side note pins

5691

08:08:35,920 --> 08:09:05,350

short handover

5692

08:09:11,640 --> 08:09:07,350

about the one up here

5693

08:09:18,230 --> 08:09:13,270

[Music]

5694

08:09:18,240 --> 08:09:22,230

let me me get this one i'll just

5695

08:09:28,868 --> 08:09:23,430

um

5696

08:09:33,030 --> 08:09:30,468

back with you after the handrail you

5697

08:09:34,788 --> 08:09:33,040

have my right

5698

08:09:36,708 --> 08:09:34,798

left on the keeper

5699

08:09:39,270 --> 08:09:36,718

i'll release the ap from the bag and go

5700

08:09:40,200 --> 08:09:39,280

back up with the keyboard those four and

5701
08:09:42,708 --> 08:09:40,210
the gl cap

5702
08:09:44,310 --> 08:09:42,718
[Applause]

5703
08:09:47,750 --> 08:09:44,320
and break break

5704
08:09:49,830 --> 08:09:47,760
we're going to stop your capping ops now

5705
08:09:52,388 --> 08:09:49,840
we are going to pick up the crew lock

5706
08:09:56,070 --> 08:09:52,398
bags and the ptt's and head inboard we

5707
08:09:56,080 --> 08:10:02,388
medox limit

5708
08:10:06,388 --> 08:10:03,990
all right so

5709
08:10:09,670 --> 08:10:06,398
thank you still

5710
08:10:23,350 --> 08:10:09,680
on the cap keeper

5711
08:10:23,360 --> 08:10:36,468
the side of the bag

5712
08:10:36,478 --> 08:10:45,500
um

5713
08:10:45,510 --> 08:10:50,948

[Music]

5714

08:10:57,990 --> 08:10:52,388

okay

5715

08:10:58,000 --> 08:11:03,430

ready to go inboard

5716

08:11:06,310 --> 08:11:04,868

happy tomorrow

5717

08:11:08,708 --> 08:11:06,320

we'll have you

5718

08:11:10,868 --> 08:11:08,718

stop at the fse to pick up the crewlock

5719

08:11:13,430 --> 08:11:10,878

bag and the spare pgt

5720

08:11:15,590 --> 08:11:13,440

and then continue import and shane

5721

08:11:17,990 --> 08:11:15,600

understand you're currently

5722

08:11:21,190 --> 08:11:18,000

getting the crew lock bag at the mod kit

5723

08:11:21,200 --> 08:11:24,830

correct

5724

08:11:28,230 --> 08:11:26,070

okay you're right you're good to go

5725

08:11:33,050 --> 08:11:28,240

shane i'm gonna go ahead and yep you'll

5726
08:12:06,150 --> 08:11:59,350
[Music]

5727
08:12:06,160 --> 08:12:30,900
yes

5728
08:12:30,910 --> 08:12:35,270
[Music]

5729
08:12:35,280 --> 08:12:52,628
coffee shane

5730
08:12:57,590 --> 08:12:54,388
shane you'll be headed straight back to

5731
08:13:12,868 --> 08:12:57,600
the airlock again tomah

5732
08:13:34,628 --> 08:13:14,468
and reminder you'll be picking up your

5733
08:13:55,510 --> 08:13:36,628
you can see your green hill here green

5734
08:13:55,520 --> 08:14:01,430
good words come on

5735
08:14:01,440 --> 08:14:19,110
um

5736
08:14:23,670 --> 08:14:21,030
this is mission control houston six

5737
08:14:26,708 --> 08:14:23,680
hours 35 minutes and counting in today's

5738
08:14:30,708 --> 08:14:26,718

space walk by pesquet and kimbrough

5739

08:14:33,270 --> 08:14:30,718

they now have left the irosa rollout

5740

08:14:34,948 --> 08:14:33,280

solar array in a safe configuration

5741

08:14:38,388 --> 08:14:34,958

on the mounting bracket at the base of

5742

08:14:40,868 --> 08:14:38,398

the p6 solar array truss structure

5743

08:14:43,270 --> 08:14:40,878

and uh will now begin to make their way

5744

08:14:44,868 --> 08:14:43,280

back to the quest airlock collecting

5745

08:14:47,510 --> 08:14:44,878

tools and tethers

5746

08:14:49,430 --> 08:14:47,520

and making inventory of all of the items

5747

08:14:51,990 --> 08:14:49,440

they took outside with them

5748

08:14:53,670 --> 08:14:52,000

for this first spacewalk in support of

5749

08:14:55,670 --> 08:14:53,680

the augmentation

5750

08:15:31,430 --> 08:14:55,680

of the power system on the international

5751
08:15:36,468 --> 08:15:33,910
my greenhouse is on my red wheel and

5752
08:15:38,708 --> 08:15:36,478
both are unlocked

5753
08:15:40,468 --> 08:15:38,718
copy that is a good config shane you can

5754
08:16:04,308 --> 08:15:40,478
continue your translation inboard you

5755
08:16:04,318 --> 08:16:57,030
bye

5756
08:17:02,388 --> 08:16:59,190
i'm crossing over to the

5757
08:17:06,230 --> 08:17:04,070
you'll be picking up the crewlock bag

5758
08:17:15,350 --> 08:17:06,240
and spare pgt and stowing them on your

5759
08:17:19,350 --> 08:17:16,868
are red on that handrail too i think it

5760
08:17:22,948 --> 08:17:19,360
goes to the crewlock bag

5761
08:17:27,190 --> 08:17:25,990
i think you're this better

5762
08:17:36,070 --> 08:17:27,200
uh

5763
08:17:36,080 --> 08:17:46,628

is it

5764

08:17:50,468 --> 08:17:48,548

there's a couple twists in there

5765

08:17:52,628 --> 08:17:50,478

this is mission control houston uh

5766

08:17:55,110 --> 08:17:52,638

approaching the six hour 40 minute mark

5767

08:17:57,190 --> 08:17:55,120

in the space walk just to recap

5768

08:18:00,150 --> 08:17:57,200

shane kimbrough and tomah pesquet placed

5769

08:18:03,910 --> 08:18:00,160

their spacesuits on internal battery

5770

08:18:06,070 --> 08:18:03,920

power at 7 11 am central time 8 11 a.m

5771

08:18:09,030 --> 08:18:06,080

eastern time today to begin

5772

08:18:10,830 --> 08:18:09,040

the 239th spacewalk in support of space

5773

08:18:14,070 --> 08:18:10,840

station assembly maintenance and

5774

08:18:15,030 --> 08:18:14,080

upgrades the focus for today was the

5775

08:18:17,910 --> 08:18:15,040

first

5776
08:18:18,788 --> 08:18:17,920
in an ongoing series of spacewalks

5777
08:18:21,750 --> 08:18:18,798
to

5778
08:18:25,430 --> 08:18:21,760
install and deploy and activate

5779
08:18:27,670 --> 08:18:25,440
new solar arrays called irosas

5780
08:18:29,910 --> 08:18:27,680
roll out solar arrays

5781
08:18:32,788 --> 08:18:29,920
to augment uh six of the eight power

5782
08:18:36,708 --> 08:18:32,798
channels on the international outpost

5783
08:18:42,388 --> 08:18:40,628
to uh prepare uh the first of the irosa

5784
08:18:44,150 --> 08:18:42,398
arrays and to get it out of a flight

5785
08:18:45,830 --> 08:18:44,160
support structure

5786
08:18:47,990 --> 08:18:45,840
on the truss of the international space

5787
08:18:49,990 --> 08:18:48,000
station where it was delivered

5788
08:18:52,230 --> 08:18:50,000

after its launch two weeks ago on a

5789

08:18:55,590 --> 08:18:52,240

spacex cargo vehicle from the kennedy

5790

08:18:59,110 --> 08:18:57,910

about three hours into the space walk a

5791

08:19:01,270 --> 08:18:59,120

couple of

5792

08:19:02,388 --> 08:19:01,280

minor problems were detected with shane

5793

08:19:05,670 --> 08:19:02,398

kimbrough's

5794

08:19:09,110 --> 08:19:05,680

spacesuit one was the loss of data on a

5795

08:19:11,190 --> 08:19:09,120

display controlled unit that provides uh

5796

08:19:13,430 --> 08:19:11,200

space walking astronauts

5797

08:19:16,308 --> 08:19:13,440

insight into the health

5798

08:19:18,230 --> 08:19:16,318

of the their suits systems

5799

08:19:21,190 --> 08:19:18,240

he was directed to go back into the

5800

08:19:23,270 --> 08:19:21,200

airlock put himself on an umbilical and

5801
08:19:25,830 --> 08:19:23,280
restart the display unit

5802
08:19:26,788 --> 08:19:25,840
and it has been operating just fine ever

5803
08:19:29,430 --> 08:19:26,798
since

5804
08:19:32,230 --> 08:19:29,440
the other issue that was addressed but

5805
08:19:35,270 --> 08:19:32,240
cost the crew members time outside

5806
08:19:38,708 --> 08:19:35,280
was a momentary spike in pressure

5807
08:19:41,430 --> 08:19:38,718
readings in kimbrough's suit sublimator

5808
08:19:44,230 --> 08:19:41,440
a cooling unit for his spacesuit

5809
08:19:46,388 --> 08:19:44,240
but it also has stabilized and

5810
08:19:48,948 --> 08:19:46,398
caused no further problems during the

5811
08:19:51,110 --> 08:19:48,958
course of today's excursion

5812
08:19:53,350 --> 08:19:51,120
but all the time that was lost dealing

5813
08:19:56,868 --> 08:19:53,360

with kimbrough's suit

5814

08:19:59,670 --> 08:19:56,878

resulted in the first of these two irosa

5815

08:20:01,270 --> 08:19:59,680

solar array

5816

08:20:03,270 --> 08:20:01,280

uh units

5817

08:20:05,190 --> 08:20:03,280

being removed from the flight support

5818

08:20:09,110 --> 08:20:05,200

system and moved over to the base of the

5819

08:20:11,350 --> 08:20:09,120

p6 truss to a mounting bracket it was

5820

08:20:14,628 --> 08:20:11,360

installed on the mounting bracket the

5821

08:20:17,110 --> 08:20:14,638

two crew members tried to unfold

5822

08:20:19,270 --> 08:20:17,120

the boom basically the array itself

5823

08:20:21,430 --> 08:20:19,280

which is folded in half

5824

08:20:22,628 --> 08:20:21,440

but they couldn't unfold it to its full

5825

08:20:24,948 --> 08:20:22,638

extension

5826
08:20:27,590 --> 08:20:24,958
because of an interference problem with

5827
08:20:30,230 --> 08:20:27,600
a mechanism on that mounting bracket and

5828
08:20:32,388 --> 08:20:30,240
so they were directed to refold it and

5829
08:20:33,990 --> 08:20:32,398
bolt it in place in a safe configuration

5830
08:20:36,230 --> 08:20:34,000
which is where they're going to leave it

5831
08:20:38,468 --> 08:20:36,240
for today

5832
08:20:39,590 --> 08:20:38,478
there will be discussions over the next

5833
08:20:41,990 --> 08:20:39,600
day or so

5834
08:20:44,468 --> 08:20:42,000
by mission managers and spacewalking

5835
08:20:47,670 --> 08:20:44,478
engineers as to what uh the next course

5836
08:20:50,150 --> 08:20:47,680
of action will be whether we press ahead

5837
08:20:53,910 --> 08:20:50,160
with the completion of this particular

5838
08:20:57,750 --> 08:20:53,920

irosa arrays installation and activation

5839

08:20:59,990 --> 08:20:57,760

maybe move on perhaps to the next array

5840

08:21:03,190 --> 08:21:00,000

that goes on the opposite side of the p6

5841

08:21:06,548 --> 08:21:03,200

truss for the 4b power channel or

5842

08:21:08,468 --> 08:21:06,558

whether we defer this work to a future

5843

08:21:11,910 --> 08:21:08,478

spacewalk altogether

5844

08:21:13,590 --> 08:21:11,920

it is not an urgent concern for nasa at

5845

08:21:16,150 --> 08:21:13,600

this point in time

5846

08:21:18,948 --> 08:21:16,160

these uh irosa arrays are designed to

5847

08:21:21,350 --> 08:21:18,958

augment not replace any of the existing

5848

08:21:24,150 --> 08:21:21,360

arrays which are functioning just fine

5849

08:21:27,190 --> 08:21:24,160

uh providing all of the power required

5850

08:21:28,708 --> 08:21:27,200

for station systems the irosa arrays are

5851
08:21:32,070 --> 08:21:28,718
designed to add

5852
08:21:34,230 --> 08:21:32,080
each of the new six irosa arrays are

5853
08:21:36,948 --> 08:21:34,240
designed to add about 20 kilowatts of

5854
08:21:39,510 --> 08:21:36,958
power to the existing power output for

5855
08:21:42,150 --> 08:21:39,520
station systems thus putting the station

5856
08:21:44,788 --> 08:21:42,160
in a better posture electrically to

5857
08:21:46,468 --> 08:21:44,798
support new science payloads and new

5858
08:22:20,948 --> 08:21:46,478
modules that will be launched to the

5859
08:22:20,958 --> 08:22:41,350
hey

5860
08:22:41,360 --> 08:23:15,540
um

5861
08:23:15,550 --> 08:23:18,948
[Music]

5862
08:23:18,958 --> 08:23:47,270
signal and then i'm gonna suck

5863
08:23:50,388 --> 08:23:49,270

shane when you are back at the airlock

5864

08:23:52,708 --> 08:23:50,398

reminder

5865

08:23:55,190 --> 08:23:52,718

that adjustable on the thermal cover is

5866

08:23:56,070 --> 08:23:55,200

still there and we will have you put

5867

08:23:58,150 --> 08:23:56,080

your

5868

08:24:02,388 --> 08:23:58,160

waste tether on the airlock drain

5869

08:24:20,468 --> 08:24:04,708

kevin

5870

08:24:20,478 --> 08:24:24,308

we're checking for you shane

5871

08:24:24,318 --> 08:24:33,110

okay

5872

08:24:39,670 --> 08:24:34,868

yeah shane you'll be bringing that

5873

08:24:39,680 --> 08:24:45,270

okay

5874

08:24:45,280 --> 08:25:22,070

yes

5875

08:25:46,160 --> 08:25:23,990

here are the adjustable thermal cover

5876

08:25:46,170 --> 08:25:49,670

[Music]

5877

08:26:07,030 --> 08:25:52,150

okay that's the scope bgt

5878

08:26:13,110 --> 08:26:09,350

each other which is to the d-ring

5879

08:26:16,628 --> 08:26:14,468

copy shane

5880

08:26:19,270 --> 08:26:16,638

come on make sure on your way inboard

5881

08:26:43,780 --> 08:26:19,280

you press the inboard port and starboard

5882

08:26:43,790 --> 08:27:02,708

[Music]

5883

08:27:02,718 --> 08:27:09,270

bye

5884

08:27:15,990 --> 08:27:11,270

but looking for the inboard most brake

5885

08:27:16,000 --> 08:27:21,830

the pedal choice the outboard or not

5886

08:27:29,350 --> 08:27:23,670

just the inboard pedals but on both the

5887

08:27:29,360 --> 08:27:45,270

okay

5888

08:27:54,230 --> 08:27:48,708

attached to the airlock

5889

08:27:59,100 --> 08:27:56,070

it will be pressed

5890

08:28:02,388 --> 08:27:59,110

on the reports to the cards

5891

08:29:01,590 --> 08:28:02,398

[Music]

5892

08:29:07,030 --> 08:29:05,110

hey firm so our next steps are for

5893

08:29:08,948 --> 08:29:07,040

we see that double uh

5894

08:29:11,190 --> 08:29:08,958

brake release thank you toma you can

5895

08:29:13,110 --> 08:29:11,200

continue inboard to the airlock our next

5896

08:29:15,670 --> 08:29:13,120

steps are to do the

5897

08:29:27,370 --> 08:29:15,680

tether reconfig once tomah is back at

5898

08:29:32,868 --> 08:29:29,030

[Applause]

5899

08:29:40,330 --> 08:29:32,878

i see my green hook here

5900

08:29:40,340 --> 08:29:46,230

[Music]

5901
08:29:49,910 --> 08:29:48,070
you are translating all the way back to

5902
08:29:51,830 --> 08:29:49,920
the airlock and your anchor hooks will

5903
08:29:54,628 --> 08:29:51,840
stay at this location we are

5904
08:29:56,708 --> 08:29:54,638
reconfiguring back at the airlock

5905
08:30:01,030 --> 08:29:56,718
on the

5906
08:30:05,590 --> 08:30:03,830
okay and from what i see here

5907
08:30:06,788 --> 08:30:05,600
our things that are wrapped around each

5908
08:30:10,708 --> 08:30:06,798
other

5909
08:30:13,960 --> 08:30:12,308
yeah i thought they cleared at the very

5910
08:30:15,670 --> 08:30:13,970
end but i can't tell you that

5911
08:30:22,150 --> 08:30:15,680
[Applause]

5912
08:30:26,230 --> 08:30:23,750
yeah

5913
08:30:30,910 --> 08:30:26,240

so we are able to clear that next time

5914

08:30:30,920 --> 08:30:37,690

one minute

5915

08:30:37,700 --> 08:30:41,830

[Music]

5916

08:30:45,350 --> 08:30:43,830

if you are going to clear it now that's

5917

08:30:56,070 --> 08:30:45,360

fine you need to put a tether on that

5918

08:30:56,080 --> 08:31:13,680

copy

5919

08:31:38,070 --> 08:31:17,030

[Music]

5920

08:31:38,080 --> 08:31:40,788

okay

5921

08:31:45,750 --> 08:31:44,150

3562 locked black on black i'm going to

5922

08:31:47,430 --> 08:31:45,760

go ahead and retrieve

5923

08:31:58,490 --> 08:31:47,440

highway

5924

08:31:58,500 --> 08:32:02,230

[Applause]

5925

08:32:02,240 --> 08:32:22,628

you're breaking i'm sorry

5926

08:32:22,638 --> 08:32:27,430

just to be sure for next time

5927

08:32:31,590 --> 08:32:29,670

he's locked black on black on three six

5928

08:32:34,468 --> 08:32:31,600

two shades anchor hook lock black on

5929

08:32:36,628 --> 08:32:34,478

black on three five six one

5930

08:32:38,388 --> 08:32:36,638

copy good status of both the anchor

5931

08:32:42,200 --> 08:32:38,398

hooks you can head back to the air aloft

5932

08:32:42,210 --> 08:32:46,788

[Applause]

5933

08:32:51,030 --> 08:32:48,230

and shane since you are back at the

5934

08:32:53,430 --> 08:32:51,040

airlock and in position tamar will

5935

08:32:55,270 --> 08:32:53,440

meet you there do the tether reconfig so

5936

08:32:57,590 --> 08:32:55,280

at this time if you'd like to you can

5937

08:33:02,230 --> 08:32:57,600

remove the scu from the stowage pouch

5938

08:33:02,240 --> 08:33:07,140

remote

5939

08:33:45,300 --> 08:33:13,050

[Music]

5940

08:33:45,310 --> 08:34:23,920

[Applause]

5941

08:34:23,930 --> 08:34:28,788

[Music]

5942

08:34:28,798 --> 08:34:34,590

copy

5943

08:35:09,030 --> 08:34:36,548

[Applause]

5944

08:35:12,948 --> 08:35:10,788

this is mission control houston as we

5945

08:35:15,190 --> 08:35:12,958

approach the seven hour mark in today's

5946

08:35:17,830 --> 08:35:15,200

spacewalk shane kimbrough

5947

08:35:19,350 --> 08:35:17,840

is almost back home almost back at the

5948

08:35:21,510 --> 08:35:19,360

quest airlock

5949

08:35:22,548 --> 08:35:21,520

where he and tomah pesquet will enter

5950

08:35:25,670 --> 08:35:22,558

shortly

5951
08:35:29,910 --> 08:35:25,680
and begin the process of repressurizing

5952
08:35:32,548 --> 08:35:29,920
the airlock to wrap up today's spacewalk

5953
08:35:34,308 --> 08:35:32,558
they were able to remove

5954
08:35:37,430 --> 08:35:34,318
and mount

5955
08:35:39,030 --> 08:35:37,440
the first of the iss rollout solar

5956
08:35:41,510 --> 08:35:39,040
arrays

5957
08:35:43,590 --> 08:35:41,520
onto the mounting bracket at the base of

5958
08:35:45,430 --> 08:35:43,600
the p6 truss but uh

5959
08:35:46,948 --> 08:35:45,440
it has been a deliberate process

5960
08:35:49,750 --> 08:35:46,958
throughout the day

5961
08:35:52,308 --> 08:35:49,760
and uh the crew members were not able to

5962
08:35:54,830 --> 08:35:52,318
unfold or unfurl

5963
08:35:58,230 --> 08:35:54,840

the arrays as had been hoped

5964

08:36:00,070 --> 08:35:58,240

for so uh with the spacewalk

5965

08:36:01,670 --> 08:36:00,080

winding to a close

5966

08:36:03,110 --> 08:36:01,680

we will have to wait and see over the

5967

08:36:05,110 --> 08:36:03,120

next day or so

5968

08:36:07,030 --> 08:36:05,120

what the next course of action will be

5969

08:36:08,868 --> 08:36:07,040

in terms of the timing and the content

5970

08:36:34,868 --> 08:36:08,878

of the next spacewalk by kimbrough and

5971

08:36:46,868 --> 08:36:38,150

it's connected i'll show you is back all

5972

08:36:46,878 --> 08:36:49,910

okay coming to you

5973

08:36:53,910 --> 08:36:52,308

our coverage today will continue through

5974

08:36:56,308 --> 08:36:53,920

the time that the crew begins the

5975

08:36:57,910 --> 08:36:56,318

repressurization of the quest airlock

5976

08:37:00,150 --> 08:36:57,920
that will mark the official end of

5977

08:37:02,628 --> 08:37:00,160
today's spacewalk we'll compile

5978

08:37:05,910 --> 08:37:02,638
our usual

5979

08:37:07,910 --> 08:37:05,920
plethora of statistics about where we

5980

08:37:09,750 --> 08:37:07,920
stand with spacewalking

5981

08:37:11,990 --> 08:37:09,760
activities at the international space

5982

08:37:13,990 --> 08:37:12,000
station and then we'll continue our

5983

08:37:15,590 --> 08:37:14,000
coverage through the time that kimbrough

5984

08:37:18,150 --> 08:37:15,600
and pesquet are back inside the

5985

08:37:27,590 --> 08:37:18,160
equipment lock and they have doffed

5986

08:37:33,510 --> 08:37:31,350
you can both turn off the irosa

5987

08:37:35,510 --> 08:37:33,520
rollout solar array is in a safe

5988

08:37:38,150 --> 08:37:35,520

configuration bolted in place on its

5989

08:37:39,030 --> 08:37:38,160

mounting bracket at the base of the p6

5990

08:37:42,150 --> 08:37:39,040

truss

5991

08:37:44,868 --> 08:37:42,160

while engineers evaluate

5992

08:37:48,548 --> 08:37:44,878

the best course of action and timing to

5993

08:37:50,708 --> 08:37:48,558

complete its unfolding and unfurling to

5994

08:37:53,190 --> 08:37:50,718

a full 60 foot length

5995

08:37:56,388 --> 08:37:53,200

to enable it to begin its power

5996

08:38:02,800 --> 08:37:56,398

augmentation for the 2b power channel on

5997

08:38:07,910 --> 08:38:04,948

[Music]

5998

08:38:09,030 --> 08:38:07,920

okay your green hook goes

5999

08:38:11,430 --> 08:38:09,040

left

6000

08:38:42,310 --> 08:38:11,440

and right during

6001
08:38:42,320 --> 08:38:57,030
[Applause]

6002
08:39:00,948 --> 08:38:58,628
a green reel

6003
08:39:03,510 --> 08:39:00,958
it's unlocked

6004
08:39:06,468 --> 08:39:03,520
crappy those are good checks

6005
08:39:16,308 --> 08:39:06,478
you can attach shane's yellow hook to

6006
08:39:16,318 --> 08:39:40,708
okay

6007
08:39:40,718 --> 08:39:43,430
reel

6008
08:39:43,440 --> 08:40:11,270
let's change

6009
08:40:11,280 --> 08:40:26,630
jimmy my seo is connected

6010
08:40:26,640 --> 08:40:30,868
[Music]

6011
08:40:35,030 --> 08:40:33,030
copy shane's yellow hook attached to

6012
08:40:39,110 --> 08:40:35,040
your red wheel locked

6013
08:40:44,628 --> 08:40:42,468

it's real my road wheel this is the mark

6014

08:40:50,240 --> 08:40:44,638

copy you can attach your green hook to

6015

08:41:18,788 --> 08:40:55,990

[Music]

6016

08:41:21,590 --> 08:41:18,798

my reel is unlocked and the green oak is

6017

08:41:24,070 --> 08:41:21,600

locked black on black

6018

08:41:33,350 --> 08:41:24,080

copy you can release your yellow hook

6019

08:41:37,830 --> 08:41:36,070

as thomas pesquet makes his way inside

6020

08:41:39,990 --> 08:41:37,840

the crest airlock

6021

08:41:41,910 --> 08:41:40,000

at the other side of the hatch to the

6022

08:41:43,350 --> 08:41:41,920

crew lock section of quest in the

6023

08:41:46,388 --> 08:41:43,360

equipment lock

6024

08:41:48,468 --> 08:41:46,398

megan mcarthur on the left aki hoshide

6025

08:41:51,830 --> 08:41:48,478

with his back to the camera and mark

6026

08:41:56,070 --> 08:41:54,270

are awaiting uh the crew members and the

6027

08:41:57,670 --> 08:41:56,080

repressurization of the crew lock

6028

08:42:00,628 --> 08:41:57,680

section of quest that will enable them

6029

08:42:04,070 --> 08:42:00,638

to open up the hatch and bring shane

6030

08:42:06,070 --> 08:42:04,080

kimbrough and pesquet back inside

6031

08:42:07,270 --> 08:42:06,080

so with that tomah you can ingress the

6032

08:42:09,430 --> 08:42:07,280

airlock

6033

08:42:14,150 --> 08:42:09,440

verify that the forward hatch fit pin is

6034

08:42:14,160 --> 08:42:21,510

okay

6035

08:42:25,910 --> 08:42:23,590

all right

6036

08:42:48,520 --> 08:42:25,920

you ready for me i'm ready

6037

08:43:02,948 --> 08:42:55,040

[Applause]

6038

08:43:08,468 --> 08:43:06,070

close the hatch thermal cover attach the

6039

08:43:35,190 --> 08:43:08,478

hook to the magnetic plate d-ring and

6040

08:43:35,200 --> 08:43:46,140

down

6041

08:43:46,150 --> 08:44:01,350

[Applause]

6042

08:44:19,030 --> 08:44:03,190

attach the hook to the magnetic plate

6043

08:44:26,230 --> 08:44:20,548

we see it

6044

08:44:29,750 --> 08:44:28,150

we get it

6045

08:44:32,548 --> 08:44:29,760

finish it

6046

08:44:34,150 --> 08:44:32,558

copy cinch till snug

6047

08:44:38,708 --> 08:44:34,160

report the number of black lines we're

6048

08:44:46,628 --> 08:44:40,308

one two three

6049

08:45:02,790 --> 08:44:49,110

you can remove the scu from the stowage

6050

08:45:02,800 --> 08:45:15,270

[Applause]

6051
08:45:15,280 --> 08:45:15,610
this right

6052
08:45:15,620 --> 08:45:50,788
[Music]

6053
08:45:54,628 --> 08:45:52,070
and tomorrow i understand you are

6054
08:45:56,788 --> 08:45:54,638
connecting to your scu we want to check

6055
08:46:01,670 --> 08:45:56,798
if you can get the magnets to engage on

6056
08:46:07,350 --> 08:46:04,548
so i'm connected to the scu

6057
08:46:09,830 --> 08:46:07,360
if you want engage

6058
08:46:12,230 --> 08:46:09,840
copy you're connected to the scu can you

6059
08:46:15,990 --> 08:46:12,240
ensure that the thermal cover magnets

6060
08:46:20,230 --> 08:46:18,070
i'll be fully clean clothes are engaged

6061
08:46:22,948 --> 08:46:20,240
tomorrow

6062
08:46:24,548 --> 08:46:22,958
we'll be closed

6063
08:46:27,350 --> 08:46:24,558

we smother strong

6064

08:46:31,910 --> 08:46:30,150

copy we understand that looks good to us

6065

08:46:35,910 --> 08:46:31,920

so i'll get both of you to check your

6066

08:46:42,388 --> 08:46:39,510

it seems like pvc locked

6067

08:46:45,350 --> 08:46:42,398

note a tcv setting of 8 max cold

6068

08:46:49,830 --> 08:46:45,360

minimizes time for scu cooling you can

6069

08:47:01,990 --> 08:46:49,840

switch water off off forward and expect

6070

08:47:09,670 --> 08:47:04,868

do not close hatch until emu water off

6071

08:47:09,680 --> 08:48:04,410

okay

6072

08:48:18,708 --> 08:48:13,190

[Music]

6073

08:48:22,548 --> 08:48:20,308

we completely agree you guys did a

6074

08:48:27,430 --> 08:48:22,558

fantastic job today

6075

08:48:30,868 --> 08:48:29,190

job jenny

6076

08:48:53,990 --> 08:48:30,878

excellent work gaming

6077

08:48:57,990 --> 08:48:56,070

our two-minute timer is complete so

6078

08:49:00,628 --> 08:48:58,000

tomorrow you can verify the outer hatch

6079

08:49:07,270 --> 08:49:00,638

is clear of hardware and the handle is

6080

08:49:07,280 --> 08:49:09,990

okay

6081

08:49:12,830 --> 08:49:12,150

i think it's the best fully on knight to

6082

08:49:15,910 --> 08:49:12,840

your

6083

08:49:17,190 --> 08:49:15,920

shield true like that yeah okay i'll

6084

08:49:20,388 --> 08:49:17,200

hold them

6085

08:49:22,708 --> 08:49:21,350

all right

6086

08:49:24,548 --> 08:49:22,718

so there's the

6087

08:49:36,628 --> 08:49:24,558

outer hatch is clear

6088

08:49:41,430 --> 08:49:38,788

happy that the hatch is clear and if the

6089

08:49:45,270 --> 08:49:41,440

handle is per the deco you can close and

6090

08:49:45,280 --> 08:49:49,750

first they pull

6091

08:49:59,910 --> 08:49:52,308

in check me there's nothing

6092

08:49:59,920 --> 08:50:55,830

okay

6093

08:51:01,670 --> 08:50:58,388

short hand over we copy now the hatch is

6094

08:51:16,708 --> 08:51:05,510

on the uia shane check oxygen emu one

6095

08:51:16,718 --> 08:51:27,110

switch power ev1 and two both on

6096

08:51:34,388 --> 08:51:30,230

one with the light on two with the light

6097

08:51:37,190 --> 08:51:34,398

copy both on and you see emu leds two on

6098

08:51:42,708 --> 08:51:37,200

check power ev1 and 2 volts

6099

08:51:47,590 --> 08:51:44,948

15.6 on both

6100

08:51:54,230 --> 08:51:47,600

copy good numbers on your dcms switch

6101
08:51:58,548 --> 08:51:55,670
this is mission control houston the

6102
08:52:00,948 --> 08:51:58,558
clock continuing to tick on today's

6103
08:52:02,388 --> 08:52:00,958
spacewalk now at the seven hour 13

6104
08:52:03,430 --> 08:52:02,398
minute mark but we're in the home

6105
08:52:05,990 --> 08:52:03,440
stretch

6106
08:52:08,070 --> 08:52:06,000
the outer hatch to the quest airlock's

6107
08:52:09,510 --> 08:52:08,080
crew lock compartment is

6108
08:52:12,230 --> 08:52:09,520
closed and locked

6109
08:52:14,830 --> 08:52:12,240
the crew now hooking up to umbilicals in

6110
08:52:17,270 --> 08:52:14,840
the crew lock and will soon begin the

6111
08:52:19,670 --> 08:52:17,280
repressurization of that segment of the

6112
08:52:21,350 --> 08:52:19,680
airlock to mark the official end of

6113
08:52:23,030 --> 08:52:21,360

today's spacewalk

6114

08:52:25,990 --> 08:52:23,040

thank you jenny thanks to all the teams

6115

08:52:28,548 --> 08:52:26,000

there's a lot of work on youtube

6116

08:52:30,948 --> 08:52:28,558

real time your reaction was beautiful

6117

08:52:35,110 --> 08:52:30,958

thank you

6118

08:52:37,270 --> 08:52:35,120

today jenny and uh

6119

08:52:39,190 --> 08:52:37,280

toma and shane we are looking forward to

6120

08:52:40,150 --> 08:52:39,200

getting our friends back inside so here

6121

08:52:41,910 --> 08:52:40,160

we go

6122

08:53:07,990 --> 08:52:41,920

both of you take your o2 actuators to

6123

08:53:08,000 --> 08:53:15,270

happy

6124

08:53:19,910 --> 08:53:17,350

you choose and press

6125

08:53:22,388 --> 08:53:19,920

both and press command check that the ev

6126
08:53:23,590 --> 08:53:22,398
hatch mpeg is closed

6127
08:53:24,868 --> 08:53:23,600
yes

6128
08:53:40,230 --> 08:53:24,878
it's closed

6129
08:53:40,240 --> 08:53:59,910
very close also forward

6130
08:53:59,920 --> 08:54:24,150
huh

6131
08:54:27,590 --> 08:54:25,750
this is mission control houston the

6132
08:54:29,430 --> 08:54:27,600
repressurization of the quest airlock

6133
08:54:33,030 --> 08:54:29,440
has begun

6134
08:54:36,070 --> 08:54:33,040
at 2 26 p.m central time

6135
08:54:38,948 --> 08:54:36,080
marking an end to today's spacewalk by

6136
08:54:40,070 --> 08:54:38,958
tomah pesquet and shane kimbrough at 7

6137
08:54:44,628 --> 08:54:40,080
hours

6138
08:54:48,150 --> 08:54:44,638

today's spacewalk

6139

08:54:49,990 --> 08:54:48,160

the eva or spacewalk ending at 2 26 pm

6140

08:54:52,788 --> 08:54:50,000

central time with the start of the

6141

08:54:54,708 --> 08:54:52,798

repressurization of the quest airlock

6142

08:54:55,510 --> 08:54:54,718

and we'll have additional statistics for

6143

08:55:26,900 --> 08:54:55,520

you

6144

08:55:26,910 --> 08:55:34,340

[Applause]

6145

08:55:45,520 --> 08:55:42,200

[Music]

6146

08:55:52,770 --> 08:55:46,570

[Applause]

6147

08:55:52,780 --> 08:55:59,270

[Music]

6148

08:55:59,280 --> 08:56:04,628

iv hatch equalization valve to off here

6149

08:56:07,750 --> 08:56:06,388

and we're going to wait two minutes to

6150

08:56:21,590 --> 08:56:07,760

for the crew lock pressure to stabilize

6151
08:56:21,600 --> 08:57:44,868
uh

6152
08:57:48,548 --> 08:57:46,708
we'll finish up our two minutes to do a

6153
08:59:52,948 --> 08:57:48,558
one minute uh

6154
08:59:57,350 --> 08:59:55,110
this is mission control houston the

6155
08:59:58,628 --> 08:59:57,360
repressurization of the quest airlock is

6156
09:00:00,230 --> 08:59:58,638
continuing

6157
09:00:01,830 --> 09:00:00,240
following the completion of today's

6158
09:00:05,110 --> 09:00:01,840
spacewalk by

6159
09:00:08,070 --> 09:00:05,120
tomah pesquet and shane kimbrough

6160
09:00:09,430 --> 09:00:08,080
the spacewalk began at 7 11 a.m central

6161
09:00:11,670 --> 09:00:09,440
time today

6162
09:00:13,830 --> 09:00:11,680
when the two space walkers placed their

6163
09:00:17,510 --> 09:00:13,840

suits on battery power

6164

09:00:19,830 --> 09:00:17,520

and ended seven hours 15 minutes later

6165

09:00:21,510 --> 09:00:19,840

at 2 26 pm central time with the

6166

09:00:23,110 --> 09:00:21,520

re-pressurization

6167

09:00:25,910 --> 09:00:23,120

of quest

6168

09:00:29,190 --> 09:00:25,920

this was the 239th spacewalk in support

6169

09:00:31,670 --> 09:00:29,200

of iss assembly maintenance and upgrades

6170

09:00:34,628 --> 09:00:31,680

the seventh space wall conducted out of

6171

09:00:36,948 --> 09:00:34,638

the iss this calendar year

6172

09:00:39,430 --> 09:00:36,958

for tomah pesquet this was the third

6173

09:00:41,350 --> 09:00:39,440

spacewalk of his career he now has a

6174

09:00:44,788 --> 09:00:41,360

total of 19 hours

6175

09:00:47,510 --> 09:00:44,798

47 minutes of spacewalking time

6176
09:00:50,388 --> 09:00:47,520
shane kimbrough now has completed the

6177
09:00:54,150 --> 09:00:50,398
seventh spacewalk of his career

6178
09:00:56,708 --> 09:00:54,160
for a total of 46 hours and 15 minutes

6179
09:00:59,750 --> 09:00:56,718
of spacewalking time

6180
09:01:01,910 --> 09:00:59,760
in all the 239 spacewalks associated

6181
09:01:03,270 --> 09:01:01,920
with iss assembly maintenance and

6182
09:01:05,430 --> 09:01:03,280
upgrades

6183
09:01:07,030 --> 09:01:05,440
have

6184
09:01:10,468 --> 09:01:07,040
equaled 1

6185
09:01:11,350 --> 09:01:10,478
500 hours and 28 minutes of spacewalking

6186
09:01:14,548 --> 09:01:11,360
time

6187
09:01:17,750 --> 09:01:14,558
which is the equivalent of 62 days

6188
09:01:20,308 --> 09:01:17,760

18 hours and 28 minutes of spacewalking

6189

09:01:24,388 --> 09:01:20,318

since the first iss spacewalk

6190

09:01:27,270 --> 09:01:24,398

back in december of 1998.

6191

09:01:29,990 --> 09:01:27,280

so far for expedition 65 there have been

6192

09:01:32,070 --> 09:01:30,000

two spacewalks the first uh conducted by

6193

09:01:34,708 --> 09:01:32,080

russian cosmonauts oleg novitskiy and

6194

09:01:37,430 --> 09:01:34,718

piotr dubrov two weeks ago out of the

6195

09:01:38,628 --> 09:01:37,440

poisk module so with today's spacewalk

6196

09:01:40,708 --> 09:01:38,638

in the books

6197

09:01:44,150 --> 09:01:40,718

the two spacewalks so far for this

6198

09:01:48,510 --> 09:01:44,160

expedition have totaled 14 hours and 34

6199

09:02:08,308 --> 09:01:48,520

minutes of spacewalking time

6200

09:02:12,868 --> 09:02:09,910

the spacewalk

6201

09:02:14,868 --> 09:02:12,878

resulted in a mixed

6202

09:02:18,388 --> 09:02:14,878

bag of results today

6203

09:02:20,388 --> 09:02:18,398

the first of the new irosa iss rollout

6204

09:02:22,868 --> 09:02:20,398

solar arrays was removed from its flight

6205

09:02:23,830 --> 09:02:22,878

support structure on the truss of the

6206

09:02:25,030 --> 09:02:23,840

station

6207

09:02:26,948 --> 09:02:25,040

and uh

6208

09:02:30,788 --> 09:02:26,958

mounted on a mounting bracket at the

6209

09:02:32,468 --> 09:02:30,798

base of the p6 solar array truss segment

6210

09:02:34,070 --> 09:02:32,478

however

6211

09:02:35,750 --> 09:02:34,080

a couple of issues with shane

6212

09:02:37,030 --> 09:02:35,760

kimbrough's suit that resolved

6213

09:02:39,830 --> 09:02:37,040

themselves

6214

09:02:42,308 --> 09:02:39,840

uh cost of the spacewalkers some time

6215

09:02:44,788 --> 09:02:42,318

about an hour's worth of time

6216

09:02:47,510 --> 09:02:44,798

and uh they were unable to complete all

6217

09:02:49,670 --> 09:02:47,520

of the work planned for today

6218

09:02:52,230 --> 09:02:49,680

they also had an issue

6219

09:02:54,070 --> 09:02:52,240

with some interference as they on tried

6220

09:02:56,788 --> 09:02:54,080

to unfold the array

6221

09:02:58,868 --> 09:02:56,798

from its folded configuration once it

6222

09:03:01,030 --> 09:02:58,878

had been mounted on the mounting bracket

6223

09:03:02,150 --> 09:03:01,040

at the base of the p6 so

6224

09:03:04,868 --> 09:03:02,160

the array

6225

09:03:07,270 --> 09:03:04,878

is back in a folded configuration

6226
09:03:09,750 --> 09:03:07,280
it was not unfurled it was not fully

6227
09:03:12,070 --> 09:03:09,760
unfolded it is folded and bolted into

6228
09:03:15,030 --> 09:03:12,080
place in a safe configuration

6229
09:03:17,510 --> 09:03:15,040
managers now will uh have discussions

6230
09:03:19,830 --> 09:03:17,520
regarding the next course of action for

6231
09:03:21,190 --> 09:03:19,840
this particular solar array and where we

6232
09:03:24,070 --> 09:03:21,200
go from here

6233
09:03:25,350 --> 09:03:24,080
with uh planning for the next

6234
09:03:26,230 --> 09:03:25,360
spacewalk

6235
09:03:28,230 --> 09:03:26,240
to

6236
09:03:30,868 --> 09:03:28,240
deal with the second of these two solar

6237
09:03:33,350 --> 09:03:30,878
arrays this particular solar array that

6238
09:03:35,190 --> 09:03:33,360

pesky and kimbrough worked on today

6239

09:03:37,990 --> 09:03:35,200

was designed to

6240

09:03:41,030 --> 09:03:38,000

provide augmented power to the 2b power

6241

09:03:43,670 --> 09:03:41,040

channel on the p6 truss the next solar

6242

09:03:45,990 --> 09:03:43,680

road solar array which remains in its

6243

09:03:47,110 --> 09:03:46,000

flight support structure on the truss of

6244

09:03:50,070 --> 09:03:47,120

the station

6245

09:03:52,548 --> 09:03:50,080

is uh currently scheduled to be removed

6246

09:03:54,548 --> 09:03:52,558

and installed on sunday by pesquet and

6247

09:03:56,788 --> 09:03:54,558

kimbrough but whether or not we press

6248

09:03:59,190 --> 09:03:56,798

ahead with that work or have some

6249

09:04:01,590 --> 09:03:59,200

modification to the spacewalking plan

6250

09:04:19,910 --> 09:04:01,600

will be the subject of discussions over

6251
09:04:24,708 --> 09:04:22,308
the quest airlock is almost completely

6252
09:04:27,190 --> 09:04:24,718
repressurized at this point

6253
09:04:29,830 --> 09:04:27,200
at which time

6254
09:04:32,070 --> 09:04:29,840
mark vande high as we see is rotating

6255
09:04:33,350 --> 09:04:32,080
the hatch handle and now is opening the

6256
09:04:35,190 --> 09:04:33,360
hatch

6257
09:04:37,510 --> 09:04:35,200
between the crew lock section and the

6258
09:04:39,990 --> 09:04:37,520
equipment lock section so that he

6259
09:04:42,388 --> 09:04:40,000
and megan macarthur can assist pesquet

6260
09:04:44,628 --> 09:04:42,398
and kimbrough in re-entering the

6261
09:04:45,590 --> 09:04:44,638
equipment lock so that they can

6262
09:04:47,990 --> 09:04:45,600
have

6263
09:04:50,548 --> 09:04:48,000

their safer simplified aid for eva

6264

09:04:53,190 --> 09:04:50,558

rescue backpacks removed

6265

09:04:56,308 --> 09:04:53,200

from their spacesuits

6266

09:04:59,750 --> 09:04:56,318

and then have photos taken which is uh

6267

09:05:01,830 --> 09:04:59,760

a typical course of action uh they'll

6268

09:05:04,868 --> 09:05:01,840

have photos taken of their suits and

6269

09:05:07,430 --> 09:05:04,878

gloves for analysis by engineers back on

6270

09:06:09,650 --> 09:05:07,440

the ground before they begin to remove

6271

09:06:09,660 --> 09:07:20,950

[Applause]

6272

09:07:56,470 --> 09:07:22,868

station houston space ground run heads

6273

09:08:01,190 --> 09:07:58,388

shane kimbrough back inside the

6274

09:08:03,510 --> 09:08:01,200

equipment lock of the quest airlock

6275

09:11:20,068 --> 09:08:03,520

tomah pesquet now being assisted back

6276

09:11:23,990 --> 09:11:22,068

this is mission control houston once

6277

09:11:25,268 --> 09:11:24,000

again safely back inside the quest

6278

09:11:27,190 --> 09:11:25,278

airlock

6279

09:11:28,950 --> 09:11:27,200

astronaut shane kimbrough in the field

6280

09:11:30,548 --> 09:11:28,960

of view uh

6281

09:11:32,228 --> 09:11:30,558

on the left side of your screen

6282

09:11:34,150 --> 09:11:32,238

partially obscured at the moment by mark

6283

09:11:36,470 --> 09:11:34,160

vande high and uh looking over the

6284

09:11:37,268 --> 09:11:36,480

shoulder of thomas pesquet

6285

09:11:38,950 --> 09:11:37,278

they

6286

09:11:41,030 --> 09:11:38,960

are being assisted in getting their

6287

09:11:42,790 --> 09:11:41,040

gloves off there will be photos taken of

6288

09:11:44,630 --> 09:11:42,800

those gloves as is

6289

09:11:47,350 --> 09:11:44,640

normal standard practice

6290

09:11:49,748 --> 09:11:47,360

following a spacewalk megan mcarthur

6291

09:11:51,510 --> 09:11:49,758

also assisting in the equipment lock

6292

09:11:53,830 --> 09:11:51,520

section of quest

6293

09:11:55,588 --> 09:11:53,840

and within the next few minutes

6294

09:11:57,670 --> 09:11:55,598

the two crew members will

6295

09:11:59,748 --> 09:11:57,680

get their helmets off

6296

09:12:02,068 --> 09:11:59,758

and begin the process of getting out of

6297

09:12:04,708 --> 09:12:02,078

their suits with their long days worth

6298

09:12:07,268 --> 09:12:04,718

of work having come to an end with the

6299

09:12:10,150 --> 09:12:07,278

first of the iss rollout solar arrays

6300

09:12:12,708 --> 09:12:10,160

having been installed on a mounting

6301

09:12:15,268 --> 09:12:12,718

bracket at the base of the p6 truss

6302

09:12:17,588 --> 09:12:15,278

not deployed not unfolded that is

6303

09:12:20,950 --> 09:12:17,598

forward work yet to be evaluated by

6304

09:12:22,868 --> 09:12:20,960

mission managers

6305

09:12:25,990 --> 09:12:22,878

the next space walk by kimbrough and

6306

09:12:28,630 --> 09:12:26,000

pesquet for the next of the first pair

6307

09:12:31,190 --> 09:12:28,640

of solar arrays the second of the

6308

09:12:33,268 --> 09:12:31,200

solar arrays delivered two weeks ago on

6309

09:12:35,830 --> 09:12:33,278

a spacex cargo vehicle that next

6310

09:12:36,868 --> 09:12:35,840

spacewalk is currently scheduled for

6311

09:12:39,350 --> 09:12:36,878

sunday

6312

09:12:42,470 --> 09:12:39,360

and we'll be uh watching very carefully

6313

09:12:43,670 --> 09:12:42,480

to see what managers and the iss

6314

09:12:46,068 --> 09:12:43,680

program

6315

09:20:12,230 --> 09:12:46,078

management decides the next course of

6316

09:20:16,550 --> 09:20:14,390

this is mission control houston

6317

09:20:18,310 --> 09:20:16,560

tomah pesquet on the right shane

6318

09:20:21,190 --> 09:20:18,320

kimbrough on the left their helmets now

6319

09:20:23,586 --> 09:20:21,200

having been removed safely back inside

6320

09:20:25,830 --> 09:20:23,596

the quest airlock following a seven-hour

6321

09:20:28,870 --> 09:20:25,840

15-minute spacewalk today the seventh

6322

09:20:30,950 --> 09:20:28,880

for kimbrough the third for pesquet

6323

09:20:32,550 --> 09:20:30,960

in which they removed

6324

09:20:34,070 --> 09:20:32,560

from a flight support structure the

6325

09:20:37,350 --> 09:20:34,080

first

6326

09:20:40,230 --> 09:20:37,360

iss rollout solar array

6327

09:20:42,710 --> 09:20:40,240

the first of six such devices designed

6328

09:20:44,710 --> 09:20:42,720

to augment the power capability of the

6329

09:20:46,230 --> 09:20:44,720

international space station's existing

6330

09:20:48,710 --> 09:20:46,240

arrays

6331

09:20:51,266 --> 09:20:48,720

they uh were able to install it on a

6332

09:20:52,230 --> 09:20:51,276

mounting bracket at the base of the p6

6333

09:20:54,630 --> 09:20:52,240

truss

6334

09:20:56,310 --> 09:20:54,640

but a couple of issues with shane

6335

09:20:59,746 --> 09:20:56,320

kimbrough's suit that turned out to be

6336

09:21:02,470 --> 09:20:59,756

minor in nature uh cost uh the two space

6337

09:21:03,830 --> 09:21:02,480

walkers some valuable time outside

6338

09:21:05,266 --> 09:21:03,840

uh while

6339

09:21:07,990 --> 09:21:05,276

flight controllers here in mission

6340

09:21:09,510 --> 09:21:08,000

control uh conducted troubleshooting on

6341

09:21:10,630 --> 09:21:09,520

kimbrough's suit

6342

09:21:13,350 --> 09:21:10,640

and so

6343

09:21:15,746 --> 09:21:13,360

the two space walkers were not able to

6344

09:21:17,990 --> 09:21:15,756

unfold or deploy

6345

09:21:19,990 --> 09:21:18,000

this 60 foot long array it remains

6346

09:21:23,110 --> 09:21:20,000

folded up and bolted in place in a safe

6347

09:21:24,230 --> 09:21:23,120

configuration at the base of the p6

6348

09:21:25,426 --> 09:21:24,240

truss

6349

09:21:28,550 --> 09:21:25,436

the next

6350

09:21:31,190 --> 09:21:28,560

spacewalk is scheduled at the moment for

6351
09:21:34,710 --> 09:21:31,200
sunday by kimbrough and pesquet

6352
09:21:35,746 --> 09:21:34,720
to remove and install and activate the

6353
09:21:39,030 --> 09:21:35,756
second

6354
09:21:42,150 --> 09:21:39,040
of the two irosa or iss rollout solar

6355
09:21:44,390 --> 09:21:42,160
arrays this one for the 4b channel of

6356
09:21:45,906 --> 09:21:44,400
the p6 truss the one mounted on the

6357
09:21:48,710 --> 09:21:45,916
bracket today

6358
09:21:50,710 --> 09:21:48,720
is designed to augment power for the

6359
09:21:52,550 --> 09:21:50,720
2b power channel

6360
09:21:55,030 --> 09:21:52,560
so where we go from here will be the

6361
09:21:56,870 --> 09:21:55,040
subject of discussion by managers over

6362
09:21:58,870 --> 09:21:56,880
the next couple of days

6363
09:22:01,510 --> 09:21:58,880

at the moment we are scheduled for

6364

09:22:03,110 --> 09:22:01,520

coverage of the next spacewalk at 6 30

6365

09:22:04,870 --> 09:22:03,120

a.m eastern time

6366

09:22:07,110 --> 09:22:04,880

on sunday morning

6367

09:22:09,906 --> 09:22:07,120

however we would urge you to stay in

6368

09:22:13,190 --> 09:22:09,916

touch with any further advisories on

6369

09:22:15,110 --> 09:22:13,200

that and to keep your eye on

6370

09:22:19,030 --> 09:22:15,120

the space station web

6371

09:22:21,426 --> 09:22:20,070

station

6372

09:22:23,906 --> 09:22:21,436

for now that will wrap up our

6373

09:22:26,790 --> 09:22:23,916

spacewalking coverage for today seven

6374

09:22:29,746 --> 09:22:26,800

hour 15 minute excursion outside by

6375

09:22:31,190 --> 09:22:29,756

shane kimbrough and tomah pesquet

6376

09:22:33,110 --> 09:22:31,200

thanks for joining us throughout the

6377

09:22:47,690 --> 09:22:33,120

course of the day this is mission