



1
00:00:02,990 --> 00:00:00,470

[Music]

2
00:00:33,950 --> 00:00:03,000

foreign

3
00:01:07,910 --> 00:00:33,960

[Music]

4
00:01:12,109 --> 00:01:09,770

this is Mission Control Houston good

5
00:01:13,850 --> 00:01:12,119

morning you are getting a live look from

6
00:01:15,770 --> 00:01:13,860

inside of the International Space

7
00:01:17,870 --> 00:01:15,780

Station

8
00:01:20,690 --> 00:01:17,880

right now two space Walkers are

9
00:01:23,810 --> 00:01:20,700

preparing to exit the hatch to begin a

10
00:01:26,810 --> 00:01:23,820

planned six and a half hour spacewalk uh

11
00:01:29,149 --> 00:01:26,820

as part of continuing upgrades to uh

12
00:01:32,090 --> 00:01:29,159

continue to upgrade the power system

13
00:01:33,530 --> 00:01:32,100

aboard the International Space Station

14

00:01:36,590 --> 00:01:33,540

in the front of the frame to left to

15

00:01:39,050 --> 00:01:36,600

right is NASA astronauts Frank Rubio in

16

00:01:41,929 --> 00:01:39,060

the suit with the unmarked uh with no

17

00:01:44,690 --> 00:01:41,939

Stripes is at Nasa astronaut Nicole Mann

18

00:01:46,490 --> 00:01:44,700

and to her right is NASA astronaut Josh

19

00:01:49,130 --> 00:01:46,500

cassida

20

00:01:51,170 --> 00:01:49,140

Rubio and kasada are helping man uh

21

00:01:53,630 --> 00:01:51,180

-serving as ev2 for this particular

22

00:01:56,149 --> 00:01:53,640

spacewalk with the final steps before

23

00:01:57,469 --> 00:01:56,159

putting her into the crew lock right now

24

00:01:58,490 --> 00:01:57,479

the three astronauts in the equipment

25

00:02:00,649 --> 00:01:58,500

lock

26

00:02:03,170 --> 00:02:00,659

behind them is another spacewalker

27

00:02:05,389 --> 00:02:03,180

kawichi wakada wearing the suit with the

28

00:02:07,850 --> 00:02:05,399

red stripes already situated in the crew

29

00:02:09,729 --> 00:02:07,860

lock getting ready to start today's

30

00:02:12,110 --> 00:02:09,739

spacewalk perhaps a little bit early

31

00:02:15,110 --> 00:02:12,120

right now we're following the timeline

32

00:02:16,850 --> 00:02:15,120

ahead of schedule and now coming to you

33

00:02:18,710 --> 00:02:16,860

live at the final steps of preparation

34

00:02:26,530 --> 00:02:18,720

of getting these two space walking

35

00:02:32,150 --> 00:02:29,390

for both of the space Walkers today for

36

00:02:37,369 --> 00:02:32,160

wakata and man this will be their first

37

00:02:40,250 --> 00:02:37,379

spacewalk and again uh wakata is ev1 the

38

00:02:42,949 --> 00:02:40,260

suit with the red stripes Nicole Mann uh

39

00:02:45,770 --> 00:02:42,959

the suit with no Stripes uh this is U.S

40

00:02:47,690 --> 00:02:45,780

spacewalk 84 and they'll be installed

41

00:02:51,650 --> 00:02:47,700

installing mounting platforms which are

42

00:02:53,390 --> 00:02:51,660

a requirement to fit the new irosa

43

00:02:56,210 --> 00:02:53,400

International Space Station roll out

44

00:02:58,490 --> 00:02:56,220

solar arrays on a future spacewalk these

45

00:03:00,350 --> 00:02:58,500

modification kits required

46

00:03:03,290 --> 00:03:00,360

there are four that are installed

47

00:03:05,869 --> 00:03:03,300

already including with irosas uh and

48

00:03:07,490 --> 00:03:05,879

much of the work on the 1B power channel

49

00:03:09,710 --> 00:03:07,500

has already been accomplished they

50

00:03:11,809 --> 00:03:09,720

really just need a uh to do some of the

51
00:03:14,570 --> 00:03:11,819
final steps to really make sure that one

52
00:03:17,089 --> 00:03:14,580
is fully uh fully constructed and ready

53
00:03:19,670 --> 00:03:17,099
to receive the irosis later this year

54
00:03:21,949 --> 00:03:19,680
and they'll be starting on the 1A power

55
00:03:24,830 --> 00:03:21,959
channel from scratch taking out a

56
00:03:31,670 --> 00:03:24,840
modification kit and constructing it out

57
00:03:37,550 --> 00:03:34,790
this spacewalk is the 258th in support

58
00:03:42,309 --> 00:03:37,560
of International Space Station assembly

59
00:03:49,250 --> 00:03:46,550
and again it is the first uh for both

60
00:03:51,890 --> 00:03:49,260
space Walkers today Casita and Rubio

61
00:03:53,809 --> 00:03:51,900
serving as the suit IVs inside the quest

62
00:03:56,270 --> 00:03:53,819
airlock they're the ones not suited

63
00:03:58,130 --> 00:03:56,280

today uh both within frame both

64

00:04:02,390 --> 00:03:58,140

experienced space walkers at this point

65

00:04:05,149 --> 00:04:02,400

now serving on the suit IV uh role which

66

00:04:06,949 --> 00:04:05,159

is to outfit both of the space Walkers

67

00:05:08,510 --> 00:04:06,959

and make sure that they are ready for

68

00:05:12,350 --> 00:05:10,790

now we're losing signal from the

69

00:05:13,909 --> 00:05:12,360

International Space Station we'll be

70

00:05:15,530 --> 00:05:13,919

seeing this incrementally throughout

71

00:05:17,330 --> 00:05:15,540

today's coverage as the International

72

00:05:20,030 --> 00:05:17,340

Space Station travels around the world

73

00:05:21,830 --> 00:05:20,040

now over the South Pacific Ocean is hand

74

00:05:23,450 --> 00:05:21,840

over handing over from some of the

75

00:05:24,650 --> 00:05:23,460

tracking and data relay satellites we'll

76

00:05:26,749 --> 00:05:24,660

be regaining some of that footage

77

00:05:28,790 --> 00:05:26,759

shortly in the meantime let's get take

78

00:05:30,050 --> 00:05:28,800

this live view from inside the

79

00:05:32,450 --> 00:05:30,060

International Space Station flight

80

00:05:34,730 --> 00:05:32,460

control room this is a live view from

81

00:05:36,950 --> 00:05:34,740

here in Houston Texas the teams here are

82

00:05:39,230 --> 00:05:36,960

preparing to execute today's space walk

83

00:05:41,210 --> 00:05:39,240

all in support roles the teams here of

84

00:05:43,189 --> 00:05:41,220

course are led by the flight director

85

00:05:45,110 --> 00:05:43,199

who takes on the lead position and

86

00:05:47,390 --> 00:05:45,120

listens to all that's going on here in

87

00:05:49,070 --> 00:05:47,400

the room in the black suit there heading

88

00:05:51,710 --> 00:05:49,080

towards the back is Chloe Maring she's

89

00:05:54,110 --> 00:05:51,720

serving as today's flight director for

90

00:05:56,390 --> 00:05:54,120

the space walking teams to her right is

91

00:05:57,590 --> 00:05:56,400

Xena Cartman she'll be the voice that

92

00:05:59,450 --> 00:05:57,600

you're hearing from here in Mission

93

00:06:02,390 --> 00:05:59,460

Control Houston this is the position

94

00:06:04,310 --> 00:06:02,400

called Ground IV uh she'll be

95

00:06:06,650 --> 00:06:04,320

communicating all the work that the

96

00:06:09,529 --> 00:06:06,660

teams here are doing especially that of

97

00:06:11,330 --> 00:06:09,539

the spacewalk officer and guiding our

98

00:06:16,870 --> 00:06:11,340

two spacewalkers through the intricate

99

00:06:23,450 --> 00:06:20,570

to her right is Aki hoshide

100

00:06:26,150 --> 00:06:23,460

hoshide as a Japan Aerospace Exploration

101
00:06:29,749 --> 00:06:26,160
Agency astronaut also an experienced

102
00:06:34,909 --> 00:06:31,909
serving as the Capcom he'll be the

103
00:06:36,350 --> 00:06:34,919
person talking with the crew inside the

104
00:06:39,469 --> 00:06:36,360
International Space Station of course

105
00:06:42,650 --> 00:06:39,479
work taking place both inside and out so

106
00:06:48,409 --> 00:06:42,660
cardmen will be able to focus on the two

107
00:06:53,749 --> 00:06:51,529
the teams here are also on the back end

108
00:06:56,210 --> 00:06:53,759
of what's called a Handover Mission

109
00:06:58,370 --> 00:06:56,220
Control Houston is staffed 24 hours a

110
00:07:00,950 --> 00:06:58,380
day seven days a week and they are

111
00:07:04,010 --> 00:07:00,960
handing over with brand new teams led by

112
00:07:05,870 --> 00:07:04,020
Chloe Maring the uh space uh the flight

113
00:07:07,670 --> 00:07:05,880

director today

114

00:07:09,050 --> 00:07:07,680

um handing over from the teams prior

115

00:07:12,469 --> 00:07:09,060

that have been doing much of the prep

116

00:07:14,510 --> 00:07:12,479

work since the astronauts have uh gotten

117

00:07:17,150 --> 00:07:14,520

up from their sleep period and been

118

00:07:19,850 --> 00:07:17,160

preparing since that wake period for

119

00:07:22,370 --> 00:07:19,860

today's space walk again everything is

120

00:07:24,830 --> 00:07:22,380

going uh ahead of schedule at this time

121

00:07:35,570 --> 00:07:24,840

and the two astronauts are inside the

122

00:07:38,930 --> 00:07:37,610

here in Mission Control Houston of

123

00:07:41,510 --> 00:07:38,940

course in the back there is Keith

124

00:07:43,129 --> 00:07:41,520

Johnson the space walking officer he

125

00:07:45,170 --> 00:07:43,139

sits in the front room and is supported

126
00:07:47,930 --> 00:07:45,180
by many team members in several rooms

127
00:07:49,430 --> 00:07:47,940
inside of this building inside of uh the

128
00:07:52,010 --> 00:07:49,440
mission control center here in Houston

129
00:07:54,770 --> 00:07:52,020
uh but he is the one he is the person in

130
00:07:57,469 --> 00:07:54,780
this room that knows the procedures for

131
00:07:59,330 --> 00:07:57,479
today's space walk most intimately uh in

132
00:08:02,029 --> 00:07:59,340
any scenario if they were to have to

133
00:08:04,189 --> 00:08:02,039
make last minute changes or uh or even

134
00:08:06,409 --> 00:08:04,199
emergency procedures they would be

135
00:08:10,689 --> 00:08:06,419
looking towards the guidance of Keith

136
00:08:14,570 --> 00:08:12,890
teams here have been preparing for quite

137
00:08:17,089 --> 00:08:14,580
some time for these spacewalks and in

138
00:08:19,490 --> 00:08:17,099

fact the spacewalk of this type has been

139

00:08:22,909 --> 00:08:19,500

conducted several times the installation

140

00:08:24,469 --> 00:08:22,919

of modif five modification kits on the

141

00:08:27,129 --> 00:08:24,479

outside of the space station have taken

142

00:08:31,430 --> 00:08:27,139

place thus far they'll be finishing up

143

00:08:33,110 --> 00:08:31,440

the work on the fifth modification kit

144

00:08:35,329 --> 00:08:33,120

the one that was installed most recently

145

00:08:37,130 --> 00:08:35,339

on the 1B power Channel and again

146

00:08:38,810 --> 00:08:37,140

they'll be starting from scratch with a

147

00:08:41,149 --> 00:08:38,820

brand new modification kit that'll have

148

00:08:43,610 --> 00:08:41,159

it in tow with them out to the work site

149

00:08:45,889 --> 00:08:43,620

on the 1A power Channel and they'll be

150

00:08:48,470 --> 00:08:45,899

able to install that as part of today's

151

00:08:51,350 --> 00:08:48,480

space walking activities

152

00:08:52,910 --> 00:08:51,360

now getting live views back from the

153

00:08:55,009 --> 00:08:52,920

International Space Station you can see

154

00:08:57,350 --> 00:08:55,019

both astronauts positioned inside the

155

00:09:01,550 --> 00:08:57,360

crew lock it is a tight fit so they do

156

00:09:03,230 --> 00:09:01,560

have to fit in there very specifically

157

00:09:04,910 --> 00:09:03,240

in the back there you see the suit with

158

00:09:07,430 --> 00:09:04,920

the red stripes on the thighs that's

159

00:09:10,850 --> 00:09:07,440

koichiwakada he'll be taking on the ev1

160

00:09:12,769 --> 00:09:10,860

roll extra vehicular crew member one for

161

00:09:15,590 --> 00:09:12,779

the duration of today's space walk in

162

00:09:18,410 --> 00:09:15,600

that position with his head facing sort

163

00:09:21,170 --> 00:09:18,420

of down in this view which is Nader or

164

00:09:23,030 --> 00:09:21,180

towards the Earth it'll be his role once

165

00:09:25,190 --> 00:09:23,040

the hatch between the crew lock and the

166

00:09:27,590 --> 00:09:25,200

equipment lock the equipment lock being

167

00:09:29,030 --> 00:09:27,600

where Josh cassida is currently the crew

168

00:09:31,009 --> 00:09:29,040

lock being where Frank Rubio and the two

169

00:09:32,449 --> 00:09:31,019

spacewalking astronauts are they'll

170

00:09:34,730 --> 00:09:32,459

close the hatch in between there and

171

00:09:37,070 --> 00:09:34,740

once the crew lock is depressurized

172

00:09:39,769 --> 00:09:37,080

going down to vacuum to match that of

173

00:09:42,410 --> 00:09:39,779

the outside it'll be wakata who will

174

00:09:44,630 --> 00:09:42,420

have the ability to open up the hatch

175

00:09:47,650 --> 00:09:44,640

and we'll see wakata exit the hatch

176

00:09:56,090 --> 00:09:51,530

of course space walking really is

177

00:09:58,970 --> 00:09:56,100

um a maintenance sort of activity so

178

00:10:01,430 --> 00:09:58,980

with them in tow are a set of tools and

179

00:10:04,370 --> 00:10:01,440

in fact a toolbox you can see it uh sort

180

00:10:07,490 --> 00:10:04,380

of at the front uh within view of Nicole

181

00:10:08,930 --> 00:10:07,500

Mann av2 for today they'll be taking a

182

00:10:11,090 --> 00:10:08,940

lot of the equipment that's necessary

183

00:10:13,610 --> 00:10:11,100

for today's primary activities of course

184

00:10:16,730 --> 00:10:13,620

the installation of the modification

185

00:10:20,030 --> 00:10:16,740

kits on the 1A and 1B power Channel but

186

00:10:22,670 --> 00:10:20,040

as we do with space Walks from time to

187

00:10:24,829 --> 00:10:22,680

time and in fact most of the time we

188

00:10:28,490 --> 00:10:24,839

have a set of secondary objectives or

189

00:10:30,650 --> 00:10:28,500

get ahead tasks should one make sense to

190

00:10:32,930 --> 00:10:30,660

squeeze within the timeline that is an

191

00:10:35,930 --> 00:10:32,940

option for today's space walk or towards

192

00:10:38,269 --> 00:10:35,940

the end of the spacewalk uh this if they

193

00:10:40,370 --> 00:10:38,279

were ahead of their activities way ahead

194

00:10:41,990 --> 00:10:40,380

of the plan six and a half hours there

195

00:10:43,790 --> 00:10:42,000

are some secondary objectives that they

196

00:10:45,410 --> 00:10:43,800

would be able to accomplish and so they

197

00:10:56,110 --> 00:10:45,420

bring all of that equipment out with

198

00:11:00,530 --> 00:10:58,490

and now we're seeing uh you're you're

199

00:11:02,569 --> 00:11:00,540

witnessing the final steps

200

00:11:05,750 --> 00:11:02,579

um of preparing the two space walking

201
00:11:07,910 --> 00:11:05,760
astronauts in the crew lock this is the

202
00:11:09,889 --> 00:11:07,920
hatch that separates the crew lock from

203
00:11:11,210 --> 00:11:09,899
the equipment lock inside the quest

204
00:11:14,329 --> 00:11:11,220
airlock module of the International

205
00:11:19,310 --> 00:11:17,210
Rubio will manually close this hatch and

206
00:11:21,350 --> 00:11:19,320
there are a series of uh cranks and

207
00:11:24,290 --> 00:11:21,360
knobs that need to be turned uh before

208
00:11:26,870 --> 00:11:24,300
they work with the ground teams to get a

209
00:11:29,269 --> 00:11:26,880
go ahead to start the depressurization

210
00:11:31,730 --> 00:11:29,279
sequence it is a lengthy sequence to

211
00:11:33,889 --> 00:11:31,740
depressurize the uh crew lock it's got

212
00:11:35,990 --> 00:11:33,899
to go from about what the pressure we

213
00:11:38,509 --> 00:11:36,000

find here at sea level on Earth so about

214

00:11:40,670 --> 00:11:38,519

14.7 PSI that's what we're seeing now

215

00:11:43,130 --> 00:11:40,680

inside the kulak it'll go down to about

216

00:11:44,750 --> 00:11:43,140

five and the grown teams will look at

217

00:11:46,310 --> 00:11:44,760

the data and make sure that the

218

00:11:48,410 --> 00:11:46,320

depressurization looks stable that

219

00:11:51,170 --> 00:11:48,420

there's no leaks and the hold there at

220

00:11:53,750 --> 00:11:51,180

the 5 PSI mark for a little bit before

221

00:11:56,230 --> 00:11:53,760

proceeding before getting that go to

222

00:11:59,269 --> 00:11:56,240

proceed down to vacuum

223

00:12:02,690 --> 00:11:59,279

once the crew lock is at about a half a

224

00:12:04,970 --> 00:12:02,700

PSI is about the time that koichiwakana

225

00:12:06,829 --> 00:12:04,980

will get the go to open up the hatch and

226

00:12:08,509 --> 00:12:06,839

both of them will be able to exit and

227

00:12:09,889 --> 00:12:08,519

start looking at their tethers which

228

00:12:12,410 --> 00:12:09,899

keep them anchored to the International

229

00:12:14,329 --> 00:12:12,420

Space Station that configuration is very

230

00:12:16,130 --> 00:12:14,339

specific to make sure that they are

231

00:12:18,470 --> 00:12:16,140

safely attached to the International

232

00:12:20,150 --> 00:12:18,480

Space Station at all times they'll check

233

00:12:21,650 --> 00:12:20,160

their tether configuration make sure

234

00:14:06,110 --> 00:12:21,660

they have all their tools and then

235

00:14:10,310 --> 00:14:08,090

so again on the other side of the hatch

236

00:14:13,790 --> 00:14:10,320

or the two space locking astronauts for

237

00:14:15,170 --> 00:14:13,800

today koichiwakata as ev1 a gold man as

238

00:14:17,210 --> 00:14:15,180

ev2

239

00:14:20,269 --> 00:14:17,220

both of them are inside the crew lock

240

00:14:22,129 --> 00:14:20,279

positioned and ready to go the hatch

241

00:14:25,430 --> 00:14:22,139

between the equipment lock and the crew

242

00:14:27,650 --> 00:14:25,440

lock is closed and Rubio and cassida are

243

00:14:29,449 --> 00:14:27,660

looking over their procedures

244

00:14:32,030 --> 00:14:29,459

seeing what other last minute activities

245

00:14:33,470 --> 00:14:32,040

need to be done before they work with

246

00:14:36,050 --> 00:14:33,480

Mission Control Houston and the teams

247

00:14:39,829 --> 00:14:36,060

here on the ground to begin the

248

00:14:44,870 --> 00:14:42,290

the official start time of today's space

249

00:14:48,050 --> 00:14:44,880

walk will not be when the crew lock

250

00:14:50,329 --> 00:14:48,060

begins to depressurize but just about

251
00:14:51,970 --> 00:14:50,339
after it's depressurized the suits

252
00:14:54,350 --> 00:14:51,980
themselves

253
00:14:56,150 --> 00:14:54,360
by the hands of the space walking

254
00:14:59,629 --> 00:14:56,160
astronauts that have the configuration

255
00:15:04,670 --> 00:14:59,639
one for procedure one decimal two two

256
00:15:04,680 --> 00:16:04,430
and Houston copies

257
00:16:09,170 --> 00:16:07,370
part of the procedures to get ready for

258
00:16:10,250 --> 00:16:09,180
the depressurization

259
00:16:11,150 --> 00:16:10,260
um they're going through their checklist

260
00:16:13,069 --> 00:16:11,160
now

261
00:16:15,290 --> 00:16:13,079
they have to do

262
00:16:16,850 --> 00:16:15,300
um certain steps to activate some of the

263
00:16:19,250 --> 00:16:16,860

components of the suit and some of the

264

00:16:21,050 --> 00:16:19,260

components of the airlock to make sure

265

00:16:24,050 --> 00:16:21,060

it's ready for that depressurization one

266

00:16:27,829 --> 00:16:24,060

of them will be to enable the hot mics

267

00:16:30,650 --> 00:16:27,839

inside these suits of that of man and

268

00:16:32,030 --> 00:16:30,660

wakata these hot mics are what they

269

00:16:35,150 --> 00:16:32,040

sound like basically once they're

270

00:16:37,550 --> 00:16:35,160

activated any time that man or okada

271

00:16:41,810 --> 00:16:37,560

speak will be able to hear them on the

272

00:16:46,370 --> 00:16:44,150

throughout the duration of the spacewalk

273

00:16:49,449 --> 00:16:46,380

they will be hot miked so they don't

274

00:16:53,269 --> 00:16:49,459

have to press any buttons or

275

00:16:55,009 --> 00:16:53,279

make any commands in order to talk to

276

00:17:05,409 --> 00:16:55,019

the teams on the ground and of course to

277

00:17:10,970 --> 00:17:08,890

for the first couple of steps for the

278

00:17:13,370 --> 00:17:10,980

depressurization it'll actually be the

279

00:17:16,309 --> 00:17:13,380

crew inside the equipment lock you see

280

00:17:18,230 --> 00:17:16,319

Rubio here as well as Josh Casa it'll be

281

00:17:20,449 --> 00:17:18,240

them uh walking them through the

282

00:17:22,010 --> 00:17:20,459

depressurization sequence

283

00:17:24,230 --> 00:17:22,020

um before handing it over to Zena

284

00:17:26,870 --> 00:17:24,240

Cardman who's sitting here in Mission

285

00:17:29,090 --> 00:17:26,880

Control Houston uh as the ground IV

286

00:17:29,990 --> 00:17:29,100

it'll be her job and her voice that

287

00:17:32,390 --> 00:17:30,000

you'll be hearing throughout the

288

00:17:34,909 --> 00:17:32,400

duration of today's spacewalk uh she'll

289

00:17:38,270 --> 00:17:34,919

be the ones guiding man and wakata

290

00:17:44,330 --> 00:17:41,090

Houston Station on one let us know when

291

00:17:45,710 --> 00:17:44,340

you are complete with 80 decimal one and

292

00:17:48,350 --> 00:17:45,720

uh let the crew know that they are

293

00:17:51,169 --> 00:17:48,360

highlight please thank you

294

00:18:00,289 --> 00:17:51,179

and vocal uh that is in work uh right

295

00:18:08,930 --> 00:18:04,450

Eric Houston on one uh

296

00:18:16,029 --> 00:18:08,940

79 80 are complete uh easy to our mic

297

00:18:23,510 --> 00:18:17,750

good morning

298

00:18:27,350 --> 00:18:25,970

that was the voice of Aki hoshide here

299

00:18:30,710 --> 00:18:27,360

in Mission Control Houston again there

300

00:18:33,169 --> 00:18:30,720

is a designation for the role of the

301
00:18:35,570 --> 00:18:33,179
sort of Capcom position or voice that

302
00:18:37,789 --> 00:18:35,580
you hear from Mission Control Houston

303
00:18:39,890 --> 00:18:37,799
um hoshide is taking on the role as

304
00:18:41,390 --> 00:18:39,900
Capcom which is essentially talking with

305
00:18:43,310 --> 00:18:41,400
the crew members while they're inside

306
00:18:45,230 --> 00:18:43,320
the International Space Station it is

307
00:18:47,210 --> 00:18:45,240
cardmen that again you'll hear once the

308
00:18:49,789 --> 00:18:47,220
crew members are outside and that's her

309
00:18:53,150 --> 00:18:49,799
job to talk specifically to man and

310
00:18:57,350 --> 00:18:55,190
she will assume that position of ground

311
00:18:59,330 --> 00:18:57,360
IV of course after the depressurization

312
00:19:02,090 --> 00:18:59,340
and walk them through the steady steps of

313
00:19:03,409 --> 00:19:02,100

getting out of the hatch

314

00:19:05,270 --> 00:19:03,419

but for now we'll be hearing from

315

00:19:25,909 --> 00:19:05,280

hoshide from here in Mission Control

316

00:19:25,919 --> 00:19:35,180

foreign

317

00:19:35,190 --> 00:19:59,210

[Music]

318

00:20:03,409 --> 00:20:01,610

say the last again

319

00:20:17,110 --> 00:20:03,419

effort here we'll be moving to the uh

320

00:20:26,529 --> 00:20:20,750

Eric Houston on one you have a go in

321

00:20:31,789 --> 00:20:29,270

and I am going to the crew acting rescue

322

00:20:36,770 --> 00:20:31,799

card with rev changes

323

00:20:36,780 --> 00:20:49,750

okay dude on the UIA

324

00:20:49,760 --> 00:21:01,789

10 seconds

325

00:21:07,850 --> 00:21:04,669

okay for the next step defense pump

326
00:21:09,710 --> 00:21:07,860
manual valve open and expect an alert

327
00:21:18,909 --> 00:21:09,720
tone for both of you

328
00:21:18,919 --> 00:21:23,950
man I saw valves open

329
00:21:28,730 --> 00:21:26,630
and for both of you monitor your suit

330
00:21:31,490 --> 00:21:28,740
pressure gauge remains less than five

331
00:21:33,049 --> 00:21:31,500
decimal five let me go let me know if it

332
00:21:39,409 --> 00:21:33,059
goes above that

333
00:21:45,289 --> 00:21:42,770
and with that uh The Next Step will be

334
00:21:47,210 --> 00:21:45,299
at six PSI and you can expect an alert

335
00:21:51,649 --> 00:21:47,220
Zone at six

336
00:21:55,370 --> 00:21:53,450
so with that the crew lock is

337
00:21:59,149 --> 00:21:55,380
depressurizing as we speak it's going

338
00:22:01,130 --> 00:21:59,159

down from 14.7 PSI about the same

339

00:22:03,890 --> 00:22:01,140

pressure we find here at sea level on

340

00:22:06,830 --> 00:22:03,900

Earth and it's going down to about five

341

00:22:09,289 --> 00:22:06,840

um PSI uh you heard the note from Rubio

342

00:22:12,350 --> 00:22:09,299

to expect an alert tone at six uh five

343

00:22:22,270 --> 00:22:12,360

is the designated whole point scoring is

344

00:22:22,280 --> 00:22:29,289

[Music]

345

00:22:33,529 --> 00:22:32,090

and that hum you're hearing is the

346

00:22:36,490 --> 00:22:33,539

depressurization aboard the

347

00:22:36,500 --> 00:22:57,770

[Music]

348

00:22:57,780 --> 00:23:01,810

foreign

349

00:23:06,409 --> 00:23:04,190

to depressurize and get to that whole

350

00:23:07,789 --> 00:23:06,419

point uh Rubio will continue to monitor

351

00:23:09,529 --> 00:23:07,799

let's talk about the two space walking

352

00:23:11,630 --> 00:23:09,539

astronauts that are on the other side of

353

00:23:13,430 --> 00:23:11,640

the hatch right now again koichi bakada

354

00:23:15,590 --> 00:23:13,440

Japan Aerospace Exploration Agency

355

00:23:18,590 --> 00:23:15,600

astronaut very experienced astronaut but

356

00:23:20,570 --> 00:23:18,600

for him as well as for man on her first

357

00:23:23,810 --> 00:23:20,580

space flight this will be the first

358

00:23:25,250 --> 00:23:23,820

spacewalk for both of them the 250th

359

00:23:26,870 --> 00:23:25,260

Space Walk in support of space station

360

00:23:29,270 --> 00:23:26,880

assembly maintenance and upgrades the

361

00:23:32,149 --> 00:23:29,280

fifth for Expedition 68 and we are

362

00:23:35,210 --> 00:23:32,159

kicking off the New Year 2023 with this

363

00:23:38,210 --> 00:23:35,220

as the first spacewalk wakata of course

364

00:23:43,430 --> 00:23:38,220

is the fifth uh Japanese astronaut to

365

00:23:46,850 --> 00:23:44,990

um they are of course the two space

366

00:23:48,950 --> 00:23:46,860

walking astronauts but it does it takes

367

00:23:52,190 --> 00:23:48,960

more than two to tango for this kind of

368

00:23:54,230 --> 00:23:52,200

operation so there's a a plethora of

369

00:23:56,029 --> 00:23:54,240

support here on the ground as well as in

370

00:23:58,730 --> 00:23:56,039

Orbit on the far right you see Frank

371

00:24:00,470 --> 00:23:58,740

Rubio and Josh Casta as the uh suit and

372

00:24:02,390 --> 00:24:00,480

IVs the space walking support from

373

00:24:04,730 --> 00:24:02,400

inside the crew lock and we've been

374

00:24:06,470 --> 00:24:04,740

seeing them quite a bit uh from inside

375

00:24:08,390 --> 00:24:06,480

the International Space Station but here

376

00:24:10,850 --> 00:24:08,400

on the ground there are a lot of support

377

00:24:12,830 --> 00:24:10,860

Personnel but uh calling out namely

378

00:24:14,270 --> 00:24:12,840

Chloe Maring as a flight director

379

00:24:16,610 --> 00:24:14,280

leading all of the teams here in Mission

380

00:24:18,470 --> 00:24:16,620

Control Houston Keith Johnson knows the

381

00:24:19,970 --> 00:24:18,480

spacewalking procedures most intimately

382

00:24:22,310 --> 00:24:19,980

here in the room and works with support

383

00:24:24,529 --> 00:24:22,320

teams here in Mission Control Houston in

384

00:24:27,409 --> 00:24:24,539

other rooms and it'll be seen a card man

385

00:24:29,750 --> 00:24:27,419

uh who is a NASA astronaut as well as

386

00:24:31,789 --> 00:24:29,760

today's ground IV or the spacewalk

387

00:24:33,230 --> 00:24:31,799

communicator it'll be her voice that's

388

00:24:35,930 --> 00:24:33,240

taking all of the information from

389

00:24:39,409 --> 00:24:35,940

inside of this room and uh compiling it

390

00:24:41,149 --> 00:24:39,419

uh to speak with both wakata and man

391

00:24:44,930 --> 00:24:41,159

throughout the duration of today's space

392

00:24:49,909 --> 00:24:47,390

you can see the number of personnel that

393

00:24:51,890 --> 00:24:49,919

are here supporting the operation uh

394

00:24:54,169 --> 00:24:51,900

everyone watching as the crew lock

395

00:24:56,210 --> 00:24:54,179

continues to depressurize really we're

396

00:24:58,130 --> 00:24:56,220

just waiting and monitoring to see how

397

00:25:00,529 --> 00:24:58,140

that depressurization goes to that whole

398

00:25:02,450 --> 00:25:00,539

point you can hear those natural tones

399

00:25:04,730 --> 00:25:02,460

that are coming from the mics aboard the

400

00:25:06,470 --> 00:25:04,740

International Space Station now

401
00:25:08,750 --> 00:25:06,480
um as we continue to monitor that

402
00:25:12,529 --> 00:25:08,760
depressurization we're going towards 5

403
00:25:15,409 --> 00:25:12,539
PSI once again and at 5 PSI we're going

404
00:25:18,169 --> 00:25:15,419
to hold for just a little bit uh monitor

405
00:25:22,430 --> 00:25:18,179
the swings and and to see if there are

406
00:25:24,470 --> 00:25:22,440
any uh significant indications of any

407
00:25:25,970 --> 00:25:24,480
leaks or anything like that but if

408
00:25:27,890 --> 00:25:25,980
everything looks good then we'll

409
00:25:29,870 --> 00:25:27,900
continue down to vacuum but right now

410
00:25:41,750 --> 00:25:29,880
we're proceeding towards that five PSI

411
00:27:01,450 --> 00:26:45,350
foreign

412
00:27:07,070 --> 00:27:04,190
so the depressurization is a very slow

413
00:27:10,130 --> 00:27:07,080

process of course it is for safety

414

00:27:12,110 --> 00:27:10,140

reasons to make sure uh that the

415

00:27:13,370 --> 00:27:12,120

depressurization is being carefully

416

00:27:16,310 --> 00:27:13,380

monitored

417

00:27:18,350 --> 00:27:16,320

um and uh there's no adverse health

418

00:27:22,549 --> 00:27:18,360

effects as well for going

419

00:27:24,830 --> 00:27:22,559

um uh down to uh down to vacuum very

420

00:27:26,690 --> 00:27:24,840

very quickly right now we're a little

421

00:27:29,870 --> 00:27:26,700

less than eight pounds per square inch

422

00:27:33,590 --> 00:27:29,880

more closing in on where we may hear an

423

00:27:36,409 --> 00:27:33,600

alert tone uh from through the space to

424

00:27:37,850 --> 00:27:36,419

ground channels at the 6 PSI Mark uh and

425

00:27:44,110 --> 00:27:37,860

then we'll heading we're heading towards

426
00:27:50,269 --> 00:27:47,450
inside the uh Quest airlocks equipment

427
00:27:52,070 --> 00:27:50,279
lock that's on the side uh close uh

428
00:27:53,269 --> 00:27:52,080
closest to us from the hatch on the

429
00:27:55,370 --> 00:27:53,279
other side of the hatch of course are

430
00:27:57,710 --> 00:27:55,380
the two space walking astronauts uh

431
00:27:58,970 --> 00:27:57,720
currently that that section of the

432
00:28:01,549 --> 00:27:58,980
airlock the crew lock is being

433
00:28:04,610 --> 00:28:01,559
depressurized uh but on this side uh

434
00:28:06,590 --> 00:28:04,620
Rubio is monitoring the procedures he's

435
00:28:10,190 --> 00:28:06,600
only got a few left that he has to

436
00:28:11,810 --> 00:28:10,200
oversee as the um spacewalk support role

437
00:28:13,970 --> 00:28:11,820
from inside the International Space

438
00:28:15,350 --> 00:28:13,980

Station really just these last couple of

439

00:28:18,409 --> 00:28:15,360

steps to make sure that they're ready

440

00:28:20,269 --> 00:28:18,419

before he formally hands over uh the

441

00:28:22,789 --> 00:28:20,279

support role of talking with the crew

442

00:28:25,310 --> 00:28:22,799

with man and wakata the space walking

443

00:28:27,169 --> 00:28:25,320

astronauts he'll hand that roll over to

444

00:28:43,610 --> 00:28:27,179

Xena card man here in Mission Control

445

00:28:43,620 --> 00:30:16,490

foreign

446

00:30:21,350 --> 00:30:18,169

that's good

447

00:30:54,830 --> 00:30:21,360

good how are you good yes you sound a

448

00:30:54,840 --> 00:32:03,010

foreign

449

00:32:07,549 --> 00:32:05,750

is close

450

00:32:08,510 --> 00:32:07,559

okay and you can both expect an alert

451
00:32:13,010 --> 00:32:08,520
Zone

452
00:32:17,630 --> 00:32:15,590
okay next we will be conducting a lead

453
00:32:20,330 --> 00:32:17,640
check for this both of you will take

454
00:32:22,549 --> 00:32:20,340
your display status until leak check

455
00:32:26,409 --> 00:32:22,559
question mark is displayed then you'll

456
00:32:37,610 --> 00:32:26,419
select that with a two second es hold

457
00:32:42,350 --> 00:32:40,669
once you've selected it with a long yet

458
00:32:45,830 --> 00:32:42,360
then just follow the display

459
00:33:44,570 --> 00:32:47,750
Studio copy

460
00:33:50,149 --> 00:33:46,789
everyone needs are complete

461
00:33:52,909 --> 00:33:50,159
did utilities are complete

462
00:33:54,850 --> 00:33:52,919
okay copy for both great job

463
00:34:00,610 --> 00:33:54,860

savings

464

00:34:09,589 --> 00:34:03,289

that'll be your next step O2 actuator to

465

00:34:09,599 --> 00:34:20,629

51 Ultra Trader is immediate

466

00:34:20,639 --> 00:34:52,070

foreign

467

00:35:18,970 --> 00:34:58,790

open

468

00:35:24,650 --> 00:35:22,190

for those uh following along Rubio just

469

00:35:30,190 --> 00:35:24,660

walked the crew through the uh

470

00:35:34,930 --> 00:35:32,030

[Applause]

471

00:35:37,910 --> 00:35:34,940

okay guys starting at 25

472

00:35:40,730 --> 00:35:37,920

uh you're going to report the Edie hatch

473

00:35:44,250 --> 00:35:40,740

gauge and here's the overport the MVM

474

00:35:53,990 --> 00:35:44,260

readings at the intervals uh copies

475

00:35:58,790 --> 00:35:56,390

so for those following along uh the crew

476

00:36:01,370 --> 00:35:58,800

lock was depressurized to 5 PSI they

477

00:36:04,730 --> 00:36:01,380

held for a bit to check to make sure

478

00:36:08,750 --> 00:36:04,740

there was no leaks uh the hold at five

479

00:36:10,490 --> 00:36:08,760

PSI looked good so now the crew lock is

480

00:36:14,210 --> 00:36:10,500

continuing to depressurize right now

481

00:36:16,609 --> 00:36:14,220

we're under 4 PSI uh down to vacuum

482

00:36:18,170 --> 00:36:16,619

Ruby only has a couple more steps left

483

00:36:20,450 --> 00:36:18,180

to make sure these guys are ready to go

484

00:36:21,950 --> 00:36:20,460

now the hatch before handing it over to

485

00:36:24,470 --> 00:36:21,960

Xena Cardman here in Mission Control

486

00:36:26,210 --> 00:36:24,480

Houston uh who will take over the role

487

00:36:28,130 --> 00:36:26,220

of communicating with two space walking

488

00:36:30,109 --> 00:36:28,140

astronauts and guiding them through

489

00:36:56,089 --> 00:36:30,119

their uh procedures for the six and a

490

00:36:56,099 --> 00:37:18,060

foreign

491

00:37:18,070 --> 00:37:25,310

[Applause]

492

00:37:29,210 --> 00:37:27,470

okay I understand six with no change

493

00:37:45,890 --> 00:37:29,220

thanks Cody James we do see the pressure

494

00:37:45,900 --> 00:37:54,349

[Music]

495

00:38:08,589 --> 00:37:57,589

I feel the gauges showing a little less

496

00:38:08,599 --> 00:38:58,310

just above uh 2.0 PSI

497

00:39:01,910 --> 00:39:01,010

part of the role of Rubio in Casada is

498

00:39:04,310 --> 00:39:01,920

uh

499

00:39:05,930 --> 00:39:04,320

helping the two space walking astronauts

500

00:39:08,150 --> 00:39:05,940

through their procedures you can see on

501
00:39:11,210 --> 00:39:08,160
the iPad there he has in front of him uh

502
00:39:14,329 --> 00:39:11,220
Rubio is communicating with the two

503
00:39:16,190 --> 00:39:14,339
astronauts by way of that uh wired uh

504
00:39:18,829 --> 00:39:16,200
handheld microphone

505
00:39:23,410 --> 00:39:18,839
um into the microphones that are

506
00:39:27,170 --> 00:39:23,420
attached to the helmets inside the uh

507
00:39:29,930 --> 00:39:27,180
crew airlock the emu's the spacewalk the

508
00:39:33,290 --> 00:39:29,940
spacesuits that they have on

509
00:39:34,910 --> 00:39:33,300
his job is to uh Monitor and walk them

510
00:39:37,790 --> 00:39:34,920
through those procedures the ground

511
00:39:39,650 --> 00:39:37,800
teams of course are listening to the

512
00:39:40,910 --> 00:39:39,660
communication throughout and following

513
00:39:43,810 --> 00:39:40,920

along

514

00:39:48,170 --> 00:39:46,270

teams of course are

515

00:39:50,390 --> 00:39:48,180

listening to all the data making

516

00:39:52,150 --> 00:39:50,400

decisions as to what is the best course

517

00:40:06,230 --> 00:39:52,160

of

518

00:40:11,750 --> 00:40:07,810

yeah 105

519

00:40:11,760 --> 00:40:39,890

millimeters of mercury

520

00:40:44,030 --> 00:40:42,230

because when I asked for the next

521

00:40:46,849 --> 00:40:44,040

lecture you will also be taking the

522

00:41:45,490 --> 00:40:46,859

deeper into an ISO valves for clothes

523

00:41:50,750 --> 00:41:48,290

as we mentioned before uh we'll likely

524

00:41:52,430 --> 00:41:50,760

have these intermittent interruptions uh

525

00:41:54,650 --> 00:41:52,440

of video from the International Space

526

00:41:56,930 --> 00:41:54,660

Station as the orbiting complex

527

00:42:01,190 --> 00:41:56,940

continues to circle the Earth right now

528

00:42:03,589 --> 00:42:01,200

uh where over uh central Africa heading

529

00:42:05,930 --> 00:42:03,599

on a Northeastern track uh in an orbital

530

00:42:07,730 --> 00:42:05,940

daytime uh right now handing over

531

00:42:09,890 --> 00:42:07,740

between some of the tracking and data

532

00:42:15,730 --> 00:42:09,900

relay satellites you see as icons there

533

00:42:21,349 --> 00:42:18,589

thank you

534

00:42:22,730 --> 00:42:21,359

we're still getting some audio over the

535

00:42:24,829 --> 00:42:22,740

space to ground networks which is good

536

00:42:26,750 --> 00:42:24,839

we'll be gaining video regaining videos

537

00:42:30,050 --> 00:42:26,760

shortly

538

00:42:31,130 --> 00:42:30,060

uh in the meantime the flight

539

00:42:33,230 --> 00:42:31,140

controllers here in Mission Control

540

00:42:34,970 --> 00:42:33,240

Houston are receiving data from the

541

00:42:37,490 --> 00:42:34,980

International Space Station by way of

542

00:42:38,930 --> 00:42:37,500

s-van communication uh that we're

543

00:42:40,970 --> 00:42:38,940

getting from the tracking and data relay

544

00:42:45,050 --> 00:42:40,980

satellites uh right now it looks like

545

00:42:47,569 --> 00:42:45,060

the crew lock is down to just below one

546

00:42:49,990 --> 00:42:47,579

and a half PSI it is

547

00:42:56,450 --> 00:42:50,000

um much slower the progression

548

00:42:58,550 --> 00:42:56,460

from five to vacuum versus from 14.75

549

00:43:00,710 --> 00:42:58,560

it's very methodical down to vacuum so

550

00:43:02,630 --> 00:43:00,720

they can monitor every step of the way

551
00:43:05,390 --> 00:43:02,640
and of course ground teams here are

552
00:43:07,309 --> 00:43:05,400
monitoring as well

553
00:43:09,589 --> 00:43:07,319
during the down period though Cassidy

554
00:43:11,690 --> 00:43:09,599
does have an opportunity to

555
00:44:02,710 --> 00:43:11,700
show off some of the microgravity skills

556
00:44:08,450 --> 00:44:06,109
okay guys I show one decimal two key

557
00:44:11,569 --> 00:44:08,460
press pumps man ISO valves is closed and

558
00:44:21,950 --> 00:44:16,010
great great shows

559
00:44:21,960 --> 00:44:29,390
okay

560
00:44:34,670 --> 00:44:32,990
copy one decimal two and six two and

561
00:44:38,690 --> 00:44:34,680
defense thought man I survive his

562
00:44:48,550 --> 00:44:42,290
and you can now take the defense pump

563
00:44:48,560 --> 00:45:19,370

power is off

564

00:45:23,450 --> 00:45:21,230

the next pressure we'll be looking for

565

00:45:24,829 --> 00:45:23,460

is one decimal zero PSI that should be

566

00:47:29,270 --> 00:45:24,839

coming up shortly

567

00:47:32,510 --> 00:47:31,370

Rubio and cassida in the equipment law

568

00:47:34,730 --> 00:47:32,520

continuing to monitor the

569

00:47:37,370 --> 00:47:34,740

depressurization we are closing in on

570

00:47:40,670 --> 00:47:37,380

one PSI and just got about a half a

571

00:47:42,470 --> 00:47:40,680

pound of square inch of pressure to go

572

00:47:43,970 --> 00:47:42,480

um the rate itself has slowed down

573

00:47:47,569 --> 00:47:43,980

significantly

574

00:47:49,250 --> 00:47:47,579

um but once we reach that 0.5 PSI uh

575

00:47:51,050 --> 00:47:49,260

Rubio just has a couple of more

576

00:47:53,450 --> 00:47:51,060

procedures before handing it over to

577

00:47:54,530 --> 00:47:53,460

cardmen here on the ground to walk uh

578

00:47:56,990 --> 00:47:54,540

the astronauts through their tether

579

00:47:59,030 --> 00:47:57,000

configuration and get the hatch open to

580

00:48:00,410 --> 00:47:59,040

get started with a spacewalk

581

00:48:03,170 --> 00:48:00,420

um very soon

582

00:48:05,510 --> 00:48:03,180

the spacewalk itself though is part of a

583

00:48:07,430 --> 00:48:05,520

series we've had a lot of space walks

584

00:48:09,050 --> 00:48:07,440

just like this to upgrade the Power

585

00:48:11,750 --> 00:48:09,060

Systems of the International Space

586

00:48:14,210 --> 00:48:11,760

Station uh and we've conducted several

587

00:48:16,849 --> 00:48:14,220

so far here is the plan as we have it

588

00:48:20,990 --> 00:48:16,859

today uh you can see on the far right in

589

00:48:23,569 --> 00:48:21,000

blue the 4b3a 4A and 2B channels have

590

00:48:26,930 --> 00:48:23,579

irosa solar arrays installed and

591

00:48:29,630 --> 00:48:26,940

operational so that's for new arrays

592

00:48:32,089 --> 00:48:29,640

the uh space walking astronauts today

593

00:48:34,250 --> 00:48:32,099

will be working on the 1A and 1B power

594

00:48:36,050 --> 00:48:34,260

channels on 1B

595

00:48:38,270 --> 00:48:36,060

um they already have Mount the mounting

596

00:48:45,309 --> 00:48:38,280

platform installed on the male Mass

597

00:48:52,849 --> 00:48:48,829

Temptations 5-0

598

00:48:55,430 --> 00:48:52,859

copy one decimal zero and five zero and

599

00:48:57,170 --> 00:48:55,440

and wait for the next measure which will

600

00:48:59,630 --> 00:48:57,180

be point eight you guys can give your

601
00:49:03,470 --> 00:48:59,640
initial credit config to zoom

602
00:49:08,270 --> 00:49:05,450
you heard that

603
00:49:12,170 --> 00:49:08,280
good morning ready for the uh better

604
00:49:17,450 --> 00:49:12,180
config good morning 81 and ev2 I am with

605
00:49:22,089 --> 00:49:19,190
all right

606
00:49:26,210 --> 00:49:22,099
today I will start with my uh

607
00:49:31,970 --> 00:49:29,690
that's to my left knee to remember they

608
00:49:35,089 --> 00:49:31,980
close the clock

609
00:49:37,790 --> 00:49:35,099
and the uh left right there there's lots

610
00:49:57,370 --> 00:49:37,800
hookers attached to

611
00:49:57,380 --> 00:50:06,950
[Music]

612
00:50:06,960 --> 00:50:09,230
hook

613
00:50:14,809 --> 00:50:11,450

at the anchor Hook is attached to my

614

00:50:25,190 --> 00:50:14,819

mini workstation and both reels are in

615

00:50:32,690 --> 00:50:29,809

if you answer the config report complete

616

00:50:35,210 --> 00:50:32,700

could you copy all that is a good config

617

00:50:37,550 --> 00:50:35,220

we are also expecting your right waist

618

00:50:42,470 --> 00:50:37,560

tether but that's not part of the load

619

00:50:59,950 --> 00:50:46,430

okay yeah copy that the right weight

620

00:50:59,960 --> 00:51:05,589

Ed notification

621

00:51:09,589 --> 00:51:08,270

that's a great config for you and Duke

622

00:51:14,390 --> 00:51:09,599

when you're ready we'll take yours as

623

00:51:18,290 --> 00:51:16,910

okay starting on my left side I have a

624

00:51:27,250 --> 00:51:18,300

left Place Center

625

00:51:27,260 --> 00:51:34,730

Instagram extender

626
00:51:44,690 --> 00:51:37,800
okay and for 82 both reels are unlocked

627
00:51:49,309 --> 00:51:47,809
okay ev1 and ev2 that is a good config

628
00:51:51,770 --> 00:51:49,319
for you both we're continuing with the

629
00:51:54,290 --> 00:51:51,780
depress and Frank you'll still own the

630
00:52:02,990 --> 00:51:54,300
PCS pressures I'll be ready to step in

631
00:52:16,970 --> 00:52:07,849
10 my PCB is back at four

632
00:52:16,980 --> 00:52:43,930
foreign

633
00:52:47,809 --> 00:52:46,790
Mission Control Houston is that of Xena

634
00:52:51,170 --> 00:52:47,819
Cardman

635
00:52:53,329 --> 00:52:51,180
uh NASA astronaut she's walking the uh

636
00:52:54,890 --> 00:52:53,339
astronauts through the first of their

637
00:52:56,150 --> 00:52:54,900
procedures before they open up the

638
00:52:57,290 --> 00:52:56,160

hatches to check their tethered

639

00:52:59,270 --> 00:52:57,300

configuration

640

00:53:01,309 --> 00:52:59,280

um space Walkers are attached to the

641

00:53:04,250 --> 00:53:01,319

International Space Station at all times

642

00:53:05,809 --> 00:53:04,260

by way of tether uh and so the very

643

00:53:09,170 --> 00:53:05,819

first thing that they do before they

644

00:53:10,790 --> 00:53:09,180

exit the hatch is to make sure that all

645

00:53:12,589 --> 00:53:10,800

of the tethers that keep them anchored

646

00:53:15,770 --> 00:53:12,599

to the International Space Station look

647

00:53:18,230 --> 00:53:15,780

good so before they exit out the hatch

648

00:53:20,630 --> 00:53:18,240

they know they will be anchored to the

649

00:53:22,609 --> 00:53:20,640

space station and they uh reels are

650

00:53:25,430 --> 00:53:22,619

configured such that they can easily

651
00:53:28,670 --> 00:53:25,440
translate or move out to their workplace

652
00:53:33,589 --> 00:53:28,680
which is uh on the starboard side of the

653
00:53:33,599 --> 00:53:37,040
foreign

654
00:53:37,050 --> 00:54:33,950
[Music]

655
00:54:33,960 --> 00:54:44,640
foreign

656
00:54:44,650 --> 00:55:01,960
[Music]

657
00:55:01,970 --> 00:55:25,490
[Applause]

658
00:55:31,130 --> 00:55:28,130
allocation number one uh we've been

659
00:55:34,309 --> 00:55:31,140
monitoring the rate and it looks like uh

660
00:55:42,829 --> 00:55:34,319
it is about what we expected so expect

661
00:55:42,839 --> 00:55:56,930
give him a puppy

662
00:56:09,170 --> 00:56:00,470
and EBT has a super high

663
00:56:09,180 --> 00:56:22,730

O2 rate 0.3 and sop rate zero

664

00:56:27,049 --> 00:56:25,309

Duke we copy that that's normal and

665

00:57:16,910 --> 00:56:27,059

expected in this configuration you can

666

00:57:22,250 --> 00:57:19,309

we're continuing to uh Stand By and

667

00:57:24,829 --> 00:57:22,260

monitor the methodical depressurization

668

00:57:27,950 --> 00:57:24,839

from five pounds per square inch down to

669

00:57:31,490 --> 00:57:27,960

vacuum the goal though is about a half a

670

00:57:32,870 --> 00:57:31,500

PSI uh right at that marker they'll

671

00:57:34,309 --> 00:57:32,880

start going through procedures to get

672

00:57:37,910 --> 00:57:34,319

ready to open up the hatch it doesn't

673

00:57:40,069 --> 00:57:37,920

necessarily need to go down to 0.0 0.5

674

00:57:42,349 --> 00:57:40,079

is the target so we've got a couple more

675

00:57:45,410 --> 00:57:42,359

minutes until we get down uh to that

676
00:57:46,790 --> 00:57:45,420
spot but in the meantime uh Frank Rubio

677
00:57:48,589 --> 00:57:46,800
and Josh Cassidy you see in the

678
00:57:50,809 --> 00:57:48,599
equipment lock they're gonna see this

679
00:57:53,150 --> 00:57:50,819
all the way through until Xena Cartman

680
00:57:56,990 --> 00:57:53,160
uh takes over uh and then they'll be

681
00:57:59,270 --> 00:57:57,000
able to go about their work day while uh

682
00:58:01,730 --> 00:57:59,280
man and wakata go outside the

683
00:58:03,950 --> 00:58:01,740
International Space Station uh to work

684
00:58:10,670 --> 00:58:03,960
on the mounting platforms for future

685
00:58:15,109 --> 00:58:12,650
throughout today's spacewalk you'll hear

686
00:58:18,710 --> 00:58:15,119
it seems uh the they'll be referring to

687
00:58:21,530 --> 00:58:18,720
ev1 koichiwakata as koichi and ev2

688
00:58:24,170 --> 00:58:21,540

Nicole Mann as duke or call sign Duke so

689

00:58:26,750 --> 00:58:24,180

if you hear Duke uh on the space to

690

00:58:28,609 --> 00:58:26,760

ground networks that's referring to uh

691

00:58:31,370 --> 00:58:28,619

NASA astronaut Nicole man you see there

692

00:58:33,530 --> 00:58:31,380

on the right serving as ev2 she'll be

693

00:58:35,870 --> 00:58:33,540

the wearing the suit with no stripes and

694

00:58:38,589 --> 00:58:35,880

then wakata with the suit with the red

695

00:58:45,049 --> 00:58:42,650

again these are part of a grander plan

696

00:58:47,390 --> 00:58:45,059

of augmenting the station's solar arrays

697

00:58:49,910 --> 00:58:47,400

with new solar rays and generating much

698

00:58:51,530 --> 00:58:49,920

more power to continue uh life and

699

00:58:53,630 --> 00:58:51,540

research aboard the International Space

700

00:58:55,549 --> 00:58:53,640

Station Four have been installed already

701
00:58:59,150 --> 00:58:55,559
you see the power channels marked in

702
00:59:01,549 --> 00:58:59,160
blue they all have power channels and

703
00:59:03,770 --> 00:59:01,559
then the the two space walking

704
00:59:07,190 --> 00:59:03,780
astronauts will be working on the 1B and

705
00:59:09,410 --> 00:59:07,200
1A power channels 1B already has the

706
00:59:13,010 --> 00:59:09,420
mounting platform installed it just has

707
00:59:15,650 --> 00:59:13,020
a couple a couple more steps to consider

708
00:59:18,589 --> 00:59:15,660
that ready to go including working on

709
00:59:20,809 --> 00:59:18,599
collars and cables uh that's expected to

710
00:59:22,490 --> 00:59:20,819
just take the first hour once they get

711
00:59:25,190 --> 00:59:22,500
out to the work site of the first hour

712
00:59:27,289 --> 00:59:25,200
of koichi wakata's procedures Nicole man

713
00:59:29,809 --> 00:59:27,299

though won't join him at the 1B power

714

00:59:31,490 --> 00:59:29,819

Channel she'll go right over to 1A and

715

00:59:33,470 --> 00:59:31,500

start getting that worksite prepped

716

00:59:36,109 --> 00:59:33,480

because that's where the two space

717

00:59:37,970 --> 00:59:36,119

walking astronauts are will spend the

718

00:59:39,829 --> 00:59:37,980

most of their time they'll be over at

719

00:59:42,530 --> 00:59:39,839

the 1A power Channel completely

720

00:59:44,510 --> 00:59:42,540

constructing the mounting platform and

721

00:59:47,450 --> 00:59:44,520

installing it to something called a mass

722

00:59:51,470 --> 00:59:47,460

canister these are sort of soda can

723

00:59:54,049 --> 00:59:51,480

shaped structures that deployed the

724

00:59:56,270 --> 00:59:54,059

original Legacy solar arrays this

725

01:00:00,230 --> 00:59:56,280

mounting platform is is really just a

726

01:00:02,510 --> 01:00:00,240

modification to allow the new irosa

727

01:00:05,390 --> 01:00:02,520

solar arrays to sit nicely on that top

728

01:00:07,789 --> 01:00:05,400

mounting bracket the solar arrays

729

01:00:09,589 --> 01:00:07,799

themselves sort of fold out they're

730

01:00:13,130 --> 01:00:09,599

they're folded kind of in half in order

731

01:00:14,750 --> 01:00:13,140

to fit inside the SpaceX Dragon for

732

01:00:17,030 --> 01:00:14,760

delivery to the International Space

733

01:00:19,190 --> 01:00:17,040

Station which on this graphic is at the

734

01:00:21,170 --> 01:00:19,200

very top of the International Space

735

01:00:23,510 --> 01:00:21,180

Station

736

01:00:26,270 --> 01:00:23,520

um it's retrieved by robotic arm and

737

01:00:28,190 --> 01:00:26,280

then brought out to the work sites for

738

01:00:29,630 --> 01:00:28,200

astronauts to install at a later date

739

01:00:32,329 --> 01:00:29,640

we're looking at the summer for this

740

01:00:34,069 --> 01:00:32,339

year for the new solar arrays for the 1B

741

01:00:35,750 --> 01:00:34,079

and 1A power channels to come up and be

742

01:00:37,130 --> 01:00:35,760

installed but for now we're doing all

743

01:00:40,789 --> 01:00:37,140

the prep work

744

01:00:43,609 --> 01:00:40,799

um so man and wakata will be uh working

745

01:00:47,450 --> 01:00:43,619

on those 1B and 1A power channels ahead

746

01:00:51,890 --> 01:00:50,150

there are a few get aheads as well just

747

01:00:54,470 --> 01:00:51,900

in case they get ahead of the timeline

748

01:00:57,049 --> 01:00:54,480

there's a budgeted six and a half hours

749

01:00:59,150 --> 01:00:57,059

but uh they'll be the teams here on the

750

01:01:01,789 --> 01:00:59,160

ground will continue to monitor

751

01:01:03,349 --> 01:01:01,799

um consumables and other factors to

752

01:01:05,569 --> 01:01:03,359

decide whether or not they want to do

753

01:01:07,789 --> 01:01:05,579

some of these get ahead tasks uh you see

754

01:01:09,829 --> 01:01:07,799

there's a jumper install there's a tool

755

01:01:11,690 --> 01:01:09,839

that's on the special purpose dexterous

756

01:01:13,069 --> 01:01:11,700

manipulator the one of the robotic arms

757

01:01:14,990 --> 01:01:13,079

on the outside of the space station that

758

01:01:17,750 --> 01:01:15,000

they're going to retrieve and bring back

759

01:01:19,309 --> 01:01:17,760

into the airlock for um so so they can

760

01:01:21,230 --> 01:01:19,319

bring it down for refurbishment so

761

01:01:23,089 --> 01:01:21,240

they're gonna just they can maybe have

762

01:01:25,430 --> 01:01:23,099

time to get one of those tools and then

763

01:01:27,770 --> 01:01:25,440

there's a couple of other items

764

01:01:31,309 --> 01:01:27,780

um that the space Walkers may be able to

765

01:01:34,490 --> 01:01:31,319

get to they can be put at the end of the

766

01:01:36,950 --> 01:01:34,500

timeline there also are opportunities

767

01:01:39,470 --> 01:01:36,960

um for the astronauts to do it sometime

768

01:01:41,390 --> 01:01:39,480

in the middle of their timeline that's

769

01:01:43,609 --> 01:01:41,400

where spacewalk officer Keith Johnson

770

01:01:45,109 --> 01:01:43,619

really comes into play uh here in

771

01:01:46,970 --> 01:01:45,119

Mission Control Houston he's looking at

772

01:01:49,789 --> 01:01:46,980

these procedures and he'll be working

773

01:01:51,829 --> 01:01:49,799

with his teams to recommend the best

774

01:01:52,849 --> 01:01:51,839

course of action of course Chloe Maring

775

01:01:55,309 --> 01:01:52,859

the flight director here in Mission

776

01:01:56,809 --> 01:01:55,319

Control Houston has the ultimate say as

777

01:01:58,970 --> 01:01:56,819

to whether or not they proceed with that

778

01:02:00,950 --> 01:01:58,980

and then it'll be the voice of Xena

779

01:02:02,870 --> 01:02:00,960

Cardman here to communicate that up to

780

01:02:04,609 --> 01:02:02,880

the crew but here's Keith Johnson he's

781

01:02:07,510 --> 01:02:04,619

sitting in the back of the room

782

01:02:10,190 --> 01:02:07,520

um he is the sort of front room person

783

01:02:12,530 --> 01:02:10,200

he's got a whole support team behind him

784

01:02:14,809 --> 01:02:12,540

uh that are looking at the procedures

785

01:02:17,630 --> 01:02:14,819

and making these recommendations all

786

01:02:19,549 --> 01:02:17,640

with their own Specialties but it is it

787

01:02:23,870 --> 01:02:19,559

is his recommendation that flight

788

01:02:26,329 --> 01:02:23,880

director Chloe Maring will be relying on

789

01:02:28,010 --> 01:02:26,339

next to flight director Chloe Maring is

790

01:02:31,370 --> 01:02:28,020

another flight director Anthony varia

791

01:02:32,809 --> 01:02:31,380

monitoring today's tasks as well

792

01:02:35,510 --> 01:02:32,819

they are seated at the flight director

793

01:02:37,250 --> 01:02:35,520

console and of course to their right uh

794

01:02:39,890 --> 01:02:37,260

their Xena cardmen it'll be her voice

795

01:02:41,930 --> 01:02:39,900

that'll be the ground IV uh The Voice

796

01:02:43,730 --> 01:02:41,940

from here in Mission Control Houston up

797

01:02:46,490 --> 01:02:43,740

to the two space mocking astronauts we

798

01:02:48,470 --> 01:02:46,500

did hear a little bit of Aki hoshide to

799

01:02:49,910 --> 01:02:48,480

her right to cardsman's right

800

01:02:51,650 --> 01:02:49,920

um he's he'll be here in the room as

801
01:02:53,990 --> 01:02:51,660
well we won't hear his voice as much

802
01:02:55,670 --> 01:02:54,000
because it's his job to be the Capcom

803
01:02:56,990 --> 01:02:55,680
for the astronauts that are on the

804
01:02:59,510 --> 01:02:57,000
inside of the International Space

805
01:03:01,190 --> 01:02:59,520
Station of course Casada and Rubio now

806
01:03:02,750 --> 01:03:01,200
helping out the two space walking

807
01:03:04,670 --> 01:03:02,760
astronauts to get them sort of out the

808
01:03:07,309 --> 01:03:04,680
door but they have a whole day uh

809
01:03:09,470 --> 01:03:07,319
themselves of activities so they'll be

810
01:03:10,430 --> 01:03:09,480
talking with uh Aki hoshide on the

811
01:03:12,530 --> 01:03:10,440
inside

812
01:03:15,349 --> 01:03:12,540
today though we'll be following the

813
01:03:17,089 --> 01:03:15,359

intricate steps of today's space walk uh

814

01:03:20,750 --> 01:03:17,099

still monitoring the depressurization

815

01:03:23,690 --> 01:03:20,760

it's uh it is a methodical and slow

816

01:03:25,910 --> 01:03:23,700

procedure so we're we're very patiently

817

01:03:29,030 --> 01:03:25,920

waiting for that five PSR Mark we still

818

01:03:32,930 --> 01:03:29,040

got a about a little more than one PSI

819

01:03:35,089 --> 01:03:32,940

to go we're sitting at uh about 0.65 PSI

820

01:03:37,370 --> 01:03:35,099

so a couple more minutes until that's

821

01:03:39,470 --> 01:03:37,380

down and then we'll hear the next steps

822

01:03:42,730 --> 01:03:39,480

uh to get these two spacewalkers out the

823

01:03:42,740 --> 01:03:47,569

five to six

824

01:03:47,579 --> 01:04:26,569

copy tcv6 koichi

825

01:04:31,250 --> 01:04:28,849

they're allocation on one for the deep

826

01:04:34,190 --> 01:04:31,260

rest this uh it's taking a little longer

827

01:04:37,130 --> 01:04:34,200

than what we expected so we'll get a

828

01:04:39,950 --> 01:04:37,140

last reading at this point and then

829

01:04:43,250 --> 01:04:39,960

after that is complete we'll take the uh

830

01:04:51,609 --> 01:04:43,260

Emer MF to open in addition to leaving

831

01:04:51,619 --> 01:05:00,370

we can copy

832

01:05:00,380 --> 01:05:04,380

reading is 28.

833

01:05:10,430 --> 01:05:06,770

[Applause]

834

01:05:10,440 --> 01:05:14,390

0.7

835

01:05:19,490 --> 01:05:17,390

okay all right copy both and we are just

836

01:05:32,390 --> 01:05:19,500

slightly above all pressure I'll let you

837

01:05:43,190 --> 01:05:35,870

and Frank will take uh your PCS reading

838

01:05:46,309 --> 01:05:45,140

two decimal free

839

01:05:48,349 --> 01:05:46,319

[Applause]

840

01:05:50,690 --> 01:05:48,359

okay copy that and then uh yeah you're

841

01:05:57,430 --> 01:05:50,700

doing it so uh it's an action for you to

842

01:05:57,440 --> 01:06:09,349

coming over

843

01:06:09,359 --> 01:06:25,190

here's a copy

844

01:06:29,809 --> 01:06:27,109

for those following along we are

845

01:06:32,450 --> 01:06:29,819

monitoring the depressurization

846

01:06:34,970 --> 01:06:32,460

um uh if for those who are familiar with

847

01:06:37,490 --> 01:06:34,980

the depressurization prior to a

848

01:06:39,589 --> 01:06:37,500

spacewalk uh right now this is what

849

01:06:42,710 --> 01:06:39,599

they're undergoing is a sort of a new

850

01:06:46,549 --> 01:06:42,720

way a test way of depressurizing uh for

851
01:06:49,069 --> 01:06:46,559
the future so the emergency EMP is is a

852
01:06:51,950 --> 01:06:49,079
is a hatch but it is we're not in an

853
01:06:54,710 --> 01:06:51,960
emergency by any means this is just a

854
01:06:57,470 --> 01:06:54,720
new uh approach to that they're testing

855
01:06:59,690 --> 01:06:57,480
out for this particular spacewalk

856
01:07:04,670 --> 01:06:59,700
okay just to clarify do you still want

857
01:07:04,680 --> 01:07:19,309
and negative on that Frank

858
01:07:24,829 --> 01:07:21,410
all right so I think with that completes

859
01:07:25,849 --> 01:07:24,839
our duties as IV what would you do good

860
01:07:28,549 --> 01:07:25,859
luck you guys are gonna kill it out

861
01:07:30,490 --> 01:07:28,559
there I'll be back in great thank you

862
01:07:43,549 --> 01:07:30,500
Frank and Josh

863
01:07:46,670 --> 01:07:45,349

look which I'm gonna turn on my right

864

01:07:48,230 --> 01:07:46,680

shoulder a little bit to give you some

865

01:07:49,730 --> 01:07:48,240

more room for the hats you feel like

866

01:07:54,549 --> 01:07:49,740

you're in a good position when it's gone

867

01:07:54,559 --> 01:07:59,870

to hold your feet just let me know okay

868

01:07:59,880 --> 01:08:05,450

now okay

869

01:08:10,730 --> 01:08:08,569

and Frank before you go

870

01:08:13,910 --> 01:08:10,740

once the crew lock is at approximately

871

01:08:16,970 --> 01:08:13,920

DP DT zero you are going to close the

872

01:08:19,010 --> 01:08:16,980

Emer hatch mpev the Emer empev

873

01:08:25,070 --> 01:08:19,020

and koichi will be closing the Ed hatch

874

01:08:27,410 --> 01:08:26,209

y

875

01:08:32,169 --> 01:08:27,420

um appreciate it we're not going

876

01:08:38,689 --> 01:08:35,030

that's after we open the habies all

877

01:08:40,849 --> 01:08:38,699

right to close the EV internet

878

01:08:45,590 --> 01:08:40,859

thank you

879

01:08:50,329 --> 01:08:45,600

okay so uh after had to open uh

880

01:09:13,370 --> 01:08:53,030

that is correct Gucci

881

01:09:17,630 --> 01:09:15,650

right now inside the crew log the two

882

01:09:19,189 --> 01:09:17,640

space walking astronauts uh are on the

883

01:09:21,229 --> 01:09:19,199

other side of that hatch that's the crew

884

01:09:22,669 --> 01:09:21,239

lock they're facing opposite directions

885

01:09:25,610 --> 01:09:22,679

so

886

01:09:28,729 --> 01:09:25,620

um it's actually koichiwakata the ev1

887

01:09:30,950 --> 01:09:28,739

position with the red stripes when the

888

01:09:35,590 --> 01:09:30,960

crew lock dpdt is approximately zero you

889

01:09:35,600 --> 01:09:54,980

maybe two copies

890

01:09:54,990 --> 01:10:05,209

[Music]

891

01:10:12,830 --> 01:10:08,990

okay crew we show you less than 0.5 PSI

892

01:10:15,770 --> 01:10:12,840

you are go to open and Stow the EV hatch

893

01:10:18,110 --> 01:10:15,780

koichi you'll then close the EB hatch

894

01:10:28,390 --> 01:10:18,120

empez and Frank you'll close the

895

01:10:28,400 --> 01:10:51,950

down a little bit okay

896

01:10:51,960 --> 01:11:04,750

foreign

897

01:11:09,350 --> 01:11:06,709

look at the outside of the International

898

01:11:11,510 --> 01:11:09,360

Space Station now uh the International

899

01:11:13,070 --> 01:11:11,520

Space Station in orbital night time so

900

01:11:15,649 --> 01:11:13,080

it's being illuminated by the lights

901
01:11:16,669 --> 01:11:15,659
outside uh right now we're zoomed in on

902
01:11:17,930 --> 01:11:16,679
the hatch

903
01:11:20,270 --> 01:11:17,940
um

904
01:11:21,709 --> 01:11:20,280
the thermal cover is still covering the

905
01:11:24,169 --> 01:11:21,719
hatch but we did get confirmation the

906
01:11:26,810 --> 01:11:24,179
hatch itself is open

907
01:11:28,970 --> 01:11:26,820
again the official start time of the

908
01:11:57,050 --> 01:11:28,980
spacewalk does not occur until the

909
01:12:04,590 --> 01:11:58,149
Ed

910
01:12:04,600 --> 01:12:11,990
[Applause]

911
01:12:12,000 --> 01:12:18,640
[Music]

912
01:12:18,650 --> 01:12:37,729
[Applause]

913
01:12:42,970 --> 01:12:40,189

Instagram is also closed

914

01:12:46,370 --> 01:12:42,980

okay copy emergency

915

01:12:49,910 --> 01:12:46,380

is closed all right with that

916

01:12:52,130 --> 01:12:49,920

ev1 and ev2 on your DCM switch power to

917

01:12:56,190 --> 01:12:52,140

bat stagger your switch throws and

918

01:12:56,200 --> 01:13:02,450

[Music]

919

01:13:02,460 --> 01:13:11,270

easy

920

01:13:16,910 --> 01:13:14,810

copy ev1 and 2 are in battery switch

921

01:13:22,149 --> 01:13:16,920

your display to Pro to verify a

922

01:13:22,159 --> 01:13:28,970

s APK

923

01:13:36,530 --> 01:13:32,270

copying on the UIA switch power for ev1

924

01:13:51,530 --> 01:13:36,540

and 2 off and check that the LEDs for

925

01:14:00,050 --> 01:13:53,050

come on

926

01:14:09,229 --> 01:14:03,470

copy disconnect your SCU from your DCM

927

01:14:09,239 --> 01:14:23,330

copies didn't work

928

01:14:23,340 --> 01:14:38,950

foreign

929

01:14:44,630 --> 01:14:42,050

with that the uh

930

01:14:46,910 --> 01:14:44,640

two space walkers have switched their uh

931

01:14:48,530 --> 01:14:46,920

spacesuit powers to battery that marks

932

01:14:51,470 --> 01:14:48,540

the official start for today's space

933

01:14:54,950 --> 01:14:51,480

walk we got a clock up on the board and

934

01:14:57,709 --> 01:14:54,960

so we're looking at 7 14 a.m central

935

01:15:01,130 --> 01:14:57,719

time for the official start of today's

936

01:15:01,140 --> 01:15:30,790

foreign

937

01:15:37,189 --> 01:15:34,430

TV show just connected instruments

938

01:15:39,229 --> 01:15:37,199

okay copy your su's or disconnected and

939

01:15:54,530 --> 01:15:39,239

stowed and make sure you have your DCM

940

01:16:05,570 --> 01:15:56,570

check depressed pump man ISO valves

941

01:16:05,580 --> 01:16:12,590

man I feel about clothes

942

01:16:12,600 --> 01:16:18,169

for temperature control valve to Max hot

943

01:16:18,179 --> 01:16:39,870

TV left be work

944

01:16:39,880 --> 01:16:49,370

[Applause]

945

01:16:49,380 --> 01:16:59,450

foreign

946

01:16:59,460 --> 01:17:12,310

[Applause]

947

01:17:25,550 --> 01:17:15,350

waters on

948

01:17:30,530 --> 01:17:27,470

set your temperature control valve as

949

01:17:35,780 --> 01:17:30,540

desired report to MCC and reminder to

950

01:17:35,790 --> 01:17:51,530

[Music]

951
01:18:04,490 --> 01:17:55,490
four

952
01:18:04,500 --> 01:18:12,830
um

953
01:18:18,110 --> 01:18:15,770
copy 4.3 for both of you

954
01:18:25,330 --> 01:18:18,120
set your visors as required you'll be

955
01:18:25,340 --> 01:18:56,750
thank you

956
01:19:00,890 --> 01:18:59,209
okay crew with that you are ready to

957
01:19:02,990 --> 01:19:00,900
open the hatch thermal cover

958
01:19:05,209 --> 01:19:03,000
you'll release the hook from the

959
01:19:06,950 --> 01:19:05,219
magnetic plate d-ring attach the hook to

960
01:19:08,570 --> 01:19:06,960
the stowage tether point and cinch the

961
01:19:16,140 --> 01:19:08,580
strap until it's snug with six lines

962
01:19:22,430 --> 01:19:18,770
[Applause]

963
01:19:25,310 --> 01:19:22,440

makata now pushing the uh fabric thermal

964

01:19:26,630 --> 01:19:25,320

cover that's on the outside of the cool

965

01:19:28,669 --> 01:19:26,640

locks hatch

966

01:19:31,729 --> 01:19:28,679

see him pushing that sort of out of the

967

01:19:33,229 --> 01:19:31,739

way the hatch is open all the steps that

968

01:19:36,169 --> 01:19:33,239

they've been doing up to this point is

969

01:19:37,850 --> 01:19:36,179

really um the closeout procedures for

970

01:19:39,709 --> 01:19:37,860

everything they've been working on for

971

01:19:41,090 --> 01:19:39,719

the depressurization getting their suits

972

01:19:42,410 --> 01:19:41,100

ready they've already checked their

973

01:19:45,110 --> 01:19:42,420

tethers

974

01:19:47,630 --> 01:19:45,120

um right now uh they'll push open the

975

01:19:49,310 --> 01:19:47,640

thermal hatch and they'll exit one at a

976
01:19:52,010 --> 01:19:49,320
time we'll caught it first since he's

977
01:19:59,990 --> 01:19:54,770
and I see

978
01:20:00,000 --> 01:20:03,950
coffee Gucci

979
01:20:09,169 --> 01:20:06,770
Gucci or go to egress the airlock once

980
01:20:10,910 --> 01:20:09,179
you've egressed turn on your hakka Duke

981
01:20:12,709 --> 01:20:10,920
for you you'll be retrieving the cable

982
01:20:21,050 --> 01:20:12,719
bag and prepping it to pass the Glitchy

983
01:20:26,870 --> 01:20:23,750
thermal cover is open wakada now exiting

984
01:20:32,390 --> 01:20:29,390
the hecka that was mentioned is the high

985
01:20:34,189 --> 01:20:32,400
definition camera that's mounted on the

986
01:20:39,310 --> 01:20:34,199
um spacesuits helmet

987
01:20:44,990 --> 01:20:41,930
following along throughout the spacewalk

988
01:20:47,750 --> 01:20:45,000

you'll be able to notice him by the suit

989

01:20:50,510 --> 01:20:47,760

with the red stripes

990

01:20:53,390 --> 01:20:50,520

Nicole Mann uh call sign Duke

991

01:20:55,370 --> 01:20:53,400

um she'll be coming out afterwards both

992

01:20:56,990 --> 01:20:55,380

of them will do a tether configuration

993

01:20:58,189 --> 01:20:57,000

check once again they already did one

994

01:21:01,070 --> 01:20:58,199

inside the house they'll do it again

995

01:21:02,630 --> 01:21:01,080

outside uh configure their suits and

996

01:21:05,689 --> 01:21:02,640

make sure they have all the materials

997

01:21:08,229 --> 01:21:05,699

needed before they translate out

998

01:21:11,410 --> 01:21:08,239

let's turn on the

999

01:21:14,810 --> 01:21:11,420

page form okay

1000

01:21:18,169 --> 01:21:14,820

but you can make it okay

1001
01:21:22,310 --> 01:21:18,179
and you can give me the

1002
01:21:22,320 --> 01:21:43,970
okay

1003
01:21:43,980 --> 01:21:52,669
come on

1004
01:21:58,189 --> 01:21:55,189
these silver reels you see floating in

1005
01:22:00,050 --> 01:21:58,199
front of uh ev1 koichiwakata with the

1006
01:22:01,070 --> 01:22:00,060
red stripes those are the tethers that I

1007
01:22:03,470 --> 01:22:01,080
mentioned they'll be doing a tether

1008
01:22:06,350 --> 01:22:03,480
check once both of them are outside the

1009
01:22:07,910 --> 01:22:06,360
hatch and you can sort of see Duke ev2

1010
01:22:10,729 --> 01:22:07,920
Nicole Mann

1011
01:22:12,590 --> 01:22:10,739
um exiting the hatch after wakata they

1012
01:22:15,290 --> 01:22:12,600
are in a night pass right now although

1013
01:22:20,770 --> 01:22:15,300

very soon they'll be uh seeing an

1014

01:22:24,550 --> 01:22:23,110

okay

1015

01:22:27,530 --> 01:22:24,560

you got it

1016

01:22:29,450 --> 01:22:27,540

[Applause]

1017

01:22:30,950 --> 01:22:29,460

Duke you'll Stow that Rhett on the

1018

01:22:32,810 --> 01:22:30,960

airlock earring extender

1019

01:22:50,810 --> 01:22:32,820

and when you're ready you can transfer

1020

01:23:27,790 --> 01:22:53,030

[Applause]

1021

01:23:32,270 --> 01:23:30,169

in the corner

1022

01:23:34,189 --> 01:23:32,280

and I'm trying to get the bottom end for

1023

01:24:00,010 --> 01:23:34,199

two all right

1024

01:24:00,020 --> 01:24:13,669

on the hatch

1025

01:24:13,679 --> 01:24:19,960

okay that's now clear

1026

01:24:26,149 --> 01:24:21,050

[Applause]

1027

01:24:26,159 --> 01:24:44,590

that's a good direction orientation okay

1028

01:24:44,600 --> 01:25:03,110

[Applause]

1029

01:25:03,120 --> 01:25:23,970

foreign

1030

01:25:23,980 --> 01:25:28,370

[Music]

1031

01:25:28,380 --> 01:25:35,990

thank you

1032

01:25:38,649 --> 01:25:36,340

[Music]

1033

01:25:42,169 --> 01:25:38,659

[Applause]

1034

01:25:47,630 --> 01:25:42,179

bag it's from the saving extender up to

1035

01:25:51,229 --> 01:25:47,640

the top of the two lock it is the clear

1036

01:25:56,590 --> 01:25:54,410

let me just uh that because it's uh it's

1037

01:25:59,629 --> 01:25:56,600

going through your

1038

01:26:02,570 --> 01:25:59,639

giving extender let me could you come

1039

01:26:49,209 --> 01:26:02,580

down a little bit yep

1040

01:26:49,219 --> 01:26:54,370

it's clear you see that

1041

01:26:54,380 --> 01:26:59,530

[Music]

1042

01:27:03,410 --> 01:27:01,970

I don't think it's going through that

1043

01:27:05,270 --> 01:27:03,420

it's going through the cable though I

1044

01:27:07,070 --> 01:27:05,280

cannot see that it's not going through

1045

01:27:10,610 --> 01:27:07,080

the table back

1046

01:27:12,350 --> 01:27:10,620

but yeah it's going through my surgery

1047

01:27:34,430 --> 01:27:12,360

center at a time up on the cable desk

1048

01:27:34,440 --> 01:27:40,970

I did it

1049

01:27:40,980 --> 01:28:09,649

foreign

1050

01:28:15,310 --> 01:28:11,870

yeah

1051

01:28:15,320 --> 01:28:19,360

coming nicely

1052

01:28:19,370 --> 01:28:26,750

[Applause]

1053

01:28:33,890 --> 01:28:29,880

it's looking good okay looking good

1054

01:28:33,900 --> 01:28:42,950

okay I continued to pull it out

1055

01:28:50,530 --> 01:28:47,149

okay

1056

01:28:55,669 --> 01:28:53,450

it's coming out nicely all of this work

1057

01:28:59,090 --> 01:28:55,679

uh that you're seeing right now is uh

1058

01:29:02,030 --> 01:28:59,100

wakada and man or call side Duke working

1059

01:29:04,729 --> 01:29:02,040

together to get this very long bag out

1060

01:29:05,930 --> 01:29:04,739

of the crew lock this is really of all

1061

01:29:07,850 --> 01:29:05,940

the tools I'm going to be bringing out

1062

01:29:10,610 --> 01:29:07,860

to the work site this is the star of the

1063

01:29:13,310 --> 01:29:10,620

show that bag uh contains the uh

1064

01:29:16,430 --> 01:29:13,320

modification kit flattened uh with all

1065

01:29:17,810 --> 01:29:16,440

of the pieces necessary for them to uh

1066

01:29:20,030 --> 01:29:17,820

construct it

1067

01:29:22,250 --> 01:29:20,040

um right now this is a picture from a

1068

01:29:23,810 --> 01:29:22,260

previous strut uh with an open bag you

1069

01:29:26,750 --> 01:29:23,820

can see all the different components

1070

01:29:28,669 --> 01:29:26,760

today we'll be working on taking this

1071

01:29:31,010 --> 01:29:28,679

and turning it into the fully

1072

01:29:32,750 --> 01:29:31,020

constructed modification kit 1A Channel

1073

01:29:34,129 --> 01:29:32,760

this is a very important piece of

1074

01:29:35,390 --> 01:29:34,139

equipment that's going to be making its

1075

01:29:38,209 --> 01:29:35,400

way with the astronauts they're gonna

1076
01:29:42,830 --> 01:29:38,219
attach it to themselves as they move out

1077
01:29:55,080 --> 01:29:44,170
do that

1078
01:29:55,090 --> 01:29:59,090
[Applause]

1079
01:30:04,090 --> 01:30:02,090
all right and it's clear you can come

1080
01:30:06,110 --> 01:30:04,100
out okay

1081
01:30:07,490 --> 01:30:06,120
Houston's following along and we like

1082
01:30:10,790 --> 01:30:07,500
the plan for that rent as well you can

1083
01:30:10,800 --> 01:30:21,229
okay

1084
01:30:21,239 --> 01:30:28,760
foreign

1085
01:30:28,770 --> 01:30:49,570
[Applause]

1086
01:31:06,290 --> 01:30:51,709
to your left

1087
01:31:06,300 --> 01:31:15,830
okay

1088
01:31:19,780 --> 01:31:18,110

right

1089

01:31:28,629 --> 01:31:19,790

that should be clear now

1090

01:31:28,639 --> 01:31:37,550

okay looks good

1091

01:31:48,950 --> 01:31:40,370

okay I'm gonna get out um

1092

01:31:48,960 --> 01:32:06,490

foreign

1093

01:32:13,850 --> 01:32:10,750

Ty is the body restraint tether for uh

1094

01:32:15,830 --> 01:32:13,860

with uh no Stripes she'll be attaching

1095

01:32:19,910 --> 01:32:15,840

that strut bag to her body restraint

1096

01:32:22,189 --> 01:32:19,920

tether attached to uh koichi is a bag

1097

01:32:23,990 --> 01:32:22,199

full of cables on his way over to the 1B

1098

01:32:26,330 --> 01:32:24,000

work site he's going to stop along the

1099

01:32:29,270 --> 01:32:26,340

way and temporarily Stow that bag full

1100

01:32:31,910 --> 01:32:29,280

of cables for the work later on uh while

1101

01:32:34,550 --> 01:32:31,920

uh man or Duke has the

1102

01:32:40,189 --> 01:32:34,560

um uh job of taking that strut bag over

1103

01:32:40,199 --> 01:32:54,729

foreign

1104

01:32:58,550 --> 01:32:56,810

when they talk to each other they'll be

1105

01:33:01,370 --> 01:32:58,560

doing buddy checks and

1106

01:33:03,350 --> 01:33:01,380

um seeing how each other's spacy looks

1107

01:33:05,410 --> 01:33:03,360

and reporting that to each other uh they

1108

01:33:08,810 --> 01:33:05,420

do have some procedures to

1109

01:33:10,970 --> 01:33:08,820

make sure all of their suit components

1110

01:33:16,750 --> 01:33:10,980

are in a good spot before they actually

1111

01:33:21,470 --> 01:33:19,189

but these uh procedures are all about

1112

01:33:22,610 --> 01:33:21,480

communication Houston copies and once

1113

01:33:24,229 --> 01:33:22,620

you've got your International Space

1114

01:33:26,510 --> 01:33:24,239

Station number is over the South Pacific

1115

01:33:28,250 --> 01:33:26,520

Ocean right now we're entering into an

1116

01:33:30,110 --> 01:33:28,260

orbital daytime so you're seeing the sun

1117

01:33:41,010 --> 01:33:30,120

rise over the horizon of the Earth right

1118

01:33:41,020 --> 01:33:50,330

[Applause]

1119

01:33:50,340 --> 01:34:31,430

foreign

1120

01:34:31,440 --> 01:34:35,770

is

1121

01:34:35,780 --> 01:34:39,490

yeah yeah

1122

01:34:39,500 --> 01:34:49,310

okay yeah

1123

01:34:55,129 --> 01:34:50,950

okay

1124

01:34:57,830 --> 01:34:56,530

yeah

1125

01:34:58,890 --> 01:34:57,840

[Applause]

1126
01:35:04,450 --> 01:34:58,900
foreign

1127
01:35:04,460 --> 01:35:32,209
[Applause]

1128
01:36:13,340 --> 01:35:34,740
foreign

1129
01:36:18,610 --> 01:36:13,970
[Music]

1130
01:36:18,620 --> 01:36:24,229
that's it

1131
01:36:24,239 --> 01:36:37,430
can hold it here

1132
01:36:37,440 --> 01:36:45,850
towards your head

1133
01:36:51,709 --> 01:36:47,030
[Applause]

1134
01:37:36,180 --> 01:37:26,810
foreign

1135
01:37:36,190 --> 01:37:55,070
[Music]

1136
01:37:55,080 --> 01:37:59,890
down

1137
01:37:59,900 --> 01:38:14,689
[Applause]

1138
01:38:21,290 --> 01:38:16,570

then I don't

1139

01:38:38,470 --> 01:38:25,550

okay

1140

01:38:49,669 --> 01:38:40,910

you've got one

1141

01:39:01,910 --> 01:38:52,490

you know with that

1142

01:39:08,450 --> 01:39:05,390

okay crew we'll take a baseline hack

1143

01:39:08,460 --> 01:39:16,010

leave you alone

1144

01:39:16,020 --> 01:39:21,890

foreign

1145

01:39:25,850 --> 01:39:24,050

okay copy good Baseline hat for both of

1146

01:39:28,669 --> 01:39:25,860

you you can take a couple minutes here

1147

01:39:30,709 --> 01:39:28,679

to do some translation adaptation so

1148

01:39:33,370 --> 01:39:30,719

play around with your body rotation

1149

01:39:36,410 --> 01:39:33,380

pitch your roll various hand grips

1150

01:39:38,030 --> 01:39:36,420

translation without rotation and try

1151

01:39:40,430 --> 01:39:38,040

attaching a local tether and releasing

1152

01:39:44,030 --> 01:39:40,440

both hands just a reminder this first

1153

01:39:46,010 --> 01:39:44,040

hour will set your Medics for the rest

1154

01:39:51,310 --> 01:39:46,020

of the Eva so just take it nice and

1155

01:39:51,320 --> 01:39:57,669

thank you

1156

01:40:03,890 --> 01:40:00,290

getting some

1157

01:40:05,570 --> 01:40:03,900

wonderful views from the outside of the

1158

01:40:08,450 --> 01:40:05,580

International Space Station right now

1159

01:40:10,610 --> 01:40:08,460

the duo are just at the beginning of

1160

01:40:12,770 --> 01:40:10,620

their plan six and a half hour spacewalk

1161

01:40:14,149 --> 01:40:12,780

they're getting a sunrise over the South

1162

01:40:15,950 --> 01:40:14,159

Pacific Ocean

1163

01:40:17,570 --> 01:40:15,960

and we're getting a great high

1164

01:40:19,910 --> 01:40:17,580

definition views from their helmet

1165

01:40:21,890 --> 01:40:19,920

cameras right now they just finished

1166

01:40:23,870 --> 01:40:21,900

performing buddy checks and you heard

1167

01:40:25,850 --> 01:40:23,880

the ground division of Cartman uh

1168

01:40:27,709 --> 01:40:25,860

telling them to take their time of

1169

01:40:30,229 --> 01:40:27,719

course they have done plenty of

1170

01:40:33,050 --> 01:40:30,239

spacewalk training including here on the

1171

01:40:34,550 --> 01:40:33,060

ground at the Johnson Space Center here

1172

01:40:36,950 --> 01:40:34,560

in Houston is a laboratory called the

1173

01:40:39,110 --> 01:40:36,960

neutral buoyancy laboratory where they

1174

01:40:41,390 --> 01:40:39,120

practice these things underwater it is a

1175

01:40:42,470 --> 01:40:41,400

very good analog for understanding what

1176

01:40:44,570 --> 01:40:42,480

it's like in the microgravity

1177

01:40:46,370 --> 01:40:44,580

environment but the two of them now are

1178

01:40:47,689 --> 01:40:46,380

first-time space Walkers so they're

1179

01:40:49,750 --> 01:40:47,699

going to take some time on the outside

1180

01:40:52,850 --> 01:40:49,760

of the hatch to just get used to

1181

01:40:54,830 --> 01:40:52,860

understanding the differences between uh

1182

01:40:56,930 --> 01:40:54,840

performing the spacewalk in a pool with

1183

01:40:59,649 --> 01:40:56,940

the resistance of water and having no

1184

01:41:02,810 --> 01:40:59,659

resistance in the vacuum of space

1185

01:41:05,030 --> 01:41:02,820

their translation path or their movement

1186

01:41:06,470 --> 01:41:05,040

out to the work site is is all the way

1187

01:41:08,930 --> 01:41:06,480

out on the wings of the International

1188

01:41:11,350 --> 01:41:08,940

Space Station on the solar arrays so

1189

01:41:13,669 --> 01:41:11,360

they do have a quite a bit of of

1190

01:41:15,350 --> 01:41:13,679

translation to go to so they're just

1191

01:41:16,850 --> 01:41:15,360

sort of getting their bearings making

1192

01:41:22,189 --> 01:41:16,860

sure they understand their movements

1193

01:41:27,530 --> 01:41:24,790

and once again we have another increment

1194

01:41:29,930 --> 01:41:27,540

Gap in communication from the

1195

01:41:32,270 --> 01:41:29,940

International Space Station we mentioned

1196

01:41:34,729 --> 01:41:32,280

being over the South Pacific Ocean at

1197

01:41:36,890 --> 01:41:34,739

this time throughout today's spacewalk

1198

01:41:38,629 --> 01:41:36,900

we'll see gaps like these the space

1199

01:41:40,790 --> 01:41:38,639

station communicates by way of

1200

01:41:42,709 --> 01:41:40,800

geosynchronous satellites called the

1201

01:41:45,590 --> 01:41:42,719

tdrs network tracking and data relay

1202

01:41:48,070 --> 01:41:45,600

satellites will get intermittent gaps of

1203

01:41:51,850 --> 01:41:48,080

audio and video sometimes we regain the

1204

01:41:54,169 --> 01:41:51,860

audio a little bit earlier

1205

01:41:55,490 --> 01:41:54,179

this is now you're hearing the audio

1206

01:41:56,990 --> 01:41:55,500

come from the International Space

1207

01:41:58,550 --> 01:41:57,000

Station so we'll be getting that shortly

1208

01:42:00,649 --> 01:41:58,560

teams here in Mission Control Houston

1209

01:42:01,970 --> 01:42:00,659

are monitoring today's space walk as

1210

01:42:04,550 --> 01:42:01,980

well as the International Space Station

1211

01:42:06,169 --> 01:42:04,560

and the crew inside it'll be the teams

1212

01:42:07,910 --> 01:42:06,179

here that are walking our astronauts

1213

01:42:09,189 --> 01:42:07,920

through today's procedures see an

1214

01:42:11,510 --> 01:42:09,199

apartment you see in the middle there

1215

01:42:13,970 --> 01:42:11,520

with the black blazer and the white

1216

01:42:17,030 --> 01:42:13,980

shirt that is a NASA astronaut Xena

1217

01:42:19,189 --> 01:42:17,040

Cartman ground IV it's her voice that's

1218

01:42:21,229 --> 01:42:19,199

being communicated from all the work

1219

01:42:23,149 --> 01:42:21,239

that the teams are doing here in Mission

1220

01:42:26,330 --> 01:42:23,159

Control Houston she's Translating that

1221

01:42:26,340 --> 01:42:29,629

here

1222

01:42:36,890 --> 01:42:31,910

and standby one koichi we're actually

1223

01:42:36,900 --> 01:42:39,830

great

1224

01:42:59,990 --> 01:42:42,770

we're having the IV crew check on that

1225

01:43:05,149 --> 01:43:02,870

s for your awareness on your left side

1226

01:43:06,470 --> 01:43:05,159

your feathers are over the top of the

1227

01:43:08,689 --> 01:43:06,480

pot

1228

01:43:11,689 --> 01:43:08,699

it's gonna be a problem just that you

1229

01:43:47,629 --> 01:43:11,699

are have to get that back on

1230

01:43:47,639 --> 01:44:21,530

foreign

1231

01:44:21,540 --> 01:44:25,729

Peter

1232

01:44:31,010 --> 01:44:28,729

okay crew we're back with you we did see

1233

01:44:33,109 --> 01:44:31,020

one of the su's came out of its pouch

1234

01:44:34,850 --> 01:44:33,119

but we are actually good with that as

1235

01:44:37,910 --> 01:44:34,860

long as the thermal cover is tended

1236

01:44:40,669 --> 01:44:37,920

closed and so with that you can go ahead

1237

01:44:42,590 --> 01:44:40,679

and start translating ev1 you'll be

1238

01:44:45,410 --> 01:44:42,600

translating out to the Anchor hooks that

1239

01:44:47,209 --> 01:44:45,420

are Nader of the starboard seating

1240

01:44:48,950 --> 01:44:47,219

Duke if you contend the hatch thermal

1241

01:44:52,669 --> 01:44:48,960

cover closed that's very helpful

1242

01:44:57,189 --> 01:44:52,679

continue your translation adaptations

1243

01:44:57,199 --> 01:45:15,530

that sounds lady

1244

01:45:19,310 --> 01:45:17,629

and the Journey Begins now that uh

1245

01:45:22,250 --> 01:45:19,320

they've done all that they can on the

1246

01:45:23,870 --> 01:45:22,260

outside of the uh airlocks hatch

1247

01:45:25,250 --> 01:45:23,880

um getting all of their tools attaching

1248

01:45:26,750 --> 01:45:25,260

it to their body their strength tether

1249

01:45:28,370 --> 01:45:26,760

making sure their tethers are in a good

1250

01:45:30,530 --> 01:45:28,380

configuration sort of doing an

1251

01:45:32,090 --> 01:45:30,540

adaptation uh now we're following

1252

01:45:35,030 --> 01:45:32,100

koichiwakata with the high definition

1253

01:45:36,530 --> 01:45:35,040

camera and he's translating or moving

1254

01:45:48,709 --> 01:45:36,540

out to the work site so he's going to

1255

01:47:16,149 --> 01:46:08,330

foreign

1256

01:47:21,950 --> 01:47:19,129

just a reminder as you translate to also

1257

01:47:23,090 --> 01:47:21,960

keep your cable bags and strut bags in

1258

01:47:27,590 --> 01:47:23,100

your skin so that they don't hit

1259

01:47:27,600 --> 01:47:46,740

give me a copy

1260

01:47:46,750 --> 01:48:05,350

[Applause]

1261

01:48:11,330 --> 01:48:07,970

for those just tuning in uh we're

1262

01:48:13,990 --> 01:48:11,340

following along uh by way of the helmet

1263

01:48:16,550 --> 01:48:14,000

camera of kawichiwakata

1264

01:48:18,830 --> 01:48:16,560

they've exited the hatch and started

1265

01:48:21,470 --> 01:48:18,840

their spacewalk officially at 7 14 a.m

1266

01:48:22,850 --> 01:48:21,480

central time uh did some buddy checks

1267

01:48:25,070 --> 01:48:22,860

and made sure they had all their tools

1268

01:48:26,990 --> 01:48:25,080

attached to them you can see they are

1269

01:48:30,530 --> 01:48:27,000

attached to his body restraint to other

1270

01:48:33,709 --> 01:48:30,540

uh koichiwakata has a cable bag in tow

1271

01:48:35,750 --> 01:48:33,719

right now he's heading over to the S4

1272

01:48:37,910 --> 01:48:35,760

truss section of the truss he's going to

1273

01:48:40,550 --> 01:48:37,920

leave that cable back there and then go

1274

01:48:43,970 --> 01:48:40,560

to the 1B work site they're splitting up

1275

01:48:46,189 --> 01:48:43,980

to begin with uh is gonna drop off that

1276

01:48:49,010 --> 01:48:46,199

bag and then finish up tightening some

1277

01:48:49,850 --> 01:48:49,020

bolts on the fully constructed

1278

01:48:53,030 --> 01:48:49,860

um

1279

01:48:54,649 --> 01:48:53,040

uh mounting platform that's on the 1B

1280

01:48:57,530 --> 01:48:54,659

truss he's just got to use that pistol

1281

01:48:59,990 --> 01:48:57,540

grip tool or basically a cordless drill

1282

01:49:01,370 --> 01:49:00,000

uh to tighten some bolts uh not much

1283

01:49:05,030 --> 01:49:01,380

work there it's really just going to

1284

01:49:08,330 --> 01:49:05,040

take the first hour uh of his uh of his

1285

01:49:10,189 --> 01:49:08,340

task uh while Nicole Mann by call sign

1286

01:49:12,229 --> 01:49:10,199

Duke will be hearing that over space to

1287

01:49:15,109 --> 01:49:12,239

ground today she's gonna go over to the

1288

01:49:18,530 --> 01:49:15,119

directly to the 1A work site with uh the

1289

01:49:21,169 --> 01:49:18,540

strut bag in tow that strut bag has the

1290

01:49:24,229 --> 01:49:21,179

mounting platform itself in it so she'll

1291

01:49:26,870 --> 01:49:24,239

begin the construction there while

1292

01:49:29,090 --> 01:49:26,880

uh koichiwakata finishes up the

1293

01:49:31,370 --> 01:49:29,100

construction on the 1B site and then for

1294

01:49:33,649 --> 01:49:31,380

the remainder of today's space walk the

1295

01:49:35,810 --> 01:49:33,659

two will focus on working together to

1296

01:50:02,510 --> 01:49:35,820

construct that mounting platform on the

1297

01:50:56,590 --> 01:50:32,810

foreign

1298

01:51:03,530 --> 01:51:00,890

there it's uh you you can see a

1299

01:51:05,090 --> 01:51:03,540

digital camera the lens is the thing

1300

01:51:07,970 --> 01:51:05,100

that makes it the most apparent but it's

1301

01:51:10,250 --> 01:51:07,980

covered with insulation to protect it

1302

01:51:13,390 --> 01:51:10,260

uh from the thermal environment outside

1303

01:51:15,229 --> 01:51:13,400

the International Space Station so uh

1304

01:51:17,750 --> 01:51:15,239

guichibakata will be able to take some

1305

01:51:20,270 --> 01:51:17,760

photos both for engineering purposes to

1306

01:51:21,830 --> 01:51:20,280

show the work that they're doing as well

1307

01:51:37,910 --> 01:51:21,840

as take some beautiful photos of Earth

1308

01:52:10,970 --> 01:51:39,649

oh

1309

01:52:10,980 --> 01:52:33,870

thank you

1310

01:52:33,880 --> 01:52:43,189

[Applause]

1311

01:52:43,199 --> 01:53:01,580

foreign

1312

01:53:01,590 --> 01:53:15,649

[Applause]

1313

01:53:15,659 --> 01:53:48,350

foreign

1314

01:53:48,360 --> 01:54:16,390

Houston copy is looking good

1315

01:54:23,450 --> 01:54:18,709

Center is released from the airlock

1316

01:54:25,609 --> 01:54:23,460

d-ring extender double cover is fully

1317

01:54:27,050 --> 01:54:25,619

we copy a release from the airlock the

1318

01:54:28,669 --> 01:54:27,060

internet extender and thermal cover

1319

01:54:31,070 --> 01:54:28,679

closed

1320

01:54:33,470 --> 01:54:31,080

with that you can start translating Duke

1321

01:54:35,930 --> 01:54:33,480

after the one alpha work site you just

1322

01:54:37,490 --> 01:54:35,940

take it slow and easy and before you

1323

01:54:42,410 --> 01:54:37,500

cross the side check that your gauntlets

1324

01:54:47,689 --> 01:54:46,550

and same for you so much of course make

1325

01:54:50,689 --> 01:54:47,699

sure that your gauntlets are in place

1326

01:54:56,990 --> 01:54:50,699

before you cross the Sarge

1327

01:54:57,000 --> 01:55:00,169

perfect

1328

01:55:04,790 --> 01:55:02,209

from phase one you'll be trending Zenith

1329

01:55:09,410 --> 01:55:04,800

to the non-radiator edge looking for S4

1330

01:55:09,420 --> 01:55:15,709

copy that 2219

1331

01:55:28,370 --> 01:55:16,910

.

1332

01:55:28,380 --> 01:55:40,060

foreign

1333

01:55:57,109 --> 01:55:42,290

[Music]

1334

01:56:30,169 --> 01:55:59,629

copy Duke

1335

01:56:33,950 --> 01:56:31,790

for those following along you're seeing

1336

01:56:36,050 --> 01:56:33,960

a split screen here from the high

1337

01:56:37,750 --> 01:56:36,060

definition helmet cameras on both of our

1338

01:56:40,250 --> 01:56:37,760

space Walkers today

1339

01:56:43,010 --> 01:56:40,260

koichiwakata making his way out to the

1340

01:56:45,950 --> 01:56:43,020

1B Channel he's going to stop along the

1341

01:56:49,010 --> 01:56:45,960

way and he's got a bag a cable bag in

1342

01:56:50,330 --> 01:56:49,020

tow on his body restraint tether it has

1343

01:56:52,550 --> 01:56:50,340

some of the cables for some of the

1344

01:56:55,010 --> 01:56:52,560

secondary work as well as well as GoPros

1345

01:56:58,209 --> 01:56:55,020

some of the other tools and materials

1346

01:57:00,950 --> 01:56:58,219

that they need for the non-primary

1347

01:57:03,470 --> 01:57:00,960

work that they're doing while Nicole man

1348

01:57:04,910 --> 01:57:03,480

or call sign Duke has the strut bag

1349

01:57:07,370 --> 01:57:04,920

that's the primary thing that they're

1350

01:57:08,570 --> 01:57:07,380

doing Nicole man just finished up her

1351

01:57:10,490 --> 01:57:08,580

work they she had to make sure the

1352

01:57:12,770 --> 01:57:10,500

thermal cover on the Eva hatch was

1353

01:57:15,530 --> 01:57:12,780

closed and make sure there's no thermal

1354

01:57:17,209 --> 01:57:15,540

fluctuation inside of the crew lock

1355

01:57:19,669 --> 01:57:17,219

where they just exited to begin today's

1356

01:57:21,709 --> 01:57:19,679

spacewalk both of them now translating

1357

01:57:24,310 --> 01:57:21,719

or moving out to their respective work

1358

01:57:28,189 --> 01:57:26,450

targeting high definition views this is

1359

01:57:29,570 --> 01:57:28,199

Nicole man call sign Duke she's wearing

1360

01:57:32,270 --> 01:57:29,580

this suit with no stripes and she's got

1361

01:57:34,609 --> 01:57:32,280

that giant bag with her that's the strut

1362

01:57:36,229 --> 01:57:34,619

bag that has the mounting platform uh

1363

01:57:38,209 --> 01:57:36,239

that they're going to be installing

1364

01:57:40,370 --> 01:57:38,219

today both of them will be uh working on

1365

01:57:43,070 --> 01:57:40,380

the 1A Channel koichiwakata's got to

1366

01:57:45,229 --> 01:57:43,080

make a stop first to work on the 1B

1367

01:57:47,030 --> 01:57:45,239

um but Nicole man's gonna get uh get

1368

01:57:50,030 --> 01:57:47,040

started right away so she's got that bag

1369

01:57:51,290 --> 01:57:50,040

and toe she'll be able to unbuckle uh

1370

01:57:53,870 --> 01:57:51,300

some of the straps that are holding

1371

01:57:55,669 --> 01:57:53,880

those components in place uh retrieve

1372

01:57:58,669 --> 01:57:55,679

some of the materials and it is a

1373

01:58:00,290 --> 01:57:58,679

they'll be installing it one at a time

1374

01:58:02,149 --> 01:58:00,300

um the ground teams have plenty of

1375

01:58:04,430 --> 01:58:02,159

experience with this type of work this

1376

01:58:06,169 --> 01:58:04,440

is this will be the sixth modification

1377

01:58:09,649 --> 01:58:06,179

kit the sixth time that we've used these

1378

01:58:12,649 --> 01:58:09,659

struts to attach to a mass canister

1379

01:58:14,149 --> 01:58:12,659

um so they're prepared for uh any of uh

1380

01:58:16,689 --> 01:58:14,159

issues or troubleshooting they need to

1381

01:58:18,950 --> 01:58:16,699

do along the way

1382

01:58:22,910 --> 01:58:18,960

being done soon right now we're just

1383

01:58:28,790 --> 01:58:26,030

stand by Gucci you'll need to actually

1384

01:58:37,030 --> 01:58:28,800

backtrack just a little bit let me give

1385

01:58:37,040 --> 01:58:54,649

come down a little bit and then

1386

01:58:58,490 --> 01:58:56,750

quiche you're doing a good thing you can

1387

01:59:07,089 --> 01:58:58,500

head outboard from there that was a good

1388

01:59:13,250 --> 01:59:10,550

that's perfect you'll be pausing here to

1389

01:59:16,490 --> 01:59:13,260

sew the cable bag so this is the inboard

1390

01:59:19,250 --> 01:59:16,500

non-radiator corner so that will be on

1391

01:59:21,649 --> 01:59:19,260

handle two two one nine and two two one

1392

01:59:24,950 --> 01:59:21,659

five using integral tethers with the

1393

01:59:31,550 --> 01:59:27,950

okay copy that I see them

1394

01:59:51,250 --> 01:59:31,560

actually that looks really close

1395

02:00:11,450 --> 01:59:52,350

[Music]

1396

02:00:11,460 --> 02:00:30,920

foreign

1397

02:00:30,930 --> 02:00:36,370

[Music]

1398

02:00:40,250 --> 02:00:39,050

canister is a different character uh

1399

02:00:42,589 --> 02:00:40,260

yours is trending a little bit high

1400

02:00:44,270 --> 02:00:42,599

right now so okay pause and make sure

1401
02:00:47,689 --> 02:00:44,280
that we can maintain that good medox

1402
02:00:53,930 --> 02:00:47,699
canister for the rest of the Eva

1403
02:00:53,940 --> 02:01:42,229
you see I'm passing all right

1404
02:01:47,510 --> 02:01:45,050
okay koichi thanks for hanging for a sec

1405
02:01:49,010 --> 02:01:47,520
we'll have you Stow that cable bag again

1406
02:01:54,950 --> 02:01:49,020
with the handrail toward the radiator

1407
02:03:04,930 --> 02:02:29,089
foreign

1408
02:03:21,230 --> 02:03:06,770
sit down

1409
02:03:21,240 --> 02:03:34,609
[Music]

1410
02:03:34,619 --> 02:03:40,370
thank you

1411
02:03:40,380 --> 02:03:44,089
I'm gonna apologize

1412
02:03:44,099 --> 02:03:54,109
we copy I like that

1413
02:03:54,119 --> 02:03:58,870

okay

1414

02:04:06,290 --> 02:04:03,950
with the handrail for the radiator

1415

02:04:10,129 --> 02:04:06,300
perfect good config

1416

02:04:11,510 --> 02:04:10,139
with that you can fair lead on two two

1417

02:04:13,370 --> 02:04:11,520
one

1418

02:04:21,370 --> 02:04:13,380
and we'll have to translate out to your

1419

02:04:26,990 --> 02:04:24,649
side and just a reminder to take it

1420

02:04:29,030 --> 02:04:27,000
really nice and slow and easy we've got

1421

02:04:32,030 --> 02:04:29,040
that trending High Maddox canister so

1422

02:05:08,689 --> 02:04:34,669
I'll do that

1423

02:06:00,690 --> 02:05:46,250
foreign

1424

02:06:04,310 --> 02:06:02,149
[Music]

1425

02:06:07,370 --> 02:06:04,320
copy Duke you'll be following the

1426

02:06:10,910 --> 02:06:07,380

keelside non-radiator edge following

1427

02:06:12,950 --> 02:06:10,920

handrail 2219 and continuing outboard to

1428

02:06:45,410 --> 02:06:12,960

2231

1429

02:06:49,189 --> 02:06:47,149

for those following along or getting

1430

02:06:50,870 --> 02:06:49,199

high definition fuse from the outside of

1431

02:06:52,370 --> 02:06:50,880

the International Space Station the two

1432

02:06:55,430 --> 02:06:52,380

space Walkers are going to be splitting

1433

02:06:57,890 --> 02:06:55,440

up for the first of their tasks

1434

02:07:00,770 --> 02:06:57,900

um koichi bakata translating over to the

1435

02:07:03,890 --> 02:07:00,780

1B work site he had a cable bag in tow

1436

02:07:05,930 --> 02:07:03,900

along the way and stored it in a

1437

02:07:07,490 --> 02:07:05,940

location so they can easily access it

1438

02:07:09,649 --> 02:07:07,500

later there's some materials in there

1439

02:07:11,649 --> 02:07:09,659

they need for some future work that's

1440

02:07:13,310 --> 02:07:11,659

later in the timeline for now though

1441

02:07:16,370 --> 02:07:13,320

koichiwakata really only needs his

1442

02:07:18,649 --> 02:07:16,380

pistol grip tool the mounting platform

1443

02:07:20,330 --> 02:07:18,659

on the 1B channel was constructed on a

1444

02:07:22,550 --> 02:07:20,340

previous Eva and really just needs a

1445

02:07:24,709 --> 02:07:22,560

little bit of tightening and some last

1446

02:07:26,209 --> 02:07:24,719

minute work to finish it up so he can do

1447

02:07:28,609 --> 02:07:26,219

that by himself he's just going to use

1448

02:07:30,890 --> 02:07:28,619

that do that for about the first hour of

1449

02:07:32,209 --> 02:07:30,900

the spacewalk once he gets there that'll

1450

02:07:33,890 --> 02:07:32,219

really start the clock for him to

1451

02:07:36,770 --> 02:07:33,900

perform some of that work in the

1452

02:07:40,189 --> 02:07:36,780

meantime you're watching ev2 Nicole Mann

1453

02:07:43,550 --> 02:07:40,199

call sign Duke uh translating moving out

1454

02:07:46,189 --> 02:07:43,560

to The One a channel in tow she's got a

1455

02:07:48,229 --> 02:07:46,199

strut bag that's the struts are going to

1456

02:07:50,629 --> 02:07:48,239

actually be building together wakata

1457

02:07:52,910 --> 02:07:50,639

will join man later in today's spacewalk

1458

02:08:00,290 --> 02:07:52,920

she'll just get a head start and start

1459

02:08:05,510 --> 02:08:02,750

okay copy that Duke and a reminder for

1460

02:08:07,250 --> 02:08:05,520

koichi just a quick caution to minimize

1461

02:08:09,890 --> 02:08:07,260

loads into the wire ties that are on

1462

02:08:13,490 --> 02:08:09,900

that mli there uh should be right nearby

1463

02:08:19,970 --> 02:08:13,500

handrail to 2008.

1464

02:08:19,980 --> 02:08:24,070

foreign

1465

02:08:29,270 --> 02:08:27,229

that strut bag as you know I'm sure on

1466

02:08:30,589 --> 02:08:29,280

the outboard non-radiator corner of the

1467

02:08:32,270 --> 02:08:30,599

iea

1468

02:08:35,870 --> 02:08:32,280

looking for handrails two two two two

1469

02:08:38,689 --> 02:08:35,880

two two two three six and two two five

1470

02:08:40,430 --> 02:08:38,699

one but that's also up here we're not

1471

02:08:47,209 --> 02:08:40,440

gonna have a little bit

1472

02:08:47,219 --> 02:09:11,229

foreign

1473

02:09:17,870 --> 02:09:14,629

Hook is down with that you can translate

1474

02:09:20,510 --> 02:09:17,880

out towards the one Bravo Mass canister

1475

02:09:22,550 --> 02:09:20,520

and reminder that at the one broker iea

1476

02:09:37,729 --> 02:09:22,560

you'll be Crossing to the radiator side

1477

02:09:37,739 --> 02:09:57,589

copy that Duke

1478

02:09:57,599 --> 02:10:33,770

foreign

1479

02:10:39,109 --> 02:10:37,490

and I can't fight to the uh outboard to

1480

02:10:45,649 --> 02:10:39,119

go to the

1481

02:10:50,089 --> 02:10:47,629

yeah you'll be Crossing to the radiator

1482

02:10:52,370 --> 02:10:50,099

side and on the radiator side heading

1483

02:10:53,390 --> 02:10:52,380

outboard to the mask canister

1484

02:10:56,450 --> 02:10:53,400

oh

1485

02:10:58,189 --> 02:10:56,460

and yes you will be going to the left

1486

02:11:03,109 --> 02:10:58,199

side of the mod kit with that we'll take

1487

02:11:12,589 --> 02:11:06,649

okay after I get there or do I want to

1488

02:11:12,599 --> 02:11:17,750

that's okay

1489

02:11:17,760 --> 02:11:21,950

copy good gloves and half

1490

02:11:28,390 --> 02:11:23,930

and we also see that you're done with

1491

02:11:28,400 --> 02:11:33,109

copy that

1492

02:11:33,119 --> 02:11:40,330

I got uh

1493

02:11:40,340 --> 02:12:00,229

copy Duke

1494

02:12:04,070 --> 02:12:02,209

and a big picture update for both of you

1495

02:12:06,770 --> 02:12:04,080

you're pretty much right on the timeline

1496

02:12:12,589 --> 02:12:06,780

and are limiting consumable right now is

1497

02:12:12,599 --> 02:12:16,970

body

1498

02:12:22,850 --> 02:12:19,729

says a good report from the ground IV uh

1499

02:12:25,129 --> 02:12:22,860

Xena cardmen along the way the teams

1500

02:12:26,810 --> 02:12:25,139

continue to monitor the progress uh

1501

02:12:29,390 --> 02:12:26,820

through the procedures as well as

1502

02:12:31,669 --> 02:12:29,400

something called limiting consumables uh

1503

02:12:33,589 --> 02:12:31,679

the spacesuits that they're wearing and

1504

02:12:35,450 --> 02:12:33,599

has everything they need in terms of

1505

02:12:38,330 --> 02:12:35,460

life support it has it provides the

1506

02:12:39,890 --> 02:12:38,340

pressure the air provides water it also

1507

02:12:42,410 --> 02:12:39,900

provides battery power everything is

1508

02:12:43,910 --> 02:12:42,420

portable as they do this work outside of

1509

02:12:45,950 --> 02:12:43,920

the International Space Station now an

1510

02:12:48,229 --> 02:12:45,960

hour into today's spacewalk we plan for

1511

02:12:49,790 --> 02:12:48,239

six and a half hours uh everything seems

1512

02:12:51,770 --> 02:12:49,800

to be on track in terms of the timeline

1513

02:12:53,870 --> 02:12:51,780

and limiting consumables they'll

1514

02:12:55,970 --> 02:12:53,880

continue to monitor this throughout as

1515

02:13:00,169 --> 02:12:55,980

it could fluctuate but right now we're

1516

02:13:00,179 --> 02:13:13,850

Friday

1517

02:13:13,860 --> 02:13:26,810

that's perfect

1518

02:13:31,850 --> 02:13:29,450

all right copy Duke with that you can

1519

02:13:36,589 --> 02:13:31,860

translate inboard to the starboard Ceta

1520

02:13:36,599 --> 02:13:43,089

foreign

1521

02:13:47,149 --> 02:13:45,890

for you once you're at the left collar

1522

02:13:49,490 --> 02:13:47,159

bolts

1523

02:13:51,890 --> 02:13:49,500

you'll be going outboard under the EGA

1524

02:13:53,990 --> 02:13:51,900

platform on the Broom okay you're there

1525

02:13:56,990 --> 02:13:54,000

you'll be opening the mli around the

1526

02:13:58,609 --> 02:13:57,000

middle to access the collar bolts

1527

02:14:04,129 --> 02:13:58,619

okay

1528

02:14:08,810 --> 02:14:05,990

that's perfect I've got a great view in

1529

02:14:22,729 --> 02:14:08,820

your hecca now okay I have PGT settings

1530

02:14:28,430 --> 02:14:25,569

am I ready for a PCT setting

1531

02:14:30,649 --> 02:14:28,440

okay great and just a quick reminder

1532

02:14:32,569 --> 02:14:30,659

here while your brt to that midsret

1533

02:14:35,149 --> 02:14:32,579

handrail minimize normal intortional

1534

02:14:40,250 --> 02:14:35,159

loads into the midstret your PGT

1535

02:14:40,260 --> 02:14:51,709

double seven clockwise too

1536

02:14:55,970 --> 02:14:54,109

so right now koichiwakata is at the work

1537

02:14:58,189 --> 02:14:55,980

site of the 1B Channel you can sort of

1538

02:15:00,109 --> 02:14:58,199

see the these struts on the right side

1539

02:15:02,330 --> 02:15:00,119

of the mass canister that's taking on

1540

02:15:04,729 --> 02:15:02,340

most of the center of the flame there

1541

02:15:06,350 --> 02:15:04,739

um the mounting platform on the 1B

1542

02:15:08,450 --> 02:15:06,360

channel is constructed he's got the

1543

02:15:11,270 --> 02:15:08,460

pistol grip Tool uh basically a cordless

1544

02:15:14,330 --> 02:15:11,280

power drill they have cordless they have

1545

02:15:16,550 --> 02:15:14,340

uh the torque settings uh programs into

1546

02:15:18,350 --> 02:15:16,560

the tools so they know exactly how much

1547

02:15:21,169 --> 02:15:18,360

torque uh to

1548

02:15:23,030 --> 02:15:21,179

um to work on to the various parts of

1549

02:15:24,950 --> 02:15:23,040

the struts so he's on the left side

1550

02:15:27,050 --> 02:15:24,960

right now he opened the multi-layer

1551
02:15:29,810 --> 02:15:27,060
insulation the white fabric to access

1552
02:15:32,750 --> 02:15:29,820
the bolt on the left side uh so he'll be

1553
02:15:38,089 --> 02:15:32,760
the first part of his task is to work on

1554
02:15:38,099 --> 02:15:56,169
foreign

1555
02:16:02,089 --> 02:15:59,030
to torque we're expecting about four to

1556
02:16:05,209 --> 02:16:02,099
six turns looking for turn count torque

1557
02:16:05,219 --> 02:16:30,600
I'll do that total fictions expected

1558
02:16:34,730 --> 02:16:32,110
[Music]

1559
02:16:37,969 --> 02:16:34,740
I'm going to uh

1560
02:16:37,979 --> 02:16:45,240
I don't know

1561
02:16:50,030 --> 02:16:46,910
[Applause]

1562
02:16:51,129 --> 02:16:50,040
okay then I got a green light and I

1563
02:16:56,990 --> 02:16:51,139

talked about

1564

02:16:57,000 --> 02:17:00,669

Focus 25.5

1565

02:17:07,370 --> 02:17:05,270

25.8 and the revolution is uh

1566

02:17:09,889 --> 02:17:07,380

I counted three and

1567

02:17:14,629 --> 02:17:09,899

three and actually but it says

1568

02:17:18,410 --> 02:17:14,639

evolution is that zero two nine

1569

02:17:24,410 --> 02:17:22,429

okay copy 25.8 on the torque and three

1570

02:17:27,049 --> 02:17:24,420

and a half turns counted visually

1571

02:17:36,349 --> 02:17:27,059

looking for a green light as well and to

1572

02:17:36,359 --> 02:17:46,969

it'll be a label here

1573

02:17:46,979 --> 02:17:53,650

foreign

1574

02:17:57,709 --> 02:17:56,330

we're going to talk about the turn count

1575

02:18:01,190 --> 02:17:57,719

on that one but while we're doing that

1576

02:18:03,709 --> 02:18:01,200

you can go to the other bolts and same

1577

02:18:05,629 --> 02:18:03,719

number okay turns expected about four to

1578

02:18:14,690 --> 02:18:05,639

six looking for torque and green light

1579

02:18:18,469 --> 02:18:16,429

so again the pistol grip tool that core

1580

02:18:21,950 --> 02:18:18,479

this power drill that Ouija is holding

1581

02:18:24,349 --> 02:18:21,960

now has the turn count and the torque

1582

02:18:26,209 --> 02:18:24,359

settings he's tightening with a

1583

02:18:29,450 --> 02:18:26,219

clockwise rotation the different color

1584

02:18:31,910 --> 02:18:29,460

bolts on the left part of the mounting

1585

02:18:34,129 --> 02:18:31,920

platforms strut

1586

02:18:35,990 --> 02:18:34,139

he tightened one and as the ground teams

1587

02:18:43,070 --> 02:18:36,000

assessed that color bolt settings he'll

1588

02:18:46,790 --> 02:18:45,410

you can retrieve the workout from apfr

1589

02:19:03,169 --> 02:18:46,800

and stow it on your brt when you're

1590

02:19:10,009 --> 02:19:05,589

9

1591

02:19:21,049 --> 02:19:10,019

the visually confirmed the two terms

1592

02:19:24,469 --> 02:19:22,669

which you're coming in a little broken

1593

02:19:29,330 --> 02:19:24,479

there could you repeat your last I heard

1594

02:19:36,349 --> 02:19:32,810

okay uh I visually confirmed the two

1595

02:19:41,389 --> 02:19:36,359

terms of the upper Vault and I got the

1596

02:19:45,049 --> 02:19:41,399

two uh lights the whole talk and uh talk

1597

02:19:48,530 --> 02:19:45,059

about yourself 20.2 and I don't see any

1598

02:19:52,330 --> 02:19:48,540

left turn counts on the PVP

1599

02:19:56,690 --> 02:19:55,130

we'll have you try that bolt again just

1600

02:19:59,570 --> 02:19:56,700

make sure you're in a good body position

1601
02:20:01,910 --> 02:19:59,580
for uh leverage on that PGT and we'll

1602
02:20:03,889 --> 02:20:01,920
have you hit the upper bolts one more

1603
02:20:26,389 --> 02:20:03,899
time

1604
02:20:26,399 --> 02:20:34,090
and I have my rent on the uh

1605
02:20:34,100 --> 02:20:50,389
thank you

1606
02:20:55,790 --> 02:20:52,429
okay I got

1607
02:20:59,090 --> 02:20:55,800
recently another a little over one third

1608
02:21:07,730 --> 02:20:59,100
I got a green light get folks out in the

1609
02:21:14,210 --> 02:21:11,030
okay copy one additional turn green

1610
02:21:16,370 --> 02:21:14,220
light and 25 decimal five on the torque

1611
02:21:44,510 --> 02:21:16,380
we'll talk about those numbers for just

1612
02:21:44,520 --> 02:21:51,010
foreign

1613
02:21:56,090 --> 02:21:53,389

we'll have you move on here we're going

1614

02:21:59,389 --> 02:21:56,100

to set the PGT to manual ratchet

1615

02:22:03,950 --> 02:21:59,399

clockwise and then you'll be driving m29

1616

02:22:05,750 --> 02:22:03,960

and 30. until you get two MTL pops so

1617

02:22:07,370 --> 02:22:05,760

we'll expect several extra turns here

1618

02:22:10,190 --> 02:22:07,380

just keep an eye out and give us a turn

1619

02:22:21,230 --> 02:22:12,650

copy that

1620

02:22:21,240 --> 02:22:26,929

copy starting with the lower bolts

1621

02:22:26,939 --> 02:22:34,030

okay

1622

02:22:48,889 --> 02:22:37,050

good news you can translate

1623

02:22:54,349 --> 02:22:51,770

two tops and the whole turn is

1624

02:22:57,230 --> 02:22:54,359

approximately 90 degrees

1625

02:22:59,630 --> 02:22:57,240

a quarter of a turn Okay copy one

1626
02:23:02,630 --> 02:22:59,640
quarter additional turn and two pops on

1627
02:23:02,640 --> 02:23:09,070
um

1628
02:23:14,150 --> 02:23:11,870
but meanwhile you can go to the upper

1629
02:23:16,670 --> 02:23:14,160
bolts and do the same thing in manual

1630
02:23:16,680 --> 02:23:22,910
copy that

1631
02:23:27,230 --> 02:23:25,429
so a quick recap there are two bolts on

1632
02:23:29,150 --> 02:23:27,240
this left strut that could be juakata is

1633
02:23:31,730 --> 02:23:29,160
working at we're looking at him his

1634
02:23:33,770 --> 02:23:31,740
helmet camera view and using the pistol

1635
02:23:35,630 --> 02:23:33,780
grip tool to hand tighten each of the

1636
02:23:38,570 --> 02:23:35,640
bolts now that he's done a rotation just

1637
02:23:40,550 --> 02:23:38,580
hand tightening down to torque in the

1638
02:23:42,710 --> 02:23:40,560

meantime Nicole Mann is on the other

1639

02:23:44,630 --> 02:23:42,720

work site she's preparing and grabbing

1640

02:23:47,929 --> 02:23:44,640

the materials she needs including a work

1641

02:23:49,610 --> 02:23:47,939

restraint to start constructing uh the

1642

02:23:52,070 --> 02:23:49,620

mounting platform

1643

02:23:54,710 --> 02:23:52,080

um from okay from koichiwakano's view

1644

02:23:56,809 --> 02:23:54,720

you can see sort of the final product of

1645

02:23:59,330 --> 02:23:56,819

that mountain platform on a 1V Channel

1646

02:24:01,670 --> 02:23:59,340

that's what they'll be building on 1A

1647

02:24:05,150 --> 02:24:01,680

so I'm using the manual message it's

1648

02:24:11,030 --> 02:24:05,160

rotated about half a turn and still does

1649

02:24:22,180 --> 02:24:13,250

py has turned you can keep going if

1650

02:24:22,190 --> 02:24:25,270

[Applause]

1651
02:24:25,280 --> 02:24:31,309
on the other one

1652
02:24:31,319 --> 02:24:44,590
after

1653
02:24:52,190 --> 02:24:48,730
uh another uh

1654
02:24:55,670 --> 02:24:52,200
another quarter turn and two pops on the

1655
02:24:56,870 --> 02:24:55,680
upper okay give us just a second to talk

1656
02:25:03,429 --> 02:24:56,880
about that Bolt

1657
02:25:09,530 --> 02:25:06,950
and what we give the myrrh and Eva a

1658
02:25:11,450 --> 02:25:09,540
moment to talk about that you can just

1659
02:25:13,010 --> 02:25:11,460
take some photos for your awareness your

1660
02:25:17,770 --> 02:25:13,020
net rate is looking really good right

1661
02:25:37,370 --> 02:25:19,730
yeah it's definitely trending better

1662
02:25:37,380 --> 02:25:43,870
foreign

1663
02:25:47,990 --> 02:25:46,490

as a reminder for you before you cross

1664

02:25:48,280 --> 02:25:48,000

the sarge check that you're Gauntlet

1665

02:25:50,389 --> 02:25:48,290

term

1666

02:25:51,550 --> 02:25:50,399

[Music]

1667

02:26:08,389 --> 02:25:51,560

okay

1668

02:26:08,399 --> 02:26:25,210

foreign

1669

02:26:30,110 --> 02:26:27,530

intermittent Gap in Communications from

1670

02:26:32,450 --> 02:26:30,120

the International Space Station

1671

02:26:35,150 --> 02:26:32,460

the teams here in Houston's Mission

1672

02:26:37,250 --> 02:26:35,160

Control are overseeing the spacewalk for

1673

02:26:38,770 --> 02:26:37,260

today

1674

02:26:41,630 --> 02:26:38,780

two space walking astronauts

1675

02:26:44,570 --> 02:26:41,640

koichiwakata and Nicole Mann working on

1676
02:26:46,190 --> 02:26:44,580
uh upgrades to the power Channel and

1677
02:26:49,250 --> 02:26:46,200
some of the prep work needed for the

1678
02:26:51,950 --> 02:26:49,260
arrival of irosas or International Space

1679
02:26:54,110 --> 02:26:51,960
Station roll out solar arrays later this

1680
02:26:56,090 --> 02:26:54,120
summer they'll be working on two

1681
02:26:59,090 --> 02:26:56,100
mounting platforms one on the 1B Channel

1682
02:27:01,309 --> 02:26:59,100
and another on the one a koichi bakata

1683
02:27:04,610 --> 02:27:01,319
is already at the 1B Channel tightening

1684
02:27:06,230 --> 02:27:04,620
some bolts as part of the final steps to

1685
02:27:08,809 --> 02:27:06,240
make sure that mounting platform is

1686
02:27:11,630 --> 02:27:08,819
secure it's expected that that's going

1687
02:27:13,670 --> 02:27:11,640
to take just the first hour or so of the

1688
02:27:15,830 --> 02:27:13,680

spacewalk and he's already getting on a

1689

02:27:17,750 --> 02:27:15,840

great timeline for getting that work

1690

02:27:19,730 --> 02:27:17,760

done which is great news so if you

1691

02:27:22,190 --> 02:27:19,740

haven't already you can set your PGT

1692

02:27:31,429 --> 02:27:22,200

back to motor and stow it

1693

02:27:35,450 --> 02:27:33,530

and that note from Xena Cardman here in

1694

02:27:38,330 --> 02:27:35,460

Mission Control saying that the two

1695

02:27:39,830 --> 02:27:38,340

bolts on the left collar are complete so

1696

02:27:41,750 --> 02:27:39,840

he's going to close up the multi-layer

1697

02:27:43,370 --> 02:27:41,760

insulation sort of the white fabric that

1698

02:27:46,010 --> 02:27:43,380

protects it thermally from the vacuum

1699

02:27:47,450 --> 02:27:46,020

space and the harshness of the sun

1700

02:27:48,950 --> 02:27:47,460

um and he'll work on some of the next

1701

02:27:50,990 --> 02:27:48,960

struts the next one should be the mid

1702

02:27:53,270 --> 02:27:51,000

strut that I'll be working on in the

1703

02:27:56,270 --> 02:27:53,280

meantime Nicole Mann is prepping her

1704

02:27:58,130 --> 02:27:56,280

work site which is the 1A Channel she's

1705

02:28:00,950 --> 02:27:58,140

getting some materials she needs she's

1706

02:28:04,490 --> 02:28:00,960

got uh she already stowed the bag that

1707

02:28:06,170 --> 02:28:04,500

has the um the struts inside and those

1708

02:28:08,330 --> 02:28:06,180

struts will be what will be used to

1709

02:28:11,870 --> 02:28:08,340

actually construct the mounting platform

1710

02:28:15,349 --> 02:28:11,880

on the mass canister of the 1A Channel

1711

02:28:16,790 --> 02:28:15,359

she got the foot restraint retrieved it

1712

02:28:19,250 --> 02:28:16,800

from one of the work sites and you can

1713

02:28:20,870 --> 02:28:19,260

sort of see it attached to her uh right

1714

02:28:22,730 --> 02:28:20,880

now from this view on the outside of the

1715

02:28:24,889 --> 02:28:22,740

space station that foot restraint is

1716

02:28:26,809 --> 02:28:24,899

going to help to access some of the

1717

02:28:28,550 --> 02:28:26,819

areas that are needed for actually

1718

02:28:32,090 --> 02:28:28,560

constructing that mounting platform

1719

02:28:34,969 --> 02:28:32,100

she'll be able to in Ingress or or enter

1720

02:28:38,330 --> 02:28:34,979

that that foot restraint and give her

1721

02:28:40,490 --> 02:28:38,340

leverage that she needs to actually

1722

02:28:43,429 --> 02:28:40,500

drive some of the bolts and actually

1723

02:28:44,690 --> 02:28:43,439

construct the mounting platform so she's

1724

02:28:47,150 --> 02:28:44,700

got that in tow and she's going to be

1725

02:28:49,610 --> 02:28:47,160

going over to the 1A work site very soon

1726

02:28:51,830 --> 02:28:49,620

to get it ready uh wakuichi wakana

1727

02:29:04,790 --> 02:28:51,840

continues to finish up the work on the

1728

02:29:59,700 --> 02:29:41,330

foreign

1729

02:29:59,710 --> 02:30:04,730

[Applause]

1730

02:30:19,570 --> 02:30:05,929

thank you

1731

02:30:19,580 --> 02:30:33,650

[Applause]

1732

02:30:38,590 --> 02:30:36,410

for the talking of

1733

02:30:42,170 --> 02:30:38,600

perfect

1734

02:30:44,090 --> 02:30:42,180

Duke walking up six I'm tracking golfers

1735

02:30:52,010 --> 02:30:44,100

already and let me know when you're

1736

02:30:59,750 --> 02:30:53,570

and of course we'll be looking for black

1737

02:31:03,950 --> 02:31:01,130

right now you're looking at the helmet

1738

02:31:07,490 --> 02:31:03,960

camera of Duke uh NASA astronaut Nicole

1739

02:31:11,030 --> 02:31:07,500

Mann she's at the 1A work site right now

1740

02:31:13,150 --> 02:31:11,040

and you see her installing the uh

1741

02:31:16,210 --> 02:31:13,160

articulating portable foot restraint

1742

02:31:19,550 --> 02:31:16,220

this foot restraint has the ability to

1743

02:31:22,130 --> 02:31:19,560

have some settings to angle the foot

1744

02:31:24,969 --> 02:31:22,140

restraint so that it can reach

1745

02:31:27,590 --> 02:31:24,979

predetermined marks that are needed for

1746

02:31:29,870 --> 02:31:27,600

the upcoming work to actually install

1747

02:31:32,270 --> 02:31:29,880

some of the struts so she's uh

1748

02:31:34,790 --> 02:31:32,280

installing that right now she's going to

1749

02:31:36,469 --> 02:31:34,800

check the the settings on the

1750

02:31:38,870 --> 02:31:36,479

articulating portable photo stream make

1751
02:31:41,650 --> 02:31:38,880
sure it's really at the right angle so

1752
02:31:45,170 --> 02:31:41,660
that she can access some of the first

1753
02:31:49,550 --> 02:31:45,180
bolts and areas that she needs to access

1754
02:31:54,050 --> 02:31:51,490
foreign

1755
02:31:57,410 --> 02:31:54,060
guys will be flying over Japan in a

1756
02:31:57,420 --> 02:32:27,230
[Applause]

1757
02:32:27,240 --> 02:33:00,650
yes

1758
02:33:54,740 --> 02:33:30,830
foreign

1759
02:33:54,750 --> 02:34:06,969
[Music]

1760
02:34:06,979 --> 02:34:12,710
all right

1761
02:34:17,290 --> 02:34:15,050
to uh the two first-time space Walkers

1762
02:34:24,650 --> 02:34:17,300
sharing their progress for today

1763
02:34:32,570 --> 02:34:27,050

we take a hecka cycle from both of you

1764

02:34:38,990 --> 02:34:34,969

and correction just koichi

1765

02:35:01,490 --> 02:34:50,510

okay

1766

02:35:05,330 --> 02:35:04,070

do you see that we copy that glitchy

1767

02:35:08,389 --> 02:35:05,340

it'll probably take us about a minute

1768

02:35:11,330 --> 02:35:08,399

before we see any change here

1769

02:35:13,550 --> 02:35:11,340

but for now uh we hear that you are in

1770

02:35:15,230 --> 02:35:13,560

place you can open the mli around the

1771

02:35:18,710 --> 02:35:15,240

mid strut color to access those bolts

1772

02:35:20,870 --> 02:35:18,720

M25 and M26 okay and I'll have bgt

1773

02:35:23,570 --> 02:35:20,880

settings when you're ready

1774

02:35:46,130 --> 02:35:23,580

copy that

1775

02:35:46,140 --> 02:36:14,630

foreign

1776

02:36:20,809 --> 02:36:17,150

and cosmetic stiff

1777

02:36:28,389 --> 02:36:20,819

Luigi for you pgp settings will be Bravo

1778

02:36:33,950 --> 02:36:30,730

09

1779

02:36:58,309 --> 02:36:33,960

yeah clockwise two is that correct a

1780

02:36:58,319 --> 02:37:10,570

thank you

1781

02:37:10,580 --> 02:37:14,630

can you see in my hacker

1782

02:37:14,640 --> 02:37:20,270

we do see your hecka

1783

02:37:20,280 --> 02:37:24,950

okay so this is what I'm looking at

1784

02:37:24,960 --> 02:37:30,170

the black line pointed towards unlocked

1785

02:37:30,180 --> 02:37:34,450

foreign

1786

02:37:43,070 --> 02:37:37,250

camera views from kojji wakata and

1787

02:37:46,490 --> 02:37:44,990

Ager

1788

02:37:49,670 --> 02:37:46,500

all right you think about that I'll move

1789

02:37:49,680 --> 02:38:04,690

copy Duke that sounds like a good plan

1790

02:38:09,830 --> 02:38:06,490

25.45

1791

02:38:18,770 --> 02:38:09,840

12.14 turns

1792

02:38:21,490 --> 02:38:19,730

okay

1793

02:38:25,250 --> 02:38:21,500

copy green light

1794

02:38:32,570 --> 02:38:25,260

25.4 on the torque and four turns

1795

02:38:37,790 --> 02:38:33,730

yeah

1796

02:38:42,950 --> 02:38:39,349

speak Luigi

1797

02:38:44,389 --> 02:38:42,960

you can go to M26 now this is the other

1798

02:38:46,490 --> 02:38:44,399

Bolt

1799

02:38:52,010 --> 02:38:46,500

same deal we're expecting about four or

1800

02:38:52,020 --> 02:39:02,630

how do you work

1801
02:39:07,010 --> 02:39:04,610
uh you know we talked about I'm going to

1802
02:39:12,349 --> 02:39:07,020
move on to the triangle and talk so we

1803
02:39:18,530 --> 02:39:15,170
okay copy that Duke

1804
02:39:21,170 --> 02:39:18,540
so if you want to one other thing you

1805
02:39:23,630 --> 02:39:21,180
can try is using the boot plate for some

1806
02:39:26,870 --> 02:39:23,640
extra Leverage

1807
02:39:28,309 --> 02:39:26,880
again we'll take your expertise here I'm

1808
02:39:31,070 --> 02:39:28,319
happy to wait until koichi gets there

1809
02:39:35,210 --> 02:39:31,080
you can also do the rest of the apfr

1810
02:39:39,710 --> 02:39:37,790
so a quick recap of where we are we're

1811
02:39:44,530 --> 02:39:39,720
seeing both the helmet cameras of koichi

1812
02:39:49,370 --> 02:39:47,270
struts there's the various components of

1813
02:39:50,929 --> 02:39:49,380

the mounting platform he's asking for

1814

02:39:52,670 --> 02:39:50,939

the settings that are needed on his

1815

02:39:55,010 --> 02:39:52,680

screen or this power drill to drive some

1816

02:39:57,410 --> 02:39:55,020

of the bolts on the right side Duke is

1817

02:39:59,809 --> 02:39:57,420

preparing the work site for installing a

1818

02:40:01,250 --> 02:39:59,819

mounting platform on the 1A Channel and

1819

02:40:03,230 --> 02:40:01,260

she's working on

1820

02:40:05,389 --> 02:40:03,240

um portable foot restraints sort of the

1821

02:40:07,130 --> 02:40:05,399

area where our feet will soon go later

1822

02:40:08,630 --> 02:40:07,140

in the timely and making sure that

1823

02:40:10,130 --> 02:40:08,640

that's in a good configuration so

1824

02:40:12,550 --> 02:40:10,140

they're both at two different work sites

1825

02:40:18,290 --> 02:40:16,070

visually is there more than four

1826

02:40:21,590 --> 02:40:18,300

okay copy that's perfect about five

1827

02:40:24,110 --> 02:40:21,600

turns with that you can set your PGT to

1828

02:40:26,630 --> 02:40:24,120

manual ratchet clockwise and you'll be

1829

02:40:28,910 --> 02:40:26,640

torquing both of those bolts looking for

1830

02:40:34,790 --> 02:40:28,920

any additional turns report those to us

1831

02:40:34,800 --> 02:40:43,910

do that

1832

02:40:43,920 --> 02:40:51,410

foreign

1833

02:40:51,420 --> 02:41:04,790

copy Duke great work

1834

02:41:10,070 --> 02:41:07,610

so seeing as he did with the left strut

1835

02:41:13,309 --> 02:41:10,080

on the Min strut koichiwakata is uh

1836

02:41:15,889 --> 02:41:13,319

first using the his pistol grip tool to

1837

02:41:18,790 --> 02:41:15,899

uh Drive uh with the tool itself

1838

02:41:22,130 --> 02:41:18,800

followed by some manual ratcheting to

1839

02:41:23,990 --> 02:41:22,140

finalize the torque on each of the bolts

1840

02:41:26,570 --> 02:41:24,000

so right now he's working on that mid

1841

02:41:28,130 --> 02:41:26,580

strut and then once again we're um in a

1842

02:41:30,950 --> 02:41:28,140

Handover period so we're going to

1843

02:41:32,389 --> 02:41:30,960

temporarily lose some of the video and

1844

02:41:34,429 --> 02:41:32,399

audio from the space station beginning

1845

02:41:36,650 --> 02:41:34,439

audio first it seems like we're getting

1846

02:41:39,230 --> 02:41:36,660

some sounds from the space station back

1847

02:41:41,210 --> 02:41:39,240

with you guys after a quick Handover

1848

02:41:43,190 --> 02:41:41,220

koichi we were tracking you were in

1849

02:41:45,530 --> 02:41:43,200

manual projects but have not heard the

1850

02:41:57,830 --> 02:41:45,540

report yet and Duke were tracking you're

1851
02:42:03,730 --> 02:42:00,469
copying two pots additional quarter turn

1852
02:42:09,770 --> 02:42:07,730
is okay now getting additional quarter

1853
02:42:12,469 --> 02:42:09,780
turns

1854
02:42:14,929 --> 02:42:12,479
okay coffee two pops an additional

1855
02:42:15,889 --> 02:42:14,939
quarter turn that's a good bolt on both

1856
02:42:18,590 --> 02:42:15,899
of those

1857
02:42:21,110 --> 02:42:18,600
so with that you can set your PGT back

1858
02:42:29,070 --> 02:42:21,120
to motor and so you can also now

1859
02:42:33,050 --> 02:42:30,410
[Applause]

1860
02:42:35,210 --> 02:42:33,060
yeah I can celebrate you uh one half

1861
02:42:37,969 --> 02:42:35,220
about the game right

1862
02:42:40,190 --> 02:42:37,979
yeah after this you'll be uh closing the

1863
02:42:43,730 --> 02:42:40,200

mli on the collar bolts and yes you can

1864

02:42:43,740 --> 02:42:55,670

okay copy that

1865

02:43:01,010 --> 02:42:58,490

Duke if you feel like that apfr is

1866

02:43:03,469 --> 02:43:01,020

behaving you can feel free to continue

1867

02:43:07,130 --> 02:43:03,479

work on it but we can also have you

1868

02:43:12,550 --> 02:43:07,140

pause and head to the upper triangle and

1869

02:43:27,770 --> 02:43:15,710

halfway there

1870

02:43:35,270 --> 02:43:29,690

so as we regain video back from the

1871

02:43:35,280 --> 02:43:42,530

we've got a heck of you and copy the mli

1872

02:43:42,540 --> 02:43:45,230

okay

1873

02:43:52,250 --> 02:43:49,010

the next is again from the uh party

1874

02:43:57,349 --> 02:43:55,190

copy the mli over the collar bolts is

1875

02:43:59,870 --> 02:43:57,359

just out of our view in your heka right

1876

02:44:02,150 --> 02:43:59,880

now so if you can reposition just a

1877

02:44:05,030 --> 02:44:02,160

smidge we'll take a look but we'll also

1878

02:44:11,270 --> 02:44:05,040

just trust your eyes on whether that's

1879

02:44:11,280 --> 02:44:15,530

you know we can do extra 90 to move

1880

02:44:22,010 --> 02:44:18,830

yeah you look great there koichi

1881

02:44:24,830 --> 02:44:22,020

we can have you head to the mounting

1882

02:44:28,730 --> 02:44:27,170

check that it's clear of mli

1883

02:44:42,910 --> 02:44:28,740

and you'll probably have an even better

1884

02:44:48,170 --> 02:44:45,230

and it's um

1885

02:44:52,969 --> 02:44:48,180

talk so when I get to uh

1886

02:44:55,969 --> 02:44:52,979

tool I'll use it for um right now

1887

02:44:58,910 --> 02:44:55,979

copy that plan Duke we like it so we've

1888

02:45:01,429 --> 02:44:58,920

got tango tango Fox 12 those are good

1889

02:45:03,230 --> 02:45:01,439

settings but the pitch knob is still uh

1890

02:45:05,150 --> 02:45:03,240

not back out

1891

02:45:06,770 --> 02:45:05,160

um and I like the plan to start working

1892

02:45:18,110 --> 02:45:06,780

on the triangle we'll come back with the

1893

02:45:30,240 --> 02:45:19,670

people

1894

02:45:30,250 --> 02:46:10,190

[Music]

1895

02:46:14,750 --> 02:46:12,290

which you were taking a look there it's

1896

02:46:17,809 --> 02:46:14,760

a little bit dark in your camera view

1897

02:46:20,870 --> 02:46:17,819

we'll trust your uh visual report as

1898

02:46:20,880 --> 02:46:24,420

okay so uh

1899

02:46:29,750 --> 02:46:26,630

[Music]

1900

02:46:38,690 --> 02:46:29,760

pretty well and the right side I can

1901

02:46:38,700 --> 02:46:42,650

there we are still

1902

02:46:46,630 --> 02:46:44,210

um

1903

02:47:01,010 --> 02:46:46,640

and I can sit you down a little

1904

02:47:06,170 --> 02:47:04,490

okay Gucci we copy all um you're ahead

1905

02:47:08,330 --> 02:47:06,180

of the timeline right now so we'll use

1906

02:47:10,490 --> 02:47:08,340

this time to have you go over and adjust

1907

02:47:12,889 --> 02:47:10,500

that mli just take care of whatever Gap

1908

02:47:12,899 --> 02:47:22,870

okay

1909

02:47:28,490 --> 02:47:26,270

is still working on the 1B site he's uh

1910

02:47:29,809 --> 02:47:28,500

gonna take some time that white fabric

1911

02:47:31,910 --> 02:47:29,819

that's on the outside of these struts

1912

02:47:34,150 --> 02:47:31,920

just make sure that's nice and tight

1913

02:47:39,889 --> 02:47:37,610

Duke Nicole man on the 1A site uh

1914

02:47:42,110 --> 02:47:39,899

working on the portable foot restraint

1915

02:47:44,270 --> 02:47:42,120

uh she's also going to start building

1916

02:47:45,650 --> 02:47:44,280

the different components of the mounting

1917

02:47:48,290 --> 02:47:45,660

platform starting with the upper

1918

02:47:50,210 --> 02:47:48,300

triangle the top most part of the

1919

02:47:53,150 --> 02:47:50,220

mounting bracket you want me to do

1920

02:48:16,490 --> 02:47:53,160

another HEPA scan

1921

02:48:20,870 --> 02:48:19,250

okay I'm already there and uh often

1922

02:48:23,809 --> 02:48:20,880

bracket and I don't know if you can see

1923

02:48:25,910 --> 02:48:23,819

the heck of you but uh you know the nla

1924

02:48:28,429 --> 02:48:25,920

is covering

1925

02:48:56,870 --> 02:48:28,439

copy creature that's a good view we're

1926

02:49:02,210 --> 02:48:59,570

okay koichi we're taking a look and we

1927

02:49:04,730 --> 02:49:02,220

see a flap of mli open on the

1928

02:49:07,490 --> 02:49:04,740

telescoping end

1929

02:49:09,469 --> 02:49:07,500

of the strut if you see that as well

1930

02:49:13,550 --> 02:49:09,479

we'll have you go over and see if you

1931

02:49:18,770 --> 02:49:15,830

get on the right side

1932

02:49:26,929 --> 02:49:18,780

hey from Gucci

1933

02:49:32,450 --> 02:49:29,410

Engineers on the ground assessing the

1934

02:49:34,250 --> 02:49:32,460

configuration of the mounting platform

1935

02:49:35,870 --> 02:49:34,260

where koichiwakata is currently working

1936

02:49:38,570 --> 02:49:35,880

we're getting a view from his home the

1937

02:49:40,790 --> 02:49:38,580

camera there looking at the multi-layer

1938

02:49:42,770 --> 02:49:40,800

insulation that white fabric I just

1939

02:49:44,510 --> 02:49:42,780

really want to make sure it's covered

1940

02:49:46,070 --> 02:49:44,520

very nicely and once it's in a good

1941

02:49:47,870 --> 02:49:46,080

configuration you'll get confirmation

1942

02:49:50,750 --> 02:49:47,880

from the ground teams that they're happy

1943

02:49:57,830 --> 02:49:50,760

with it and uh koichi makata will be

1944

02:49:57,840 --> 02:50:02,150

but

1945

02:50:06,170 --> 02:50:04,730

we use this integrated wire tie to

1946

02:50:10,309 --> 02:50:06,180

secure this uh

1947

02:50:12,830 --> 02:50:10,319

a little bit open eye does it look good

1948

02:50:14,270 --> 02:50:12,840

to you that looks beautiful we really

1949

02:50:17,030 --> 02:50:14,280

like that

1950

02:50:18,710 --> 02:50:17,040

with that we can have you depart this

1951

02:50:21,950 --> 02:50:18,720

worksite and you'll be translating over

1952

02:50:26,990 --> 02:50:24,070

copy that translate

1953

02:50:29,750 --> 02:50:27,000

that's perfect you'll head to the iea

1954

02:50:31,969 --> 02:50:29,760

Via that right lower strut

1955

02:50:34,130 --> 02:50:31,979

minimize translation on the midstret if

1956

02:50:36,530 --> 02:50:34,140

you can and then you'll be going inward

1957

02:50:38,630 --> 02:50:36,540

on the S6 iea

1958

02:50:51,309 --> 02:50:38,640

at the inboard Edge across to the

1959

02:50:55,550 --> 02:50:53,929

there are three main tasks that he needs

1960

02:50:58,030 --> 02:50:55,560

to accomplish over at the mounting

1961

02:51:01,309 --> 02:50:58,040

platform uh he was working his way

1962

02:51:04,010 --> 02:51:01,319

basically clockwise around the mounting

1963

02:51:07,190 --> 02:51:04,020

platform he started on the left side to

1964

02:51:10,130 --> 02:51:07,200

work on two bolts then completed the the

1965

02:51:12,290 --> 02:51:10,140

mid-strut bolts now he's gonna complete

1966

02:51:14,030 --> 02:51:12,300

his work by tightening the two bolts

1967

02:51:15,710 --> 02:51:14,040

that are on the right side of course

1968

02:51:17,330 --> 02:51:15,720

checking that multi-layer insulation

1969

02:51:19,550 --> 02:51:17,340

that white fabric along the way making

1970

02:51:21,710 --> 02:51:19,560

sure that looks good but once he's done

1971

02:51:24,650 --> 02:51:21,720

he'll really uh proceed into some

1972

02:51:26,870 --> 02:51:24,660

cleanup steps and then go over to

1973

02:51:29,389 --> 02:51:26,880

translate to the 1A worksite where

1974

02:51:31,630 --> 02:51:29,399

Nicole Mann is currently starting to

1975

02:51:34,190 --> 02:51:31,640

construct some of the components of the

1976
02:51:37,550 --> 02:51:34,200
of the mounting bracket over there and

1977
02:51:41,570 --> 02:51:37,560
then they'll work on that side together

1978
02:51:43,429 --> 02:51:41,580
okay copy that Duke you can keep that

1979
02:51:45,889 --> 02:51:43,439
Tethered to the bag lock out the threat

1980
02:51:48,770 --> 02:51:45,899
if you need to you'll be aligning the

1981
02:51:50,389 --> 02:51:48,780
right upper strut L7 to the mounting

1982
02:51:52,070 --> 02:51:50,399
bracket right side

1983
02:51:54,050 --> 02:51:52,080
check that the alignment tab is in the

1984
02:51:56,150 --> 02:51:54,060
groove and the black lines are aligned

1985
02:52:13,010 --> 02:51:56,160
on the end of the mounting bracket I'll

1986
02:52:13,020 --> 02:52:31,870
foreign

1987
02:52:37,250 --> 02:52:34,490
Duke is building the mounting bracket

1988
02:52:39,349 --> 02:52:37,260

you can see from this um graphic right

1989

02:52:41,330 --> 02:52:39,359

here what that's going to look like so

1990

02:52:43,250 --> 02:52:41,340

that upper part with this sort of

1991

02:52:46,010 --> 02:52:43,260

pinkish purple part is the upper

1992

02:52:48,230 --> 02:52:46,020

triangle she's right now building that

1993

02:52:49,490 --> 02:52:48,240

first uh so she's getting a head start

1994

02:52:51,230 --> 02:52:49,500

on there and it's going to attach to

1995

02:52:54,170 --> 02:52:51,240

What's called the mass canister that's

1996

02:52:56,510 --> 02:52:54,180

that greenish bluish soda can looking

1997

02:52:58,790 --> 02:52:56,520

structure that's where the Legacy solar

1998

02:53:00,889 --> 02:52:58,800

arrays were originally deployed from and

1999

02:53:04,190 --> 02:53:00,899

this is really a sort of an adapter to

2000

02:53:06,889 --> 02:53:04,200

allow the irosa solar arrays to attach

2001
02:53:09,469 --> 02:53:06,899
to the mounting bracket that's that sort

2002
02:53:11,510 --> 02:53:09,479
of bluish Indigo part labeled there on

2003
02:53:13,429 --> 02:53:11,520
the left iron mounting bracket so

2004
02:53:15,650 --> 02:53:13,439
she's just right now building that that

2005
02:54:11,510 --> 02:53:15,660
upper structure

2006
02:54:17,570 --> 02:54:14,710
hey quiche if you can pause right there

2007
02:54:20,389 --> 02:54:17,580
you'll be following yourself each other

2008
02:54:23,030 --> 02:54:20,399
back inboard to the one alpha work site

2009
02:54:25,910 --> 02:54:23,040
we see you not quite translating in the

2010
02:54:30,889 --> 02:54:28,610
it looks like it's a

2011
02:54:32,230 --> 02:54:30,899
from the power

2012
02:54:35,269 --> 02:54:32,240
um

2013
02:54:36,110 --> 02:54:35,279

to my left that's what I was following

2014

02:54:38,630 --> 02:54:36,120

it

2015

02:54:39,950 --> 02:54:38,640

but

2016

02:54:43,429 --> 02:54:39,960

you see that

2017

02:54:46,250 --> 02:54:43,439

yeah I do see that so on the

2018

02:54:48,889 --> 02:54:46,260

inboard edge of the iea we would have

2019

02:54:51,349 --> 02:54:48,899

you cross back over to the non-radiator

2020

02:54:52,490 --> 02:54:51,359

side you can also follow the handrails

2021

02:54:55,030 --> 02:54:52,500

that are in front of you to the other

2022

02:55:11,210 --> 02:54:55,040

side of the iea

2023

02:55:18,110 --> 02:55:14,150

here

2024

02:55:22,730 --> 02:55:18,120

at the end of the iea city

2025

02:55:27,469 --> 02:55:25,070

that's perfect koichi

2026

02:55:29,750 --> 02:55:27,479

once you're on the non-radiator side you

2027

02:55:32,870 --> 02:55:29,760

can head inboard along the Zenith Edge

2028

02:55:34,550 --> 02:55:32,880

you'll follow S6 handrail 2008

2029

02:55:39,110 --> 02:55:34,560

and you'll be picking up your green Hook

2030

02:55:46,429 --> 02:55:39,120

from S6 handrail 2007.

2031

02:55:46,439 --> 02:56:06,250

foreign

2032

02:56:06,260 --> 02:56:15,429

I didn't hear the PGT settings

2033

02:56:21,110 --> 02:56:19,190

and uh just working on M14 here

2034

02:56:23,990 --> 02:56:21,120

perfect okay we're expecting

2035

02:56:39,910 --> 02:56:24,000

approximately four turns on M13 and M14

2036

02:57:47,590 --> 02:56:41,410

all right

2037

02:58:01,130 --> 02:57:49,910

for three more

2038

02:58:01,140 --> 02:58:04,550

2039
02:58:04,560 --> 02:58:15,650
foreign

2040
02:58:27,469 --> 02:58:18,170
copy three additional turns on M14

2041
02:58:33,590 --> 02:58:30,050
that's translating

2042
02:58:36,710 --> 02:58:33,600
copy quiche you'll be at the S5 S6

2043
02:58:39,769 --> 02:58:36,720
interface following the A-frame Nader

2044
02:58:42,170 --> 02:58:39,779
follow handrail 2144

2045
02:58:44,510 --> 02:58:42,180
and then on the Nader forward Edge

2046
02:58:58,309 --> 02:58:44,520
translate to the inboard edge of the one

2047
02:58:58,319 --> 02:59:04,610
because we're not moving on to uh

2048
02:59:04,620 --> 02:59:16,750
copy Duke

2049
02:59:22,130 --> 02:59:19,790
and those are straps one and two for the

2050
03:00:01,910 --> 02:59:22,140
left upper and I'll have PGT settings

2051
03:00:01,920 --> 03:00:34,990
foreign

2052
03:00:35,000 --> 03:00:45,650
thank you

2053
03:00:51,950 --> 03:00:49,070
good coordination for both of you koichi

2054
03:00:54,530 --> 03:00:51,960
if you do want to grab the Crowfoot tool

2055
03:00:57,349 --> 03:00:54,540
that's Deering hotel in the strut bag

2056
03:00:59,389 --> 03:00:57,359
you'll need the ratchet wrench as well

2057
03:01:00,950 --> 03:00:59,399
um also Duke if it would help you to

2058
03:01:02,510 --> 03:01:00,960
have an extra pair of hands you can work

2059
03:01:08,830 --> 03:01:02,520
together on the upper triangle and then

2060
03:01:14,929 --> 03:01:12,410
since he's right there

2061
03:01:16,429 --> 03:01:14,939
copy that sounds good to us and yeah

2062
03:01:18,230 --> 03:01:16,439
Duke we concur that all of the settings

2063
03:01:22,309 --> 03:01:18,240

are great we just want that pitch knob

2064

03:01:25,969 --> 03:01:24,110

and if you need that tool quickly I can

2065

03:01:27,889 --> 03:01:25,979

hand it to you okay let me try it first

2066

03:01:29,510 --> 03:01:27,899

without about it and then it doesn't

2067

03:01:30,889 --> 03:01:29,520

work I'll get it I think I got it about

2068

03:01:34,070 --> 03:01:30,899

halfway there

2069

03:01:37,370 --> 03:01:36,410

so to catch up on the procedures for

2070

03:01:39,309 --> 03:01:37,380

today

2071

03:01:41,929 --> 03:01:39,319

um koichiwakata

2072

03:01:44,330 --> 03:01:41,939

did tighten some of the bolts on the

2073

03:01:46,610 --> 03:01:44,340

struts on the 1B side he's going to go

2074

03:01:48,170 --> 03:01:46,620

over and help Nicole Mann uh just for a

2075

03:01:50,750 --> 03:01:48,180

little bit they're gonna split up the

2076
03:01:52,849 --> 03:01:50,760
tasks on the 1A side Nicole man uh call

2077
03:01:55,250 --> 03:01:52,859
sign Duke is going to be continue to

2078
03:01:57,349 --> 03:01:55,260
work on that upper triangle which is the

2079
03:01:59,570 --> 03:01:57,359
top section of the full mounting

2080
03:02:01,429 --> 03:01:59,580
platform that's going to be installed on

2081
03:02:03,590 --> 03:02:01,439
the 1A Mass canister as part of today's

2082
03:02:05,389 --> 03:02:03,600
spacewalk in the meantime koichi bukata

2083
03:02:07,910 --> 03:02:05,399
over on the 1A work site they're over

2084
03:02:10,070 --> 03:02:07,920
there together now uh kawichi will work

2085
03:02:12,070 --> 03:02:10,080
on the continue to work on that foot

2086
03:02:14,389 --> 03:02:12,080
restraints

2087
03:02:16,070 --> 03:02:14,399
as part of accessing those different

2088
03:02:17,630 --> 03:02:16,080

parts of the mounting platform so the

2089

03:02:20,110 --> 03:02:17,640

two of them are over on the work one a

2090

03:02:22,370 --> 03:02:20,120

work site now

2091

03:02:23,330 --> 03:02:22,380

additional three that's four turns total

2092

03:03:03,670 --> 03:02:23,340

thank you

2093

03:03:15,410 --> 03:03:05,860

all the way

2094

03:03:17,410 --> 03:03:15,420

[Applause]

2095

03:03:25,510 --> 03:03:17,420

yeah

2096

03:03:25,520 --> 03:03:30,050

Houston copies

2097

03:03:30,060 --> 03:04:25,870

foreign

2098

03:04:30,889 --> 03:04:28,790

Izzy and I got two hand turns on m17

2099

03:04:34,790 --> 03:04:30,899

ready for PGT settings

2100

03:04:47,510 --> 03:04:34,800

copy two hand turns on m17 PGT settings

2101
03:04:52,309 --> 03:04:49,510
thank you

2102
03:04:55,730 --> 03:04:52,319
a firm you'll be going to torque we're

2103
03:04:57,230 --> 03:04:55,740
expecting a little over six turns to

2104
03:04:59,750 --> 03:04:57,240
nine turns

2105
03:05:01,490 --> 03:04:59,760
so that'll be about four or five to

2106
03:05:03,590 --> 03:05:01,500
seven turns additional to the two that

2107
03:05:09,950 --> 03:05:03,600
you got by hand and checking as well for

2108
03:05:15,349 --> 03:05:12,710
because it's now it's locked on Tango

2109
03:05:17,270 --> 03:05:15,359
Tango and it's about in the coming

2110
03:05:28,290 --> 03:05:17,280
depressed

2111
03:05:28,300 --> 03:05:33,710
[Applause]

2112
03:05:38,450 --> 03:05:36,050
all right koichi will have you Stow that

2113
03:05:43,070 --> 03:05:38,460

okay put tool back in the strut bag and

2114

03:05:43,080 --> 03:05:48,290

copy that tools

2115

03:05:48,300 --> 03:05:54,670

you are the man

2116

03:05:54,680 --> 03:05:59,690

that Duke is the man

2117

03:06:04,610 --> 03:06:01,429

we love it

2118

03:06:07,910 --> 03:06:04,620

there's a lot more and

2119

03:06:09,469 --> 03:06:07,920

Luigi wakata able to uh work with that

2120

03:06:12,110 --> 03:06:09,479

uh pesky

2121

03:06:13,790 --> 03:06:12,120

um apfr the portable foot restraint now

2122

03:06:15,590 --> 03:06:13,800

the settings on that portable foot

2123

03:06:18,530 --> 03:06:15,600

restraint are complete so he'll join

2124

03:06:21,230 --> 03:06:18,540

Nicole man call sign Duke uh to continue

2125

03:06:22,910 --> 03:06:21,240

assembling that upper triangle of the

2126
03:06:31,550 --> 03:06:22,920
mounting platform that they're going to

2127
03:06:31,560 --> 03:06:55,750
foreign

2128
03:06:59,990 --> 03:06:58,490
flush and good torque with that you can

2129
03:07:02,830 --> 03:07:00,000
release the wrap from the right upper

2130
03:07:02,840 --> 03:07:17,510
[Music]

2131
03:07:17,520 --> 03:07:36,890
foreign

2132
03:07:36,900 --> 03:07:40,389
[Music]

2133
03:07:40,399 --> 03:07:52,690
happy Duke

2134
03:07:56,929 --> 03:07:55,849
repeatedly awareness just above your

2135
03:07:58,190 --> 03:07:56,939
head okay

2136
03:08:00,950 --> 03:07:58,200
beautiful

2137
03:08:05,269 --> 03:08:00,960
I'm gonna we completed my weight Setter

2138
03:08:05,279 --> 03:08:08,809

Eastern copies

2139

03:08:14,030 --> 03:08:11,830

why installed covering

2140

03:08:36,469 --> 03:08:14,040

pearls on the grounding block I'll have

2141

03:08:36,479 --> 03:08:51,410

because

2142

03:08:51,420 --> 03:09:17,050

dude we got me

2143

03:09:21,469 --> 03:09:19,190

sounds good

2144

03:09:34,130 --> 03:09:21,479

I'm right there next to you to your

2145

03:09:37,990 --> 03:09:36,469

okay

2146

03:09:41,090 --> 03:09:38,000

um

2147

03:09:43,370 --> 03:09:41,100

okay you can work on the mli and also

2148

03:09:45,050 --> 03:09:43,380

working on those upper stretch okay copy

2149

03:09:47,690 --> 03:09:45,060

that

2150

03:09:49,500 --> 03:09:47,700

all right I'm gonna rotate back towards

2151
03:09:52,610 --> 03:09:49,510
you that's perfect all right

2152
03:09:56,410 --> 03:09:52,620
[Applause]

2153
03:09:59,750 --> 03:09:56,420
all right then I'm gonna work with me

2154
03:10:02,690 --> 03:09:59,760
okay and heads up guys we've got about a

2155
03:10:04,429 --> 03:10:02,700
minute until a two minute loss so Duke

2156
03:10:08,450 --> 03:10:04,439
when you're ready I can give you PGT

2157
03:10:08,460 --> 03:10:11,330
okay go ahead

2158
03:10:11,340 --> 03:10:15,230
Bravo three clockwise too

2159
03:10:15,240 --> 03:10:22,490
503 clockwise

2160
03:10:26,269 --> 03:10:24,889
yeah you got it and just check for black

2161
03:10:28,730 --> 03:10:26,279
light and Flesh on both of those once

2162
03:10:34,730 --> 03:10:28,740
you torque them

2163
03:10:38,510 --> 03:10:36,650

sun rising on the International Space

2164

03:10:41,990 --> 03:10:38,520

Station as uh

2165

03:10:51,469 --> 03:10:42,000

Duke gets those pistol grip tool or the

2166

03:10:55,070 --> 03:10:53,269

them working together is making the

2167

03:10:56,630 --> 03:10:55,080

build of that upper triangle of the

2168

03:10:58,670 --> 03:10:56,640

mounting platform a little bit easier

2169

03:11:01,250 --> 03:10:58,680

they were able to build the Handover we

2170

03:11:03,410 --> 03:11:01,260

are expecting flu's communication

2171

03:11:14,110 --> 03:11:03,420

um the just video and audio very briefly

2172

03:11:18,950 --> 03:11:16,849

and right as expected

2173

03:11:20,690 --> 03:11:18,960

um we're losing video and audio but

2174

03:11:23,150 --> 03:11:20,700

we'll be regaining it shortly we get

2175

03:11:25,550 --> 03:11:23,160

good communication from the tracking and

2176

03:11:35,389 --> 03:11:25,560

data relate satellites through uh at

2177

03:11:39,410 --> 03:11:37,730

though this is a larger Gap in

2178

03:11:42,889 --> 03:11:39,420

communication so you'll notice a lot of

2179

03:11:45,290 --> 03:11:42,899

folks in the room taking a bio break it

2180

03:11:47,269 --> 03:11:45,300

is uh the gaps are relatively short

2181

03:11:49,429 --> 03:11:47,279

through a dynamic operation but this is

2182

03:11:52,309 --> 03:11:49,439

one of the longer ones so it gives the

2183

03:12:41,690 --> 03:11:52,319

team an opportunity to take a break uh

2184

03:12:44,750 --> 03:12:43,550

while we're waiting to regain

2185

03:12:48,170 --> 03:12:44,760

communication from the International

2186

03:12:50,150 --> 03:12:48,180

Space Station let's go over the the plan

2187

03:12:51,710 --> 03:12:50,160

and the work for today so first of all

2188

03:12:53,750 --> 03:12:51,720

uh what they're doing is they're

2189

03:12:55,670 --> 03:12:53,760

currently on the 1A channel the channel

2190

03:12:58,070 --> 03:12:55,680

that's marked in the yellow there

2191

03:13:01,910 --> 03:12:58,080

um they are constructing a modification

2192

03:13:03,410 --> 03:13:01,920

kit uh four future irosa solar arrays

2193

03:13:05,389 --> 03:13:03,420

International Space Station rollout

2194

03:13:06,530 --> 03:13:05,399

solar arrays there are four that are

2195

03:13:08,389 --> 03:13:06,540

installed in the International Space

2196

03:13:10,309 --> 03:13:08,399

Station so far

2197

03:13:13,010 --> 03:13:10,319

um that is all of the channels marked in

2198

03:13:15,590 --> 03:13:13,020

blue and then the green the mounting

2199

03:13:18,230 --> 03:13:15,600

hardware that that mounting platform was

2200

03:13:20,990 --> 03:13:18,240

complete uh but we saw kawishi wakata

2201
03:13:22,790 --> 03:13:21,000
tighten some of the bolts on the struts

2202
03:13:26,230 --> 03:13:22,800
to make sure that that's ready to

2203
03:13:28,610 --> 03:13:26,240
receive and irosa later this summer

2204
03:13:30,950 --> 03:13:28,620
but the two of them now are over on the

2205
03:13:34,070 --> 03:13:30,960
1A Channel and they are working on the

2206
03:13:35,809 --> 03:13:34,080
modification kit now this is really a

2207
03:13:38,210 --> 03:13:35,819
modification to the original Mass

2208
03:13:40,750 --> 03:13:38,220
canister that's that uh light blue kind

2209
03:13:43,429 --> 03:13:40,760
of greenish Tin Can looking structure

2210
03:13:45,590 --> 03:13:43,439
that had a legacy solar arrays and they

2211
03:13:48,710 --> 03:13:45,600
are building that those struts that are

2212
03:13:51,050 --> 03:13:48,720
gonna house soon the International Space

2213
03:13:53,450 --> 03:13:51,060

Station roll out solar array on that

2214

03:13:54,950 --> 03:13:53,460

mounting bracket that you see there in

2215

03:13:56,990 --> 03:13:54,960

the graphics so they're building that

2216

03:13:59,450 --> 03:13:57,000

top portion right now the upper triangle

2217

03:14:02,870 --> 03:13:59,460

uh that requires a cordless power drill

2218

03:14:04,550 --> 03:14:02,880

to secure some of the bolts in place all

2219

03:14:07,010 --> 03:14:04,560

of these different components as you see

2220

03:14:09,110 --> 03:14:07,020

them now were transported through a bag

2221

03:14:10,730 --> 03:14:09,120

and that bag has been transported over

2222

03:14:12,590 --> 03:14:10,740

to their work site

2223

03:14:14,030 --> 03:14:12,600

um you can see some of the upper struts

2224

03:14:16,250 --> 03:14:14,040

some of those components they had to

2225

03:14:18,590 --> 03:14:16,260

take them out all of them are marked so

2226

03:14:20,330 --> 03:14:18,600

they know which pieces are which and

2227

03:14:22,790 --> 03:14:20,340

right now they are putting them together

2228

03:14:24,830 --> 03:14:22,800

to build the upper triangle this is not

2229

03:14:26,870 --> 03:14:24,840

the first time we've done it so we do

2230

03:14:29,330 --> 03:14:26,880

have Graphics from previous space walks

2231

03:14:31,250 --> 03:14:29,340

you can see there on the right that is a

2232

03:14:32,929 --> 03:14:31,260

fully constructed modification kit

2233

03:14:35,030 --> 03:14:32,939

that's what it looks like and then

2234

03:14:36,710 --> 03:14:35,040

here's a from a previous spacewalk to

2235

03:14:38,929 --> 03:14:36,720

space Walkers actually installing the

2236

03:14:41,450 --> 03:14:38,939

rollout solar arrays once it's installed

2237

03:14:43,070 --> 03:14:41,460

it unfolds just like you see there and

2238

03:14:45,410 --> 03:14:43,080

it's called the rollout solar array for

2239

03:14:47,030 --> 03:14:45,420

a reason it rolls out and covers uh the

2240

03:14:48,889 --> 03:14:47,040

bottom portion of the Legacy solar

2241

03:14:51,050 --> 03:14:48,899

arrays but it generates an incredible

2242

03:14:52,490 --> 03:14:51,060

amount of power and so far four have

2243

03:14:54,290 --> 03:14:52,500

been installed and are performing very

2244

03:14:57,769 --> 03:14:54,300

well so what they're doing now is

2245

03:15:00,769 --> 03:14:57,779

they're creating the um modification kit

2246

03:15:01,790 --> 03:15:00,779

for those another pair of solar arrays

2247

03:15:03,950 --> 03:15:01,800

that are going to be delivered to the

2248

03:15:05,929 --> 03:15:03,960

International Space Station later in the

2249

03:15:07,490 --> 03:15:05,939

summer we're now regaining video and

2250

03:15:09,170 --> 03:15:07,500

audio from the International Space

2251

03:15:11,870 --> 03:15:09,180

Station so let's go back to the action

2252

03:15:14,210 --> 03:15:11,880

uh where koichi and Duke are both

2253

03:15:25,610 --> 03:15:14,220

continuing to work on constructing uh

2254

03:15:33,590 --> 03:15:29,170

but I got 19 additional turns on M15

2255

03:15:36,830 --> 03:15:33,600

green light 18.3 on the phone on both

2256

03:15:39,889 --> 03:15:36,840

votes of Blackline flush okay 19

2257

03:15:44,450 --> 03:15:39,899

additional turns green light 18.3 and

2258

03:15:44,460 --> 03:15:55,370

es okay

2259

03:15:55,380 --> 03:16:03,730

foreign

2260

03:16:03,740 --> 03:16:23,590

[Music]

2261

03:16:23,600 --> 03:16:28,849

thank you

2262

03:16:36,410 --> 03:16:33,469

for M15 did you do any hand turns to

2263

03:16:36,420 --> 03:16:41,030

um

2264

03:16:50,990 --> 03:16:42,889

two turn can't start followed by 19

2265

03:16:51,000 --> 03:16:53,550

EE

2266

03:16:58,910 --> 03:16:55,730

[Applause]

2267

03:17:21,240 --> 03:16:58,920

copy Duke we're checking

2268

03:17:21,250 --> 03:17:45,349

[Applause]

2269

03:17:45,359 --> 03:17:48,889

but

2270

03:17:48,899 --> 03:17:51,889

tons

2271

03:17:51,899 --> 03:17:55,770

I took a few

2272

03:17:55,780 --> 03:18:03,950

[Applause]

2273

03:18:33,410 --> 03:18:05,269

thanks for your patience guys for

2274

03:18:38,150 --> 03:18:35,269

how come

2275

03:18:42,110 --> 03:18:38,160

okay Duke could we have you just check

2276

03:19:01,910 --> 03:18:42,120

the alignment tab is fully seated in

2277

03:19:01,920 --> 03:19:05,929

okay

2278

03:19:05,939 --> 03:19:20,269

sure

2279

03:19:20,279 --> 03:19:31,490

why myself

2280

03:19:35,870 --> 03:19:33,650

okay Duke we've got a great view of that

2281

03:19:38,450 --> 03:19:35,880

we concur with everything if you could

2282

03:19:41,630 --> 03:19:38,460

do us a favor and just hit M15 one more

2283

03:19:41,640 --> 03:19:52,250

Bobby

2284

03:19:57,530 --> 03:19:53,929

hey just kidding Duke we're actually

2285

03:19:59,030 --> 03:19:57,540

happy with that bolt great news so you

2286

03:20:04,309 --> 03:19:59,040

can release the rent from the left of

2287

03:20:04,319 --> 03:20:07,800

um

2288

03:20:07,810 --> 03:20:11,290

[Applause]

2289

03:20:15,469 --> 03:20:13,130

right

2290

03:20:19,309 --> 03:20:15,479

got it

2291

03:20:21,410 --> 03:20:19,319

yeah the next bolts will be M13 and M14

2292

03:20:25,309 --> 03:20:21,420

and PGT settings should be the same

2293

03:20:32,809 --> 03:20:28,309

I love reset clockwise

2294

03:20:37,010 --> 03:20:34,969

copy Duke

2295

03:20:39,170 --> 03:20:37,020

and koichi for you you'll be driving

2296

03:20:42,530 --> 03:20:39,180

those approximately an additional 20

2297

03:20:44,030 --> 03:20:42,540

turns looking for torque good green

2298

03:20:46,309 --> 03:20:44,040

light and Blackline flush on both of

2299

03:20:46,319 --> 03:21:01,180

happy

2300

03:21:01,190 --> 03:21:07,870

[Applause]

2301
03:21:22,970 --> 03:21:11,269
I'm gonna move the triangles with you uh

2302
03:21:22,980 --> 03:21:29,510
[Applause]

2303
03:21:36,110 --> 03:21:34,030
does it say in 13 14 on the side okay

2304
03:21:38,620 --> 03:21:36,120
I see that okay

2305
03:21:39,210 --> 03:21:38,630
all right

2306
03:21:40,690 --> 03:21:39,220
[Music]

2307
03:21:45,010 --> 03:21:40,700
[Applause]

2308
03:22:11,750 --> 03:21:48,290
clockwise suicide

2309
03:22:11,760 --> 03:22:31,210
it's 10.

2310
03:22:36,349 --> 03:22:35,269
19 and a half turns and uh had a great

2311
03:22:38,510 --> 03:22:36,359
night

2312
03:22:42,170 --> 03:22:38,520
18.5

2313
03:22:45,590 --> 03:22:42,180

the pounds 90.03 turns

2314

03:22:49,429 --> 03:22:45,600

okay 19 and a half times green light

2315

03:22:49,439 --> 03:22:52,690

that's good

2316

03:22:52,700 --> 03:22:57,370

13 I'm going to do n14.

2317

03:23:01,429 --> 03:23:00,110

going to M14

2318

03:23:06,349 --> 03:23:01,439

2319

03:23:17,710 --> 03:23:08,210

what's up

2320

03:23:23,530 --> 03:23:20,809

Duke's helmet camera we can very clearly

2321

03:23:27,349 --> 03:23:23,540

see the full build of the upper triangle

2322

03:23:29,210 --> 03:23:27,359

they've put two of the three sections of

2323

03:23:30,590 --> 03:23:29,220

the triangle together now

2324

03:23:33,290 --> 03:23:30,600

uh

2325

03:23:35,809 --> 03:23:33,300

the two of them working together

2326

03:23:39,170 --> 03:23:35,819

to install the final part of that with

2327

03:23:40,370 --> 03:23:39,180

Nicole Mann Duke able to hold one side

2328

03:23:41,349 --> 03:23:40,380

of the strut

2329

03:23:45,650 --> 03:23:41,359

um

2330

03:23:49,550 --> 03:23:45,660

koichiwakada has great access to

2331

03:23:52,070 --> 03:23:49,560

that uh final part of the upper strut

2332

03:24:19,870 --> 03:23:52,080

that's the right side of the upper

2333

03:24:25,090 --> 03:24:22,910

18 and a half turns visually confirmed I

2334

03:24:27,010 --> 03:24:25,100

got a green light

2335

03:24:29,050 --> 03:24:27,020

8.35

2336

03:24:35,210 --> 03:24:29,060

18.86 turns

2337

03:24:40,429 --> 03:24:37,610

it turns green light 18 decimal three

2338

03:24:44,990 --> 03:24:40,439

torque and black line on both M13 and

2339

03:24:49,729 --> 03:24:47,570

okay with that we are happy with those

2340

03:24:52,309 --> 03:24:49,739

bolts you can tend the PGT back to the

2341

03:24:55,010 --> 03:24:52,319

strut bag and I think at this point Duke

2342

03:24:56,950 --> 03:24:55,020

will have you go ahead and Ingress the

2343

03:25:00,410 --> 03:24:56,960

apfr

2344

03:25:04,560 --> 03:25:00,420

kuichi will have you go ahead and grab

2345

03:25:13,610 --> 03:25:07,240

[Applause]

2346

03:25:18,349 --> 03:25:15,710

big picture for you both right now are

2347

03:25:22,190 --> 03:25:18,359

limiting consumable is going to be ev1

2348

03:25:25,309 --> 03:25:22,200

medox right now looking at about 640 645

2349

03:25:26,870 --> 03:25:25,319

pet we're just about 20 minutes down on

2350

03:25:29,750 --> 03:25:26,880

the timeline right now you guys are

2351
03:25:33,710 --> 03:25:31,969
okay

2352
03:25:42,830 --> 03:25:33,720
all right crazy I'm all cleaned up I'm

2353
03:25:47,090 --> 03:25:45,469
okay all right so with the upper

2354
03:25:50,030 --> 03:25:47,100
triangle built

2355
03:25:52,370 --> 03:25:50,040
um Duke has the upper triangle Tethered

2356
03:25:53,870 --> 03:25:52,380
to herself she'll be able to get into

2357
03:25:56,150 --> 03:25:53,880
the foot restraint that's already been

2358
03:25:57,830 --> 03:25:56,160
set up to allow her to access the top

2359
03:26:00,590 --> 03:25:57,840
part of the bass canister and get ready

2360
03:26:01,630 --> 03:26:00,600
to install that upper triangle uh in the

2361
03:26:04,070 --> 03:26:01,640
meantime

2362
03:26:05,389 --> 03:26:04,080
koichiwakata working on the pistol grip

2363
03:26:07,969 --> 03:26:05,399

tool making sure that's going to be

2364

03:26:11,030 --> 03:26:07,979

stowed away and if you remember on the

2365

03:26:13,969 --> 03:26:11,040

way out to the work site koichiwakata

2366

03:26:16,130 --> 03:26:13,979

had a cable bag in tow and put it off to

2367

03:26:17,690 --> 03:26:16,140

the side to temporarily stow it he's

2368

03:26:19,610 --> 03:26:17,700

going to go ahead and access that cable

2369

03:26:22,490 --> 03:26:19,620

bag and grab some of the necessary

2370

03:26:25,729 --> 03:26:22,500

materials needed for continuing to build

2371

03:26:27,950 --> 03:26:25,739

this mounting platform next on the

2372

03:26:32,450 --> 03:26:27,960

timeline is uh now that the upper

2373

03:26:34,670 --> 03:26:32,460

triangle is built is to build that uh is

2374

03:26:36,590 --> 03:26:34,680

to build that right strut and the

2375

03:26:55,849 --> 03:26:36,600

correction that the triangle is actually

2376

03:27:00,830 --> 03:26:58,790

Duke for you as a reminder

2377

03:27:02,450 --> 03:27:00,840

no sudden movement on the mass canister

2378

03:27:04,849 --> 03:27:02,460

or mod kit

2379

03:27:07,250 --> 03:27:04,859

limit your lateral loads into the BGA

2380

03:27:08,870 --> 03:27:07,260

avoid cyclic lighting uploading and

2381

03:27:22,790 --> 03:27:08,880

donate workforces into the mod kit

2382

03:27:28,190 --> 03:27:25,130

and Duke we also suggest Fair leading on

2383

03:27:38,650 --> 03:27:28,200

S4 handrail 2213 that's the inboard

2384

03:27:38,660 --> 03:27:43,910

I'm gonna grab the uh

2385

03:27:48,710 --> 03:27:46,910

copy quiche that's perfect yep you'll be

2386

03:27:51,110 --> 03:27:48,720

going to the cable bag grabbing the one

2387

03:27:52,969 --> 03:27:51,120

alpha irosa cables

2388

03:27:56,330 --> 03:27:52,979

with the adjustable equipment tether

2389

03:28:13,309 --> 03:27:56,340

that's going on your brt

2390

03:29:30,349 --> 03:29:00,229

foreign

2391

03:29:30,359 --> 03:30:26,510

happy Duke

2392

03:30:26,520 --> 03:31:11,349

foreign

2393

03:31:25,010 --> 03:31:14,090

I think

2394

03:31:33,410 --> 03:31:27,830

hey I'm ready to uh one alpha Cable

2395

03:31:37,729 --> 03:31:35,269

that's perfect

2396

03:31:46,849 --> 03:31:37,739

between your VRT close the cable bag and

2397

03:31:51,830 --> 03:31:48,710

so this is a great shot of some of the

2398

03:31:55,309 --> 03:31:51,840

work that's being done concurrently

2399

03:31:57,830 --> 03:31:55,319

you can see uh ev2 Duke with the suit

2400

03:31:59,389 --> 03:31:57,840

with no Stripes uh is ingressing or

2401
03:32:02,990 --> 03:31:59,399
entering the portable foot restraint

2402
03:32:04,429 --> 03:32:03,000
that was set up for her to access uh

2403
03:32:06,729 --> 03:32:04,439
some of the parts that are needed to

2404
03:32:09,290 --> 03:32:06,739
install that upper triangle which

2405
03:32:11,210 --> 03:32:09,300
koichiwakata has in tow

2406
03:32:13,130 --> 03:32:11,220
um he went over to that cable bag that

2407
03:32:14,690 --> 03:32:13,140
he stowed early on as he made his way

2408
03:32:16,490 --> 03:32:14,700
out to the work site grabbing some of

2409
03:32:19,790 --> 03:32:16,500
the cables so he'll have the upper

2410
03:32:23,210 --> 03:32:19,800
triangle and the cables in tow and one's

2411
03:32:25,010 --> 03:32:23,220
uh Nicole Mann or Duke is uh inside the

2412
03:32:28,130 --> 03:32:25,020
portable foot restraint and in a good

2413
03:32:30,410 --> 03:32:28,140

configuration they'll do a handoff so

2414

03:32:33,110 --> 03:32:30,420

he'll be handing off some of the

2415

03:32:35,030 --> 03:32:33,120

components that she needs to because to

2416

03:32:37,550 --> 03:32:35,040

construct the mounting platform one at a

2417

03:32:56,880 --> 03:32:37,560

time uh and they'll work together to

2418

03:32:56,890 --> 03:33:05,870

[Music]

2419

03:34:11,450 --> 03:33:42,349

foreign

2420

03:34:11,460 --> 03:34:15,950

[Music]

2421

03:34:15,960 --> 03:34:29,150

I

2422

03:34:29,160 --> 03:34:39,370

um

2423

03:34:39,380 --> 03:34:44,349

on the right side

2424

03:34:44,359 --> 03:34:49,330

in the film

2425

03:34:53,809 --> 03:34:51,110

towards your

2426
03:34:56,750 --> 03:34:53,819
further in keep going

2427
03:34:57,890 --> 03:34:56,760
you're cutting the roof

2428
03:34:59,630 --> 03:34:57,900
you put your

2429
03:35:10,389 --> 03:34:59,640
[Applause]

2430
03:35:16,450 --> 03:35:14,030
Ichi uh wakanda has a great view

2431
03:35:19,309 --> 03:35:16,460
um he's eating um

2432
03:35:21,710 --> 03:35:19,319
and guiding her he's got a better view

2433
03:35:23,450 --> 03:35:21,720
of where her feet will go inside the

2434
03:35:27,469 --> 03:35:23,460
portable foot restraint

2435
03:35:29,750 --> 03:35:27,479
uh behind them you can see uh the Earth

2436
03:35:31,610 --> 03:35:29,760
the high definition views from the heca

2437
03:35:34,070 --> 03:35:31,620
camera are providing these beautiful

2438
03:35:36,889 --> 03:35:34,080

views of the Southern Atlantic Ocean

2439

03:35:39,110 --> 03:35:36,899

uh they just passed over the eastern

2440

03:35:40,910 --> 03:35:39,120

border of South America and are heading

2441

03:35:43,370 --> 03:35:40,920

on the northeastern track towards Africa

2442

03:35:50,090 --> 03:35:43,380

but they're over the South Atlantic

2443

03:35:54,229 --> 03:35:51,769

getting the correction that that upper

2444

03:35:59,090 --> 03:35:54,239

triangle is a specifically attached to

2445

03:36:01,309 --> 03:35:59,100

the um to the strut bag to the bag where

2446

03:36:04,210 --> 03:36:01,319

those the upper triangle components

2447

03:36:06,110 --> 03:36:04,220

actually came from but it will be

2448

03:36:07,550 --> 03:36:06,120

koichiwakata that will grab it and hand

2449

03:36:37,450 --> 03:36:07,560

it off to

2450

03:36:37,460 --> 03:36:41,460

I feel like my right one's in

2451

03:37:01,030 --> 03:36:42,670

[Applause]

2452

03:37:14,349 --> 03:37:04,250

a little more chill down

2453

03:37:18,650 --> 03:37:17,150

you can get a great view the um the

2454

03:37:20,269 --> 03:37:18,660

cameras here from the outside of the

2455

03:37:28,269 --> 03:37:20,279

International Space Station are zoomed

2456

03:37:33,769 --> 03:37:31,070

uh Duke through the process of getting

2457

03:37:48,490 --> 03:37:33,779

ingressed or fully um integrated into

2458

03:37:54,790 --> 03:37:51,590

heel to your left

2459

03:38:01,250 --> 03:37:54,800

right to your message

2460

03:38:08,570 --> 03:38:05,510

okay and then step up go to the left the

2461

03:38:13,570 --> 03:38:08,580

right heel to your left side

2462

03:38:13,580 --> 03:38:19,969

all right sure

2463

03:38:19,979 --> 03:38:24,670

great work guys

2464

03:38:42,250 --> 03:38:27,650

Duke all right

2465

03:38:46,250 --> 03:38:44,690

that's correct koichi you'll be

2466

03:38:47,870 --> 03:38:46,260

attaching the free hook of that

2467

03:38:50,150 --> 03:38:47,880

adjustable that's on the mounting

2468

03:38:54,930 --> 03:38:50,160

bracket already to the d-ring on the

2469

03:38:54,940 --> 03:39:03,229

[Applause]

2470

03:39:03,239 --> 03:39:29,500

Thomas

2471

03:39:29,510 --> 03:39:46,729

[Applause]

2472

03:40:43,300 --> 03:40:11,929

foreign

2473

03:40:43,310 --> 03:40:51,830

[Music]

2474

03:40:57,769 --> 03:40:55,130

copy koichi all right if that looks like

2475

03:40:59,929 --> 03:40:57,779

it's tidy enough to not get in Duke's

2476

03:41:02,330 --> 03:40:59,939

way we're happy with that config and you

2477

03:41:04,670 --> 03:41:02,340

can pass up the upper triangle

2478

03:41:06,110 --> 03:41:04,680

um if needed you can also use those wire

2479

03:41:07,429 --> 03:41:06,120

ties that are already installed on the

2480

03:41:10,070 --> 03:41:07,439

cables to kind of tend it to the

2481

03:41:13,250 --> 03:41:10,080

mounting bracket

2482

03:41:16,090 --> 03:41:13,260

okay what do you think I think uh sorry

2483

03:41:23,889 --> 03:41:16,100

I can't really see it okay

2484

03:42:04,610 --> 03:41:26,630

and then I'll be with you

2485

03:42:14,389 --> 03:42:08,750

okay uh I'm coming from your right

2486

03:42:22,969 --> 03:42:17,330

let me know when you can grab any part

2487

03:42:33,710 --> 03:42:27,769

okay

2488

03:42:39,050 --> 03:42:36,469

you have to rotate it

2489

03:42:41,090 --> 03:42:39,060

good words koichi we see you looking

2490

03:42:42,710 --> 03:42:41,100

good just a reminder you don't need to

2491

03:42:55,790 --> 03:42:42,720

rep swap for this one we've got two rest

2492

03:43:01,250 --> 03:42:58,490

so right now uh koichiwakada you see in

2493

03:43:04,429 --> 03:43:01,260

the soup with red stripes he just handed

2494

03:43:07,130 --> 03:43:04,439

off the uh upper triangle too

2495

03:43:09,650 --> 03:43:07,140

on Twitter

2496

03:43:11,630 --> 03:43:09,660

Duke if it's easier you can lean back to

2497

03:43:16,570 --> 03:43:11,640

do that rolling motion or you can also

2498

03:43:26,030 --> 03:43:20,269

yeah let me get uh could you stay there

2499

03:43:26,040 --> 03:43:31,849

um

2500

03:43:36,830 --> 03:43:33,710

yeah so Duke has control of that over

2501
03:43:39,170 --> 03:43:36,840
upper triangle Luigi just guiding her as

2502
03:43:41,750 --> 03:43:39,180
she needs to rotate into position that's

2503
03:43:53,990 --> 03:43:41,760
appropriate for installing it on the

2504
03:43:54,000 --> 03:44:22,490
foreign

2505
03:44:22,500 --> 03:44:25,750
[Music]

2506
03:44:29,450 --> 03:44:27,889
uh for both of you actually right now

2507
03:44:31,130 --> 03:44:29,460
just keep an eye on those cables and

2508
03:44:33,050 --> 03:44:31,140
make sure that they don't get in the way

2509
03:44:36,349 --> 03:44:33,060
or get snagged as duke is trying to

2510
03:44:40,670 --> 03:44:36,359
install the upper triangle

2511
03:44:42,650 --> 03:44:40,680
okay I'll keep an eye on it and then

2512
03:44:44,990 --> 03:44:42,660
send it here

2513
03:44:47,630 --> 03:44:45,000

next steps for you after that koichi

2514

03:44:51,550 --> 03:44:47,640

would be to move the silver PGT from the

2515

03:45:01,370 --> 03:44:55,070

and then you'd be doing a socket swap on

2516

03:45:01,380 --> 03:45:06,469

uh thanks for the uh extender

2517

03:45:11,809 --> 03:45:09,710

okay copy this over PGT is moved and

2518

03:45:14,030 --> 03:45:11,819

making sure that you have the I don't

2519

03:45:19,910 --> 03:45:14,040

know yet oh copy not yet all right so

2520

03:45:19,920 --> 03:45:23,030

perfect gotcha

2521

03:45:23,040 --> 03:46:04,130

foreign

2522

03:46:04,140 --> 03:46:07,790

three

2523

03:46:11,870 --> 03:46:10,370

nice work Duke if you need to lean back

2524

03:46:13,130 --> 03:46:11,880

at all to get enough clearance for that

2525

03:46:16,969 --> 03:46:13,140

maneuver I know you're working in a

2526

03:46:26,269 --> 03:46:19,510

all right

2527

03:46:31,070 --> 03:46:28,250

and Gucci for that PCT just a reminder

2528

03:46:32,570 --> 03:46:31,080

to move the bag rat with the PGT you'll

2529

03:46:34,910 --> 03:46:32,580

be using that rat for the withax

2530

03:46:37,020 --> 03:46:34,920

handrail

2531

03:46:43,370 --> 03:46:37,030

extender

2532

03:46:47,330 --> 03:46:45,950

nice part okay now the silver PGT is

2533

03:46:49,729 --> 03:46:47,340

attached

2534

03:46:53,690 --> 03:46:49,739

are you in kuichi you'll be doing a

2535

03:46:55,490 --> 03:46:53,700

socket swap on your red PGT 12 to the

2536

03:47:01,010 --> 03:46:55,500

six inch wobble that's in your trash bag

2537

03:47:05,870 --> 03:47:04,070

they won and Duke looks like you're in a

2538

03:47:07,790 --> 03:47:05,880

big mistake you'll make sure that that

2539

03:47:11,510 --> 03:47:07,800

arrow is pointing up

2540

03:47:13,849 --> 03:47:11,520

and then install the center pad canister

2541

03:47:15,349 --> 03:47:13,859

with the left side first then press in

2542

03:47:19,670 --> 03:47:15,359

on the right side to engage the soft

2543

03:47:19,680 --> 03:47:30,650

okay

2544

03:47:34,969 --> 03:47:33,530

copy great work I'll have PGT settings

2545

03:47:52,849 --> 03:47:34,979

for you next let me know when you're

2546

03:47:57,170 --> 03:47:55,250

so with a little bit of finagling and

2547

03:47:59,450 --> 03:47:57,180

getting the upper triangle into the

2548

03:48:01,610 --> 03:47:59,460

right rotation Duke has successfully

2549

03:48:02,929 --> 03:48:01,620

soft docked it to the upper part of the

2550

03:48:06,290 --> 03:48:02,939

mass canister

2551

03:48:11,210 --> 03:48:06,300

uh that's the point where the upper

2552

03:48:16,429 --> 03:48:14,150

so the next steps will be to use that uh

2553

03:48:18,710 --> 03:48:16,439

hand to drill the cordless power drill

2554

03:48:31,610 --> 03:48:18,720

to secure it in place with a few bolts

2555

03:48:40,370 --> 03:48:35,030

you'll be driving M5 six seven and eight

2556

03:48:40,380 --> 03:49:23,590

too crazy

2557

03:49:31,490 --> 03:49:28,870

7 16 16 trouble is on my red capacity

2558

03:49:35,630 --> 03:49:31,500

coffee installed with a good pull test

2559

03:49:35,640 --> 03:49:41,929

through

2560

03:49:48,650 --> 03:49:46,429

copy two turns on m567 and eight you'll

2561

03:49:51,229 --> 03:49:48,660

now be going to torque on each of these

2562

03:49:59,450 --> 03:49:51,239

in any order an additional three to

2563

03:50:04,010 --> 03:50:01,550

koichi were a little down on the

2564

03:50:07,490 --> 03:50:04,020

timeline still today now is when we had

2565

03:50:11,090 --> 03:50:07,500

planned to install the mut with GoPro uh

2566

03:50:12,590 --> 03:50:11,100

we'll leave it up to you but if might be

2567

03:50:16,269 --> 03:50:12,600

the kind of thing that you would want to

2568

03:50:16,279 --> 03:50:22,269

what do you think Duke uh

2569

03:50:28,190 --> 03:50:25,910

3.6 uh on the torque

2570

03:50:31,849 --> 03:50:28,200

copy additional five turns off from five

2571

03:50:39,130 --> 03:50:33,889

actually I've got three boats left here

2572

03:50:39,140 --> 03:50:45,309

okay uh if I have a few minutes

2573

03:50:53,450 --> 03:50:48,590

that I can do

2574

03:51:21,370 --> 03:50:57,590

four turns green light 3.8 on the torque

2575

03:51:28,070 --> 03:51:24,710

3.9 on a torque M6

2576

03:51:33,050 --> 03:51:28,080

probably four and a half 3.9 green light

2577

03:51:37,729 --> 03:51:35,030

and koichi for you we do think you have

2578

03:51:39,769 --> 03:51:37,739

time totally up to you no pressure you'd

2579

03:51:42,290 --> 03:51:39,779

be for the plan installing that end

2580

03:51:57,650 --> 03:51:42,300

effector on handrail two two one four

2581

03:52:06,950 --> 03:52:03,650

s green light 3.7 torque M7

2582

03:52:12,170 --> 03:52:06,960

copy four additional turns 3.7 green

2583

03:52:17,090 --> 03:52:15,110

okay Duke those are good bolts all four

2584

03:52:19,910 --> 03:52:17,100

of them you can release the mounting

2585

03:52:22,250 --> 03:52:19,920

bracket Rhett and next you'll check that

2586

03:52:32,450 --> 03:52:22,260

the center pad Moi and fit pins are

2587

03:52:37,510 --> 03:52:34,309

copy that's great you can rotate the

2588

03:52:40,630 --> 03:52:37,520

upper triangle down for later access

2589

03:52:43,190 --> 03:52:40,640

after you have the rep released

2590

03:52:55,910 --> 03:52:43,200

and then from both of you we'll take a

2591

03:52:55,920 --> 03:53:02,389

out the same time

2592

03:53:02,399 --> 03:53:07,910

copy you both

2593

03:53:14,050 --> 03:53:10,490

with that the upper triangle has been

2594

03:53:15,710 --> 03:53:14,060

installed onto the 1A Mass canister

2595

03:53:19,190 --> 03:53:15,720

helping out

2596

03:53:23,110 --> 03:53:19,200

and adjusting the uh apfr

2597

03:53:27,050 --> 03:53:25,429

okay copy yeah that's what we're waiting

2598

03:53:38,990 --> 03:53:27,060

on is just that uh mounting bracket

2599

03:53:43,070 --> 03:53:41,030

I think I'll get that right after I get

2600

03:53:44,090 --> 03:53:43,080

maybe an HSR rolled over or Once I pass

2601

03:53:45,889 --> 03:53:44,100

out

2602

03:53:47,510 --> 03:53:45,899

you got it it's on the far right Edge

2603

03:53:50,690 --> 03:53:47,520

yeah we're happy with that plan Duke

2604

03:53:52,790 --> 03:53:50,700

with that you can egress the apfr you'll

2605

03:53:54,590 --> 03:53:52,800

be also socket swapping to the two inch

2606

03:53:56,510 --> 03:53:54,600

rigid that's in your trash bag with a

2607

03:54:03,170 --> 03:53:56,520

good pull test and then adjusting the

2608

03:54:07,910 --> 03:54:05,269

so the upper triangle is installed

2609

03:54:10,250 --> 03:54:07,920

you'll hear the periodic uh glove and

2610

03:54:11,809 --> 03:54:10,260

hat checks with the glove just to make

2611

03:54:13,309 --> 03:54:11,819

sure there are no Nicks or scrapes and

2612

03:54:15,590 --> 03:54:13,319

make sure they're in good quality to

2613

03:54:17,090 --> 03:54:15,600

continue working on the spacewalk and

2614

03:54:19,790 --> 03:54:17,100

then the half is the helmet absorption

2615

03:54:22,130 --> 03:54:19,800

pad just a quick field test to see if

2616

03:54:23,689 --> 03:54:22,140

there's any liquid or water everything

2617

03:54:25,849 --> 03:54:23,699

looks good so we'll hear those checks

2618

03:54:27,889 --> 03:54:25,859

periodically that rent is a retractable

2619

03:54:30,710 --> 03:54:27,899

tether that's the one that was anchoring

2620

03:54:33,229 --> 03:54:30,720

the um upper triangle to the strut bag

2621

03:54:34,969 --> 03:54:33,239

so uh Duke has to release that and then

2622

03:54:37,250 --> 03:54:34,979

they can move on to the next task she's

2623

03:54:43,969 --> 03:54:37,260

going to be exiting the foot restraint

2624

03:56:04,610 --> 03:55:36,290

foreign

2625

03:56:09,889 --> 03:56:07,610

all right so Duke is

2626
03:56:12,050 --> 03:56:09,899
egressing the apfr and then we'll have

2627
03:56:16,130 --> 03:56:12,060
you work together on the apfr and with x

2628
03:56:16,140 --> 03:56:25,309
ures

2629
03:56:25,319 --> 03:56:28,550
okay

2630
03:56:34,729 --> 03:56:31,910
we copy that too and koichi once you get

2631
03:56:37,130 --> 03:56:34,739
over there you can uh help her if that

2632
03:56:39,050 --> 03:56:37,140
is useful so it looks like you need to

2633
03:56:40,670 --> 03:56:39,060
just rotate your heels a little further

2634
03:56:48,610 --> 03:56:40,680
in I know that's tricky with just an

2635
03:56:48,620 --> 03:56:55,100
okay thank you

2636
03:56:55,110 --> 03:56:58,790
[Applause]

2637
03:56:58,800 --> 03:57:06,710
I see the attack

2638
03:57:13,670 --> 03:57:10,330

the locals here

2639

03:57:18,010 --> 03:57:13,680

in until maybe give it a tip

2640

03:57:18,020 --> 03:57:22,550

okay right here

2641

03:57:29,090 --> 03:57:26,030

so right now koji wakada is helping uh

2642

03:57:31,250 --> 03:57:29,100

Nicole Mann Colson Duke to egress or get

2643

03:57:33,349 --> 03:57:31,260

out of the foot restraint

2644

03:57:35,510 --> 03:57:33,359

um that foot restraint was configured

2645

03:57:38,809 --> 03:57:35,520

such that it gave her just the right

2646

03:57:40,429 --> 03:57:38,819

angle to um install that upper triangle

2647

03:57:42,170 --> 03:57:40,439

it was the right angle for her to use

2648

03:57:44,330 --> 03:57:42,180

that cordless power drilled the PGT

2649

03:57:46,490 --> 03:57:44,340

pistol grip tool and then drive close

2650

03:57:49,070 --> 03:57:46,500

bolts uh she needs to get out they're

2651
03:57:50,870 --> 03:57:49,080
going to reconfigure it uh angle it a

2652
03:57:53,450 --> 03:57:50,880
different way so now and then she'll get

2653
03:57:56,150 --> 03:57:53,460
back in it so she'll be able to access

2654
03:57:57,889 --> 03:57:56,160
the next set of bolts uh for when they

2655
03:58:00,010 --> 03:57:57,899
install that next component of the

2656
03:58:02,330 --> 03:58:00,020
mounting platform which is the right

2657
03:58:05,030 --> 03:58:02,340
so it'll work through that methodically

2658
03:58:07,429 --> 03:58:05,040
getting her out re-angling it back in

2659
03:58:09,229 --> 03:58:07,439
and then they'll get the new component

2660
03:58:12,530 --> 03:58:09,239
of the mounting bracket from the strut

2661
03:58:18,250 --> 03:58:12,540
bag uh hand it off and then bolt that uh

2662
03:58:20,470 --> 03:58:20,210
all right

2663
03:58:25,389 --> 03:58:20,480

thank you

2664

03:58:47,290 --> 03:58:27,889

right off can we see that for the

2665

03:58:51,469 --> 03:58:49,790

so we're in another Handover period

2666

03:58:54,290 --> 03:58:51,479

again we're receiving video and audio

2667

03:58:56,389 --> 03:58:54,300

from the geosynchronous uh tdrs

2668

03:58:59,150 --> 03:58:56,399

satellites tracking and data relay

2669

03:59:00,889 --> 03:58:59,160

satellites um another intermittent Gap

2670

03:59:04,610 --> 03:59:00,899

will be regaining video and audio here

2671

03:59:06,590 --> 03:59:04,620

shortly as a quick recap the two have

2672

03:59:09,530 --> 03:59:06,600

completed the installation of the upper

2673

03:59:12,610 --> 03:59:09,540

triangle on the 1A power Channel there

2674

03:59:16,490 --> 03:59:12,620

are several components that make up the

2675

03:59:18,830 --> 03:59:16,500

mounting bracket so that's done and

2676
03:59:21,710 --> 03:59:18,840
they're currently trying to reposition

2677
03:59:25,309 --> 03:59:21,720
the foot restraint to get a new angle

2678
03:59:27,469 --> 03:59:25,319
and allow Nicole Mann coal sign Duke to

2679
03:59:29,929 --> 03:59:27,479
access the next part of the installation

2680
03:59:37,570 --> 03:59:29,939
which is the bolts that will attach the

2681
03:59:41,090 --> 03:59:39,710
Houston's back with you after a quick

2682
03:59:43,070 --> 03:59:41,100
Handover

2683
03:59:45,469 --> 03:59:43,080
and koichi

2684
03:59:48,290 --> 03:59:45,479
that sounds like a good plan we've got

2685
03:59:50,450 --> 03:59:48,300
you adjusting the apfr but if you want

2686
03:59:56,210 --> 03:59:50,460
to coordinate who does apfr who does

2687
04:00:10,010 --> 03:59:58,790
right I'm doing the office extender and

2688
04:00:14,689 --> 04:00:12,349

update for you both right now we're

2689

04:00:17,510 --> 04:00:14,699

looking at about 30 minutes down on the

2690

04:00:21,110 --> 04:00:17,520

timeline our limiting consumable is

2691

04:00:23,990 --> 04:00:21,120

still ev1 medox but moved up to about 6

2692

04:00:27,110 --> 04:00:24,000

hours 50 minutes and we'd love your

2693

04:00:28,130 --> 04:00:27,120

input on just how you're doing and how

2694

04:00:29,510 --> 04:00:28,140

do you feel about that big picture

2695

04:00:41,630 --> 04:00:29,520

update

2696

04:00:51,410 --> 04:00:44,090

great work you guys are doing awesome so

2697

04:00:51,420 --> 04:00:56,750

[Applause]

2698

04:00:59,510 --> 04:00:58,370

a good read from the crew you heard

2699

04:01:01,250 --> 04:00:59,520

they're a little bit behind on the

2700

04:01:04,429 --> 04:01:01,260

timeline but still making good progress

2701
04:01:06,229 --> 04:01:04,439
to get this mounting bracket installed

2702
04:01:08,630 --> 04:01:06,239
both of them are taking two different

2703
04:01:11,889 --> 04:01:08,640
parts of the foot restraint right now to

2704
04:01:14,570 --> 04:01:11,899
configure it for that next setting

2705
04:01:16,910 --> 04:01:14,580
studying your effects adjusted to an

2706
04:01:19,490 --> 04:01:16,920
extension of one that's perfect

2707
04:01:22,010 --> 04:01:19,500
and I'll have apfr settings

2708
04:01:26,570 --> 04:01:22,020
um you're ready it's going to be a roll

2709
04:01:30,349 --> 04:01:28,550
go to the right okay

2710
04:01:32,389 --> 04:01:30,359
correct yeah we'll be adjusting both the

2711
04:01:47,929 --> 04:01:32,399
roll and the pitch going to Papa Papa

2712
04:01:47,939 --> 04:02:15,229
so that's a goal

2713
04:02:15,239 --> 04:02:20,809

s

2714

04:02:20,819 --> 04:02:33,889

back

2715

04:02:39,889 --> 04:02:36,370

here

2716

04:02:44,050 --> 04:02:43,070

golden Charlie and I'm gonna change a

2717

04:02:44,060 --> 04:02:49,090

but I have to use the tool

2718

04:03:10,790 --> 04:02:51,670

you

2719

04:03:10,800 --> 04:03:46,910

I'll be a good pull test

2720

04:03:46,920 --> 04:04:05,490

foreign

2721

04:04:05,500 --> 04:04:16,800

[Music]

2722

04:04:16,810 --> 04:04:51,349

[Applause]

2723

04:04:54,950 --> 04:04:53,450

great teamwork guys and just a reminder

2724

04:04:56,510 --> 04:04:54,960

to watch out for each other's hands

2725

04:05:01,990 --> 04:04:56,520

there are a lot of a lot of pinch points

2726

04:05:17,030 --> 04:05:05,090

okay I was able to unlock it

2727

04:05:17,040 --> 04:05:37,370

I'm gonna take the

2728

04:05:37,380 --> 04:06:36,070

foreign

2729

04:06:36,080 --> 04:07:06,710

okay now it's completely unlocked

2730

04:07:10,729 --> 04:07:08,510

stop moving

2731

04:07:24,469 --> 04:07:10,739

it's in the unlocked position

2732

04:07:24,479 --> 04:07:32,769

you can also try using the booster

2733

04:07:45,910 --> 04:07:35,929

you can try using the boot plate to get

2734

04:07:45,920 --> 04:07:50,110

just doesn't move

2735

04:07:55,189 --> 04:07:53,210

back up so that we can use it okay yeah

2736

04:07:58,550 --> 04:07:55,199

let's do that because we roll it back

2737

04:08:12,160 --> 04:08:01,010

upset position

2738

04:08:12,170 --> 04:08:24,229

[Applause]

2739

04:08:24,239 --> 04:08:31,729

I have yelled a little bit

2740

04:08:31,739 --> 04:08:40,630

everybody

2741

04:08:40,640 --> 04:08:57,889

on your face

2742

04:08:57,899 --> 04:09:08,330

okay

2743

04:09:08,340 --> 04:09:13,929

thank you

2744

04:09:31,929 --> 04:09:17,270

I'm gonna bring the ingredients down

2745

04:09:37,610 --> 04:09:35,269

the pitch knob is in the complete

2746

04:09:40,070 --> 04:09:37,620

unlocked position and it's

2747

04:09:42,290 --> 04:09:40,080

um this is a craft configuration to move

2748

04:09:44,150 --> 04:09:42,300

the page right it shouldn't be popped

2749

04:09:48,189 --> 04:09:44,160

out I mean it should just be all the way

2750

04:09:48,199 --> 04:09:52,729

looks like it's up

2751
04:10:04,010 --> 04:09:55,670
yeah that's what we expect we know this

2752
04:10:28,880 --> 04:10:06,309
yeah

2753
04:10:28,890 --> 04:10:41,530
[Music]

2754
04:10:41,540 --> 04:10:47,929
do you need to roll 90 degrees

2755
04:10:47,939 --> 04:10:53,150
go

2756
04:10:58,790 --> 04:10:56,750
like if you can grab onto that heel

2757
04:11:00,590 --> 04:10:58,800
then we'll go down to some smooth motion

2758
04:11:00,590 --> 04:11:03,889
down

2759
04:11:03,899 --> 04:11:08,750
shall we just move

2760
04:11:17,110 --> 04:11:10,969
it's

2761
04:11:25,770 --> 04:11:19,429
like fish on the front

2762
04:11:31,010 --> 04:11:28,210
[Music]

2763
04:11:32,389 --> 04:11:31,020

as you need in order to get the boot

2764

04:11:34,790 --> 04:11:32,399

plate in a better position for leverage

2765

04:11:38,570 --> 04:11:34,800

and just a reminder to avoid using the

2766

04:11:38,580 --> 04:11:46,610

foreign

2767

04:11:46,620 --> 04:12:00,340

[Applause]

2768

04:12:00,350 --> 04:12:07,570

[Music]

2769

04:12:07,580 --> 04:12:11,330

Okay so

2770

04:12:11,340 --> 04:12:17,689

hey

2771

04:12:22,729 --> 04:12:20,750

you can pull I got nothing to really

2772

04:12:24,110 --> 04:12:22,739

react against here okay then let me try

2773

04:12:26,330 --> 04:12:24,120

that

2774

04:12:27,710 --> 04:12:26,340

but if you can get your hand on it yeah

2775

04:12:29,330 --> 04:12:27,720

Duke you can definitely pull on the

2776
04:12:39,340 --> 04:12:29,340
Ingress Aid if that helps get some more

2777
04:12:51,790 --> 04:12:40,790
[Music]

2778
04:12:51,800 --> 04:13:07,309
yes all the way

2779
04:13:11,689 --> 04:13:09,229
great work guys and as long as you can

2780
04:13:18,189 --> 04:13:11,699
get it to at least here we can give you

2781
04:13:18,199 --> 04:13:25,150
yeah I think maybe

2782
04:13:30,530 --> 04:13:27,830
a small amount more

2783
04:13:45,889 --> 04:13:30,540
if you can get it

2784
04:13:45,899 --> 04:14:09,790
foreign

2785
04:14:09,800 --> 04:14:16,250
[Applause]

2786
04:14:46,490 --> 04:14:18,830
to hold on to the uh

2787
04:14:46,500 --> 04:14:49,929
okay

2788
04:14:56,610 --> 04:14:52,790

talk about

2789

04:14:56,620 --> 04:15:02,110

[Music]

2790

04:15:12,630 --> 04:15:04,969

all right and just to make sure you're

2791

04:15:31,510 --> 04:15:21,340

[Music]

2792

04:15:31,520 --> 04:15:47,889

that's it

2793

04:15:56,229 --> 04:15:49,729

okay

2794

04:15:56,239 --> 04:16:00,969

thank you

2795

04:16:00,979 --> 04:16:04,750

uh

2796

04:16:04,760 --> 04:16:18,950

you could check 12 on the yachts

2797

04:16:18,960 --> 04:16:27,210

uh

2798

04:16:27,220 --> 04:16:30,650

[Music]

2799

04:16:35,870 --> 04:16:33,070

copy and concur really good work guys

2800

04:16:38,030 --> 04:16:35,880

next steps for you will be to get the

2801
04:16:44,150 --> 04:16:38,040
right mid Struts from straps 12 and 13

2802
04:16:44,160 --> 04:16:47,269
stop it

2803
04:16:55,189 --> 04:16:49,610
and we'll take a glove check from both

2804
04:16:55,199 --> 04:17:05,389
okay

2805
04:17:05,399 --> 04:17:22,490
Gucci

2806
04:17:27,650 --> 04:17:25,309
stop you duke

2807
04:17:34,429 --> 04:17:27,660
hey Billy see uh

2808
04:17:40,070 --> 04:17:37,910
copyright mid is released

2809
04:17:42,349 --> 04:17:40,080
once Duke has ingressed you'll be

2810
04:17:44,929 --> 04:17:42,359
passing that off to her and then getting

2811
04:17:47,469 --> 04:17:44,939
the right lower strut from strap seven

2812
04:17:54,590 --> 04:17:52,370
copy copy that so a quick recap it did

2813
04:17:57,110 --> 04:17:54,600

take a little bit of work but the duo

2814

04:17:59,630 --> 04:17:57,120

did get the portable foot restraint to

2815

04:18:01,870 --> 04:17:59,640

the angle it needs to be to install that

2816

04:18:04,370 --> 04:18:01,880

next section the right strut so

2817

04:18:06,530 --> 04:18:04,380

koichiwakata is going to get that and

2818

04:18:08,990 --> 04:18:06,540

hand it off to Nicole Mann once she gets

2819

04:18:11,030 --> 04:18:09,000

uh back into the foot restraint and at

2820

04:18:13,370 --> 04:18:11,040

the right angle to access the bolts that

2821

04:18:18,590 --> 04:18:13,380

she'll need to drive to install that

2822

04:18:18,600 --> 04:18:31,809

foreign

2823

04:18:31,819 --> 04:18:47,269

attached to the upper triangle still

2824

04:18:47,279 --> 04:19:25,130

foreign

2825

04:19:25,140 --> 04:19:52,910

please stop

2826
04:19:52,920 --> 04:20:20,890
foreign

2827
04:20:53,389 --> 04:20:23,030
[Applause]

2828
04:20:59,889 --> 04:20:56,030
yeah it looks like that

2829
04:21:05,650 --> 04:20:59,899
that is almost in yeah yeah

2830
04:21:10,870 --> 04:21:08,150
a little bit to your right on the right

2831
04:21:16,470 --> 04:21:12,650
okay

2832
04:21:35,689 --> 04:21:28,410
[Applause]

2833
04:21:35,699 --> 04:21:59,330
foreign

2834
04:22:07,790 --> 04:22:01,610
okay a little bit to your left

2835
04:22:07,800 --> 04:22:16,269
okay that's good yeah okay

2836
04:22:25,429 --> 04:22:19,370
now you can slide

2837
04:22:43,389 --> 04:22:26,290
left

2838
04:22:43,399 --> 04:22:47,570

you down feel down

2839

04:22:47,580 --> 04:22:55,309

kill to your right a little bit

2840

04:22:55,319 --> 04:23:03,530

heel to your right a little bit okay

2841

04:23:03,540 --> 04:23:10,210

foreign

2842

04:23:29,190 --> 04:23:11,360

[Music]

2843

04:23:29,200 --> 04:23:33,830

[Applause]

2844

04:23:38,750 --> 04:23:36,650

right at your left heel more to your

2845

04:23:40,700 --> 04:23:38,760

left

2846

04:23:45,349 --> 04:23:40,710

if you're in do you feel it

2847

04:23:49,729 --> 04:23:47,330

so right out because I need it for my

2848

04:23:51,889 --> 04:23:49,739

research okay copy that

2849

04:23:53,830 --> 04:23:51,899

all right then I will

2850

04:23:56,630 --> 04:23:53,840

come back in the

2851
04:23:58,610 --> 04:23:56,640
Big Shot okay I have the mounting

2852
04:24:05,689 --> 04:23:58,620
bracket red

2853
04:24:05,699 --> 04:24:09,530
questions

2854
04:24:12,830 --> 04:24:11,689
it's released

2855
04:24:14,330 --> 04:24:12,840
okay

2856
04:24:16,670 --> 04:24:14,340
and then

2857
04:24:42,229 --> 04:24:16,680
let me go back to

2858
04:24:42,239 --> 04:24:58,310
foreign

2859
04:24:58,320 --> 04:25:11,510
[Music]

2860
04:25:11,520 --> 04:25:37,290
foreign

2861
04:25:37,300 --> 04:25:54,710
[Applause]

2862
04:26:27,690 --> 04:26:17,929
foreign

2863
04:27:12,229 --> 04:26:33,790

[Music]

2864

04:27:12,239 --> 04:27:15,649

okay okay

2865

04:27:15,659 --> 04:27:30,229

all right

2866

04:27:34,550 --> 04:27:31,429

okay

2867

04:27:41,269 --> 04:27:34,560

that's correct and you'll be passing the

2868

04:27:46,070 --> 04:27:43,790

so you know that's from the strap eight

2869

04:27:51,830 --> 04:27:46,080

and seven correct

2870

04:27:51,840 --> 04:28:00,590

okay copy

2871

04:28:04,910 --> 04:28:02,510

and then Duke you'll want to ret to the

2872

04:28:09,410 --> 04:28:04,920

handrail stanchion that's nearest the

2873

04:28:09,420 --> 04:28:52,790

everybody

2874

04:28:52,800 --> 04:29:16,610

foreign

2875

04:29:16,620 --> 04:29:29,630

control

2876

04:29:57,130 --> 04:29:31,250

okay

2877

04:29:57,140 --> 04:30:09,889

that's good

2878

04:30:09,899 --> 04:30:12,130

okay

2879

04:30:12,140 --> 04:30:17,330

I'm gonna translate to the uh

2880

04:30:21,050 --> 04:30:19,070

yeah Luigi that's right you'll be

2881

04:30:23,210 --> 04:30:21,060

translating to the right sub spherical

2882

04:30:25,490 --> 04:30:23,220

bearing on the mass canister right side

2883

04:30:27,229 --> 04:30:25,500

and just report to us the spherical

2884

04:30:29,330 --> 04:30:27,239

bearing alignment

2885

04:30:36,469 --> 04:30:29,340

then you'll be grabbing the silver PGT

2886

04:30:40,130 --> 04:30:38,389

once Ouija gets down there you'll be

2887

04:30:41,809 --> 04:30:40,140

helping out with the lower strut

2888

04:31:10,809 --> 04:30:41,819

alignment and you'll work together to

2889

04:31:10,819 --> 04:31:44,929

look good

2890

04:31:44,939 --> 04:32:05,889

bye

2891

04:32:11,149 --> 04:32:08,330

for both of you just a big picture

2892

04:32:13,429 --> 04:32:11,159

update here right now we're looking at

2893

04:32:15,410 --> 04:32:13,439

probably between 45 minutes and an hour

2894

04:32:18,170 --> 04:32:15,420

down on the timeline just thanks to that

2895

04:32:20,269 --> 04:32:18,180

sticky pitch on the apfr

2896

04:32:22,910 --> 04:32:20,279

um so right now we are thinking that the

2897

04:32:25,429 --> 04:32:22,920

get a hedge the S6 bdcu jumper and one

2898

04:32:27,830 --> 04:32:25,439

Bravo cable routing are going to be

2899

04:32:29,990 --> 04:32:27,840

saved for a future Eva but we're still

2900

04:32:31,130 --> 04:32:30,000

in good shape just keep doing what

2901
04:32:32,929 --> 04:32:31,140
you're doing you guys are doing great

2902
04:33:06,609 --> 04:32:32,939
work

2903
04:33:06,619 --> 04:33:11,929
clockwise one

2904
04:33:11,939 --> 04:33:22,010
slots

2905
04:33:27,890 --> 04:33:24,830
so right now right now koichiwakata and

2906
04:33:31,189 --> 04:33:27,900
uh Nicole Mann working at the two ends

2907
04:33:33,230 --> 04:33:31,199
of the lower strut this uh attaches the

2908
04:33:34,789 --> 04:33:33,240
top of the mounting bracket which is

2909
04:33:38,510 --> 04:33:34,799
part of that upper triangle that they

2910
04:33:40,910 --> 04:33:38,520
built earlier and the strut uh anchors

2911
04:33:42,529 --> 04:33:40,920
it to the lower part of the Mast

2912
04:33:45,230 --> 04:33:42,539
canister and this is on the right side

2913
04:33:46,970 --> 04:33:45,240

so koichi wakata because he's not in the

2914

04:33:49,070 --> 04:33:46,980

foot restraint we'll have access to that

2915

04:33:51,109 --> 04:33:49,080

bottom part and he'll use his pistol

2916

04:33:53,869 --> 04:33:51,119

grip tool to Anchor it to the bottom

2917

04:33:56,810 --> 04:33:53,879

part of the Mask canister uh while uh

2918

04:33:58,810 --> 04:33:56,820

Nicole Mann Duke um with who is still in

2919

04:34:01,429 --> 04:33:58,820

the portable foot restraint has access

2920

04:34:03,349 --> 04:34:01,439

to the top portion of this lower strut

2921

04:34:05,510 --> 04:34:03,359

which is being attached to the front end

2922

04:34:06,970 --> 04:34:05,520

of that mounting bracket

2923

04:34:10,789 --> 04:34:06,980

okay

2924

04:34:14,529 --> 04:34:10,799

tracking Alpha One clockwise one

2925

04:34:17,330 --> 04:34:14,539

okay now with Duke's Health you'll be

2926

04:34:19,730 --> 04:34:17,340

aligning the lower stretch

2927

04:34:29,510 --> 04:34:19,740

and we're just looking to start with

2928

04:34:33,709 --> 04:34:31,490

here and then I'll walk on before it

2929

04:34:37,131 --> 04:34:33,719

turns

2930

04:34:38,990 --> 04:34:37,141

copy that's great and if you get any uh

2931

04:34:41,150 --> 04:34:39,000

hand turns on that bolt just let us know

2932

04:34:43,429 --> 04:34:41,160

and a reminder while you're down there

2933

04:34:45,830 --> 04:34:43,439

to watch your fingers there's a hit

2934

04:34:50,510 --> 04:34:45,840

point there between the lower strut pad

2935

04:34:50,520 --> 04:34:55,670

take up that

2936

04:35:11,330 --> 04:35:00,470

you've done 32 uh we see that

2937

04:35:11,340 --> 04:35:20,240

all right that's good

2938

04:35:20,250 --> 04:35:26,330

[Applause]

2939

04:35:26,340 --> 04:36:03,670

foreign

2940

04:36:03,680 --> 04:36:10,310

okay yeah

2941

04:36:10,320 --> 04:36:15,349

it doesn't align well

2942

04:36:19,570 --> 04:36:17,929

if you could can you

2943

04:36:26,689 --> 04:36:19,580

click hand over here

2944

04:36:30,830 --> 04:36:28,670

we're in a short uh Handover period

2945

04:36:32,390 --> 04:36:30,840

right now so we still have audio from

2946

04:36:34,189 --> 04:36:32,400

the International Space Station we can

2947

04:36:37,189 --> 04:36:34,199

hear the crew but we'll be getting video

2948

04:36:39,830 --> 04:36:37,199

back shortly keep coming down

2949

04:36:41,090 --> 04:36:39,840

we are right

2950

04:36:46,250 --> 04:36:41,100

down

2951

04:36:51,410 --> 04:36:49,010

play this baby okay

2952

04:37:22,810 --> 04:36:51,420

great feel free to hand start that Ouija

2953

04:37:22,820 --> 04:37:26,449

this one up here

2954

04:37:31,189 --> 04:37:28,970

we're back with you after a Handover and

2955

04:37:38,029 --> 04:37:31,199

any turns that you put on that m19 volt

2956

04:37:44,869 --> 04:37:41,869

copy four turns on m19 great work new

2957

04:37:48,650 --> 04:37:44,879

PGT settings for you koichi Bravo 7

2958

04:37:51,289 --> 04:37:48,660

clockwise II and Duke now that m19 has

2959

04:37:55,429 --> 04:37:52,670

good read back

2960

04:37:57,769 --> 04:37:55,439

Duke you can start M20

2961

04:37:59,990 --> 04:37:57,779

that's the right lower strut L6 to the

2962

04:38:02,090 --> 04:38:00,000

mounting bracket check that the pin

2963

04:38:03,709 --> 04:38:02,100

lanyard is free of the clevis and all

2964

04:38:06,289 --> 04:38:03,719

have PGT settings for you when you're

2965

04:38:06,299 --> 04:38:09,170

okay

2966

04:38:09,180 --> 04:38:18,070

yeah

2967

04:38:23,209 --> 04:38:20,990

so stand by until Duke has her end

2968

04:38:25,131 --> 04:38:23,219

started but you will be going to torque

2969

04:38:27,830 --> 04:38:25,141

on this one we're expecting 10 and a

2970

04:38:29,750 --> 04:38:27,840

half to 11 turns once Duke's end is

2971

04:38:32,750 --> 04:38:29,760

starting

2972

04:38:38,090 --> 04:38:32,760

if it is clear I've got one turn I

2973

04:38:44,269 --> 04:38:40,789

your PGT settings do come on Bravo One

2974

04:38:54,609 --> 04:38:44,279

clockwise two and this will be about one

2975

04:39:04,310 --> 04:38:56,990

just one extra we're looking for about

2976

04:39:04,320 --> 04:39:29,330

yeah that's my bad I could help you yeah

2977

04:39:35,029 --> 04:39:32,570

here's a good shot of the two astronauts

2978

04:39:38,150 --> 04:39:35,039

working on both ends of that lower right

2979

04:39:39,948 --> 04:39:38,160

strut so you see Nicole Mann is in the

2980

04:39:41,630 --> 04:39:39,958

foot restraint she's got access to the

2981

04:39:44,990 --> 04:39:41,640

top part of the lower strut that's

2982

04:39:48,050 --> 04:39:45,000

towards the upper triangle uh she's got

2983

04:39:49,788 --> 04:39:48,060

a pistol grip tool to secure that to the

2984

04:39:51,830 --> 04:39:49,798

top portion and then

2985

04:39:53,990 --> 04:39:51,840

um koichiwakata at the bottom portion

2986

04:40:19,990 --> 04:39:54,000

securing the lower strut to the base of

2987

04:40:25,368 --> 04:40:23,390

you can drive m19 to torque expecting

2988

04:40:26,750 --> 04:40:25,378

ten and a half to 11 additional turns

2989

04:40:29,150 --> 04:40:26,760

looking for green light and torque

2990

04:40:29,160 --> 04:40:34,730

m19

2991

04:40:34,740 --> 04:40:51,350

good read back

2992

04:40:56,570 --> 04:40:54,110

and Duke once you've got your PGT stowed

2993

04:41:00,530 --> 04:40:56,580

we can have you start on the one alpha

2994

04:41:00,540 --> 04:41:08,990

come on

2995

04:41:14,208 --> 04:41:11,170

okay yeah

2996

04:41:19,368 --> 04:41:14,218

on m19 I got a green light they talked

2997

04:41:22,368 --> 04:41:19,378

about the 25 29 2000 and

2998

04:41:30,708 --> 04:41:27,410

and The Rock line slash uh I see a

2999

04:41:32,270 --> 04:41:30,718

little bit of a Jack it's almost there

3000

04:41:36,128 --> 04:41:32,280

five

3001

04:41:38,930 --> 04:41:36,138

see I would say that yeah

3002

04:41:40,730 --> 04:41:38,940

Luigi we are expecting to finish this

3003

04:41:44,208 --> 04:41:40,740

off with the torque wrench but we copied

3004

04:41:49,670 --> 04:41:44,218

green light 25.9 fork and was that 10

3005

04:41:49,680 --> 04:41:55,250

39.66

3006

04:41:58,910 --> 04:41:56,690

copy that

3007

04:42:00,410 --> 04:41:58,920

all right with that Gucci you can grab

3008

04:42:02,570 --> 04:42:00,420

the torque wrench from the right lower

3009

04:42:04,730 --> 04:42:02,580

strut and you'll socket swap to the two

3010

04:42:07,910 --> 04:42:04,740

inch rigid from the PGT to the torque

3011

04:42:07,920 --> 04:42:12,230

happy

3012

04:42:16,730 --> 04:42:14,448

Duke for you you'll remove the short

3013

04:42:19,030 --> 04:42:16,740

wire tie securing the one alpha right

3014

04:42:21,948 --> 04:42:19,040

irosa cables to the mounting bracket

3015

04:42:24,050 --> 04:42:21,958

and sew them in your trash bag if they

3016

04:42:25,850 --> 04:42:24,060

were used

3017

04:42:31,730 --> 04:42:25,860

and then you'll release the long Wi-Fi

3018

04:43:16,910 --> 04:42:34,010

just one Twist on the one alpha right

3019

04:43:22,128 --> 04:43:19,730

so from this uh helmet camera view we're

3020

04:43:25,368 --> 04:43:22,138

looking from the vantage point of duke

3021

04:43:28,368 --> 04:43:25,378

or uh astronomical man you can see

3022

04:43:30,610 --> 04:43:28,378

koichiwakata working on the base of the

3023

04:43:33,590 --> 04:43:30,620

lower strut Cole man working on the

3024

04:43:36,350 --> 04:43:33,600

cables of course the strut is really a

3025

04:43:38,810 --> 04:43:36,360

support structure that allows the irosa

3026

04:43:41,150 --> 04:43:38,820

the International Space Station roll out

3027

04:43:43,310 --> 04:43:41,160

solar array to be installed but it does

3028

04:43:44,868 --> 04:43:43,320

need to provide Power ultimately to the

3029

04:43:47,510 --> 04:43:44,878

International Space Station so these

3030

04:43:50,448 --> 04:43:47,520

cables uh will be uh positioned

3031

04:43:52,970 --> 04:43:50,458

accordingly so that when the irosa is

3032

04:43:54,530 --> 04:43:52,980

installed on the mounting bracket that

3033

04:43:56,330 --> 04:43:54,540

uh they'll be able to basically hook it

3034

04:43:59,150 --> 04:43:56,340

up to the International Space Station

3035

04:44:02,330 --> 04:43:59,160

and the power that would be drawn from

3036

04:44:05,208 --> 04:44:02,340

the new solar arrays can be sent to all

3037

04:44:07,250 --> 04:44:05,218

of the appropriate Downstream places uh

3038

04:44:08,990 --> 04:44:07,260

on the International Space Station so

3039

04:44:12,288 --> 04:44:09,000

they're positioning those cables now so

3040

04:44:14,270 --> 04:44:12,298

when they later uh install the irosas

3041

04:44:16,670 --> 04:44:14,280

right now we're looking at uh this

3042

04:44:18,770 --> 04:44:16,680

summer to get the iroses up to the space

3043

04:44:20,990 --> 04:44:18,780

station and installed that they'll be

3044

04:44:23,090 --> 04:44:21,000

able to hook it up 15 turns with this

3045

04:44:26,030 --> 04:44:23,100

torque wrench until you break over two

3046

04:44:32,330 --> 04:44:28,220

complete

3047

04:44:38,390 --> 04:44:35,090

copy Duke that looks really good

3048

04:44:50,090 --> 04:44:38,400

you'll next be driving M20 to torque

3049

04:44:50,100 --> 04:44:54,050

checking

3050

04:44:59,330 --> 04:44:56,570

and I apologize koichi we actually need

3051

04:45:01,430 --> 04:44:59,340

14 to 15 total turns so you only have

3052

04:45:02,990 --> 04:45:01,440

about another turn and a half to go much

3053

04:45:04,910 --> 04:45:03,000

better news

3054

04:45:07,930 --> 04:45:04,920

that's good to know that's good to know

3055

04:45:11,390 --> 04:45:07,940

thank you sorry

3056

04:45:44,690 --> 04:45:11,400

that was a great release thank you

3057

04:45:44,700 --> 04:46:11,590

foreign

3058

04:46:16,070 --> 04:46:14,150

next we'll take a check that the black

3059

04:46:18,410 --> 04:46:16,080

line is parallel to the cylinder and

3060

04:46:20,930 --> 04:46:18,420

flush there's no gap between the strap

3061

04:46:23,350 --> 04:46:20,940

boss and bearing and there's no movement

3062

04:46:29,720 --> 04:46:23,360

with the wheels

3063

04:46:29,730 --> 04:46:42,590

[Music]

3064

04:46:49,250 --> 04:46:46,070

okay so just between the third part and

3065

04:46:51,410 --> 04:46:49,260

the circle bearing copy and koichi just

3066

04:46:54,530 --> 04:46:51,420

to confirm how many additional turns was

3067

04:47:12,530 --> 04:47:01,788

quarter

3068

04:47:17,510 --> 04:47:14,708

I would say uh

3069

04:47:20,150 --> 04:47:17,520

between quarter and a half

3070

04:47:21,590 --> 04:47:20,160

okay come with Gucci we'll be uh

3071

04:47:31,910 --> 04:47:21,600

checking that real quick it's a little

3072

04:47:31,920 --> 04:47:39,128

foreign

3073

04:47:49,270 --> 04:47:41,930

Ty and we'll take that one last wiggle

3074

04:47:55,430 --> 04:47:52,010

that's so awesome

3075

04:47:57,590 --> 04:47:55,440

perfect with that you can socket swap

3076

04:47:59,448 --> 04:47:57,600

to the two inch rigid from your torque

3077

04:48:02,150 --> 04:47:59,458

wrench back to the silver PGT with a

3078

04:48:04,610 --> 04:48:02,160

good pull test and you can relocate the

3079

04:48:06,170 --> 04:48:04,620

torque wrench to the silver PGT you'll

3080

04:48:08,930 --> 04:48:06,180

keep that rep from the strut with the

3081

04:48:08,940 --> 04:48:14,930

it works

3082

04:48:20,208 --> 04:48:17,690

Duke once you have that pit pin

3083

04:48:22,730 --> 04:48:20,218

installed you can go back and drive M20

3084

04:48:24,650 --> 04:48:22,740

to torque we're expecting five to seven

3085

04:48:28,090 --> 04:48:24,660

additional turns looking for black line

3086

04:48:32,448 --> 04:48:30,650

the song

3087

04:49:06,430 --> 04:48:32,458

evidence way

3088

04:49:13,430 --> 04:49:10,610

green light 11.9 on the first

3089

04:49:22,970 --> 04:49:13,440

copy six turns 11.9 on the torque green

3090

04:49:22,980 --> 04:49:26,288

copy juice

3091

04:49:30,650 --> 04:49:28,850

okay copy can we cheat check the lower

3092

04:49:38,868 --> 04:49:30,660

straight mli is covering the strut pad

3093

04:49:47,590 --> 04:49:41,448

okay well let's just cover it's covering

3094

04:49:47,600 --> 04:49:51,650

location on the right side there

3095

04:49:51,660 --> 04:49:54,770

okay before the

3096

04:50:08,810 --> 04:49:57,830

before the prince to the silver PGT

3097

04:50:13,490 --> 04:50:10,788

once you start your PGT you can release

3098

04:50:14,930 --> 04:50:13,500

the rest from the lower stretch and then

3099

04:50:16,850 --> 04:50:14,940

with that grounding fit pin installed

3100

04:50:19,730 --> 04:50:16,860

you can install the mli over the lower

3101
04:50:23,330 --> 04:50:21,350
welcome

3102
04:50:28,250 --> 04:50:23,340
and after that you'll be working on the

3103
04:50:33,288 --> 04:50:30,708
koichi you may also want to tend that

3104
04:50:37,850 --> 04:50:33,298
PGT over to the other side so you can

3105
04:51:36,670 --> 04:51:30,788
okay

3106
04:51:40,970 --> 04:51:39,170
attitude of silver

3107
04:51:46,310 --> 04:51:40,980
and I'm gonna translate to the other

3108
04:51:50,390 --> 04:51:48,410
make sure that the rat has been released

3109
04:51:51,530 --> 04:51:50,400
from the lower stress

3110
04:51:56,628 --> 04:51:51,540
foreign

3111
04:52:02,930 --> 04:51:59,628
for those following along the duo are

3112
04:52:05,750 --> 04:52:02,940
now wrapping up after uh successfully uh

3113
04:52:07,550 --> 04:52:05,760

driving the bolts to install the lower

3114

04:52:09,230 --> 04:52:07,560

right strut

3115

04:52:11,990 --> 04:52:09,240

um so they're just doing some cleanup

3116

04:52:14,330 --> 04:52:12,000

work right now and just making sure the

3117

04:52:16,310 --> 04:52:14,340

multi-layer insulation is covering uh

3118

04:52:18,368 --> 04:52:16,320

the parts that they were working on and

3119

04:52:20,810 --> 04:52:18,378

they're going to now grab the next

3120

04:52:23,208 --> 04:52:20,820

component for installation which is the

3121

04:52:25,010 --> 04:52:23,218

middle strut here's a graphic you can

3122

04:52:26,150 --> 04:52:25,020

see the lower strut on the right of this

3123

04:52:28,850 --> 04:52:26,160

graphic that's the one they just

3124

04:52:31,430 --> 04:52:28,860

installed the mid strut goes really to

3125

04:52:33,350 --> 04:52:31,440

the middle of the mass canister that's

3126
04:52:35,030 --> 04:52:33,360
coming up next getting in place to

3127
04:52:37,730 --> 04:52:35,040
install the side pad on that mass

3128
04:52:45,230 --> 04:52:39,350
okay

3129
04:52:49,010 --> 04:52:47,208
and quiche once you're in place I can

3130
04:52:52,190 --> 04:52:49,020
preemptively give you some PGT settings

3131
04:52:59,150 --> 04:52:54,288
okay

3132
04:53:19,570 --> 04:52:59,160
the uh mixture

3133
04:53:19,580 --> 04:53:27,368
so uh again I can translate on this uh

3134
04:54:49,270 --> 04:53:30,050
to go out to the

3135
04:54:56,150 --> 04:54:51,708
thank you

3136
04:55:01,070 --> 04:54:58,070
we have some squeegee's in a good

3137
04:55:02,868 --> 04:55:01,080
position to receive I think you will

3138
04:55:09,650 --> 04:55:02,878

pass that mid strut with the side pad

3139

04:55:13,788 --> 04:55:11,490

hey

3140

04:55:23,090 --> 04:55:13,798

[Applause]

3141

04:55:23,100 --> 04:55:27,170

running on your right okay

3142

04:55:27,180 --> 04:55:40,550

all right keep coming

3143

04:55:45,170 --> 04:55:42,830

nice work guys

3144

04:55:47,330 --> 04:55:45,180

koichi as you received it just check

3145

04:55:48,890 --> 04:55:47,340

that the arrow is pointing up and you'll

3146

04:55:50,570 --> 04:55:48,900

ultimately be engaging the left side

3147

04:55:53,868 --> 04:55:50,580

first and then pressing in on the right

3148

04:55:57,948 --> 04:55:54,890

up

3149

04:56:01,030 --> 04:55:57,958

and engaging website first

3150

04:56:04,730 --> 04:56:01,040

and then right side is in

3151
04:56:06,890 --> 04:56:04,740
great job when you're ready I'll have

3152
04:56:08,690 --> 04:56:06,900
PGT settings for you and we're coming up

3153
04:56:11,868 --> 04:56:08,700
on a quick Handover in about two minutes

3154
04:56:11,878 --> 04:56:26,510
okay I'm ready to copy the PGG settings

3155
04:56:26,520 --> 04:56:35,990
ah

3156
04:56:42,770 --> 04:56:38,390
and Duke Eye will also have PGT settings

3157
04:56:42,780 --> 04:56:50,510
okay I think I'll start with the um

3158
04:56:55,690 --> 04:56:52,850
copy no problem

3159
04:56:57,890 --> 04:56:55,700
here next steps

3160
04:57:00,708 --> 04:56:57,900
exactly you'll be waiting on him to

3161
04:57:04,788 --> 04:57:00,718
start two turns on m93 M12 but then you

3162
04:57:14,150 --> 04:57:07,550
great copy

3163
04:57:18,890 --> 04:57:16,430

those are good words kuichi you can go

3164

04:57:18,900 --> 04:57:28,670

okay

3165

04:57:52,010 --> 04:57:30,410

two on M9

3166

04:57:52,020 --> 04:58:18,128

foreign

3167

04:58:24,050 --> 04:58:20,990

now in another uh Handover of some of

3168

04:58:26,390 --> 04:58:24,060

the video we're receiving from orbit at

3169

04:58:29,570 --> 04:58:26,400

as a refresher we're currently

3170

04:58:31,810 --> 04:58:29,580

installing the mid strut on the right

3171

04:58:33,890 --> 04:58:31,820

side for this mounting platform

3172

04:58:36,948 --> 04:58:33,900

koichiwakata was working on the mass

3173

04:58:38,750 --> 04:58:36,958

canister side so if you see the side pad

3174

04:58:40,970 --> 04:58:38,760

on the right from this graphic he's

3175

04:58:42,230 --> 04:58:40,980

working on driving the bolts on that

3176

04:58:45,410 --> 04:58:42,240

side

3177

04:58:47,810 --> 04:58:45,420

um Nicole Mann call sign Duke is still

3178

04:58:49,730 --> 04:58:47,820

in the portable foot restraint she's on

3179

04:58:52,788 --> 04:58:49,740

the right side so she'll be soon driving

3180

04:58:55,850 --> 04:58:52,798

the bolts over there to attach the mid

3181

04:59:02,330 --> 04:58:55,860

strut to the mounting platform and go

3182

04:59:02,340 --> 04:59:13,208

if you like me put it back in yeah

3183

04:59:13,218 --> 04:59:24,190

all right

3184

04:59:24,200 --> 04:59:31,910

original orientation

3185

04:59:31,920 --> 04:59:36,590

checking Duke

3186

04:59:36,600 --> 04:59:42,680

okay

3187

04:59:42,690 --> 04:59:51,948

[Music]

3188

04:59:51,958 --> 04:59:55,610

I really don't see that

3189

05:00:09,288 --> 04:59:57,770

in front of you and another lined up

3190

05:00:13,788 --> 05:00:11,628

can you pull it in front of you well I

3191

05:00:18,350 --> 05:00:13,798

guess maybe not because of the feather

3192

05:00:36,650 --> 05:00:20,690

towards you it's your birthday style 90

3193

05:00:43,190 --> 05:00:39,470

hey guys our recommendations

3194

05:00:45,350 --> 05:00:43,200

koichi if you have a decent reach to put

3195

05:00:48,110 --> 05:00:45,360

two additional turns on the rest of

3196

05:00:50,868 --> 05:00:48,120

those bolts M10 11 and 12 without your

3197

05:00:53,208 --> 05:00:50,878

brt go ahead and do that and then we can

3198

05:00:57,230 --> 05:00:53,218

have Duke put two turns on her end and

3199

05:01:01,910 --> 05:00:59,448

okay sounds good I will just continue

3200

05:01:20,330 --> 05:01:01,920

with the two things and I'll also that

3201

05:01:20,340 --> 05:01:30,830

ah

3202

05:01:30,840 --> 05:01:44,470

so I'm working on n10 for two terms

3203

05:01:44,480 --> 05:02:02,448

of 10 times 11.

3204

05:02:06,170 --> 05:02:05,208

11

3205

05:02:09,110 --> 05:02:06,180

thank you

3206

05:02:29,868 --> 05:02:09,120

complete

3207

05:02:35,930 --> 05:02:32,330

okay copy koichi

3208

05:02:46,250 --> 05:02:35,940

with that Duke you can go ahead and put

3209

05:02:51,890 --> 05:02:49,310

foreign and actually Duke let's just

3210

05:02:53,990 --> 05:02:51,900

have you go to torque as planned so your

3211

05:03:02,070 --> 05:02:54,000

PGT settings are going to be Bravo One

3212

05:03:02,080 --> 05:03:08,270

[Music]

3213

05:03:15,590 --> 05:03:12,770

0 can I translate to uh Duke for VIP six

3214

05:03:17,570 --> 05:03:15,600

stand by kuichi if you can let's have

3215

05:03:19,310 --> 05:03:17,580

you go to Twitter since this is an alpha

3216

05:03:21,830 --> 05:03:19,320

setting on your PGT

3217

05:03:23,930 --> 05:03:21,840

so we're expecting an addition I can do

3218

05:03:26,510 --> 05:03:23,940

that yeah more than three additional

3219

05:03:37,368 --> 05:03:26,520

turns on these expecting five to ten

3220

05:03:55,010 --> 05:03:40,430

about six and a half to nine turns on

3221

05:03:58,010 --> 05:03:56,868

so once again the two astronauts working

3222

05:04:01,430 --> 05:03:58,020

in tandem

3223

05:04:03,590 --> 05:04:01,440

and Duke on the left side you see her

3224

05:04:05,570 --> 05:04:03,600

driving the bolts towards the bracket

3225

05:04:07,070 --> 05:04:05,580

and then back together so we want to

3226

05:04:09,890 --> 05:04:07,080

just run the procedure and then we'll

3227

05:04:15,230 --> 05:04:09,900

have koichi come to Duke in order to

3228

05:04:20,628 --> 05:04:17,510

seven in the house burns green light

3229

05:04:23,570 --> 05:04:20,638

11.8 on the torch

3230

05:04:24,948 --> 05:04:23,580

coffee seven and a half turns 11.8 on

3231

05:04:28,490 --> 05:04:24,958

the torque green light looking for

3232

05:04:32,990 --> 05:04:29,590

um

3233

05:04:34,670 --> 05:04:33,000

copy Duke you can Stow your PGT and

3234

05:05:03,050 --> 05:04:34,680

install the mid-strip fin into the

3235

05:05:03,060 --> 05:05:40,310

foreign

3236

05:05:47,330 --> 05:05:43,970

talk from 9 through 12. yeah a firm your

3237

05:05:48,890 --> 05:05:47,340

go to do that koichi M9 through M12

3238

05:05:51,830 --> 05:05:48,900

okay

3239

05:05:57,230 --> 05:05:54,948

uh clockwise too and uh did you say uh

3240

05:05:58,970 --> 05:05:57,240

property time good settings and it'll be

3241

05:06:01,368 --> 05:05:58,980

more than three additional turns we're

3242

05:06:20,150 --> 05:06:01,378

looking for five to ten total going to

3243

05:06:25,910 --> 05:06:22,190

because when a person is installed

3244

05:06:28,310 --> 05:06:25,920

perfect you can install the mli over M13

3245

05:06:30,050 --> 05:06:28,320

and M14 check that the mounting bracket

3246

05:06:37,670 --> 05:06:30,060

upper surface is clear

3247

05:06:41,030 --> 05:06:38,750

for

3248

05:06:44,868 --> 05:06:41,040

eign like

3249

05:06:47,208 --> 05:06:44,878

and the top is 3.6 copy four additional

3250

05:06:50,930 --> 05:06:47,218

turns green light 3.6 on the torque for

3251

05:06:50,940 --> 05:07:04,868

um

3252

05:07:12,410 --> 05:07:07,368

no problem we'll take a glove half and

3253

05:07:16,750 --> 05:07:14,270

s complete

3254

05:07:20,868 --> 05:07:16,760

3.8

3255

05:07:26,990 --> 05:07:20,878

copy five turns 7.8 foot pounds green

3256

05:07:33,410 --> 05:07:30,530

um thank you

3257

05:07:33,420 --> 05:07:38,100

working on the M11 now

3258

05:08:07,310 --> 05:07:40,310

[Music]

3259

05:08:07,320 --> 05:08:13,090

I'm 11 five and a half turns complete

3260

05:08:19,610 --> 05:08:15,350

five and a half additional green light

3261

05:08:19,620 --> 05:08:33,708

Pokemon M12

3262

05:08:39,170 --> 05:08:35,990

Duke next steps for you will be Tuesday

3263

05:08:39,180 --> 05:08:45,190

um

3264

05:08:52,430 --> 05:08:49,970

copy four turns green light 3.6 on M12

3265

05:08:53,690 --> 05:08:52,440

and for Duke you can egress the apfr and

3266

05:09:00,890 --> 05:08:53,700

then we'll have you work to roll the

3267

05:09:00,900 --> 05:09:11,390

I think I need to get the uh

3268

05:09:11,400 --> 05:09:19,430

checking Duke

3269

05:09:19,440 --> 05:09:36,288

[Applause]

3270

05:09:41,810 --> 05:09:38,810

yeah Duke if you can reach that

3271

05:09:43,550 --> 05:09:41,820

uh you can release the Rhett from that

3272

05:09:44,868 --> 05:09:43,560

one but we're assuming you're probably

3273

05:09:46,368 --> 05:09:44,878

not going to be able to reach it so

3274

05:09:52,910 --> 05:09:46,378

that'll be a step for koichi once he

3275

05:09:52,920 --> 05:09:56,690

okay uh say again

3276

05:10:02,510 --> 05:10:00,110

which you can Stow your PGT um and next

3277

05:10:04,910 --> 05:10:02,520

release the red Duke's rat from the

3278

05:10:09,490 --> 05:10:04,920

midstret

3279

05:10:17,628 --> 05:10:12,170

everybody all right here we go okay I

3280

05:10:22,910 --> 05:10:20,390

so with that that uh completes driving

3281

05:10:26,628 --> 05:10:22,920

the bolts on the mint strut on the right

3282

05:10:28,310 --> 05:10:26,638

side now the two will work to um make

3283

05:10:30,890 --> 05:10:28,320

sure the multi-layer insulation that

3284

05:10:33,590 --> 05:10:30,900

white cover is secured

3285

05:10:35,628 --> 05:10:33,600

um Duke has to go ahead to get out of

3286

05:10:37,490 --> 05:10:35,638

the foot restraint and start working on

3287

05:10:38,750 --> 05:10:37,500

re-angling it so they can work on the

3288

05:10:40,250 --> 05:10:38,760

left side they're going to do the same

3289

05:10:42,770 --> 05:10:40,260

thing so they're going to start with the

3290

05:10:44,330 --> 05:10:42,780

lower strut that goes to the base of the

3291

05:10:45,830 --> 05:10:44,340

mass canister and then complete the mid

3292

05:10:47,690 --> 05:10:45,840

strut they'll just do the same thing

3293

05:10:49,850 --> 05:10:47,700

really on the opposite side of the mass

3294

05:10:52,368 --> 05:10:49,860

canister but they're just wrapping up

3295

05:10:53,570 --> 05:10:52,378

the work on the mid strut as we speak

3296

05:10:57,050 --> 05:10:53,580

with that we'll take the glove happen

3297

05:10:57,060 --> 05:11:04,190

okay uh

3298

05:11:04,200 --> 05:11:10,490

what the goods and the happiest

3299

05:11:10,500 --> 05:11:15,470

coffee and I see your gauntlets are down

3300

05:11:21,530 --> 05:11:18,410

and do some pictures when you're ready

3301
05:11:25,670 --> 05:11:21,540
to egress that aprfr we'll have you roll

3302
05:11:29,448 --> 05:11:27,190
okay

3303
05:11:31,910 --> 05:11:29,458
[Music]

3304
05:11:41,628 --> 05:11:31,920
perfect this is going to be role of

3305
05:11:41,638 --> 05:11:47,510
will I go back through the stretch bag

3306
05:11:47,520 --> 05:12:40,610
a firm kuichi and take your brt with you

3307
05:12:40,620 --> 05:12:47,650
yes we can come down here

3308
05:12:52,250 --> 05:12:50,270
Tangled on my legs so we need to take a

3309
05:12:54,650 --> 05:12:52,260
look at that

3310
05:12:59,288 --> 05:12:54,660
okay let me check that

3311
05:12:59,298 --> 05:13:10,128
s like okay

3312
05:13:14,690 --> 05:13:12,288
and thank you for your your essay we've

3313
05:13:16,610 --> 05:13:14,700

got a really good camera view here those

3314

05:13:20,330 --> 05:13:16,620

cables were snagging on the Ingress head

3315

05:13:20,340 --> 05:13:24,070

thank you

3316

05:13:24,080 --> 05:13:27,190

okay

3317

05:13:27,200 --> 05:13:37,490

firm Hotel

3318

05:13:37,500 --> 05:13:40,610

okay

3319

05:13:46,850 --> 05:13:42,650

copy and I think now is a good time to

3320

05:14:12,170 --> 05:13:49,970

sounds good so uh

3321

05:14:29,330 --> 05:14:15,050

at the disposition there yeah is it good

3322

05:14:29,340 --> 05:14:51,850

foreign

3323

05:14:58,368 --> 05:14:54,948

guys before you fully install that brt

3324

05:15:00,590 --> 05:14:58,378

we've got the d-ring extender going

3325

05:15:08,810 --> 05:15:00,600

through the loop of the brt so just make

3326

05:15:12,050 --> 05:15:10,550

um

3327

05:15:14,208 --> 05:15:12,060

and

3328

05:15:17,530 --> 05:15:14,218

I think it'll be easier to clean once he

3329

05:15:41,930 --> 05:15:17,540

releases uh totally that's a good plan

3330

05:15:41,940 --> 05:15:45,650

okay

3331

05:15:45,660 --> 05:15:52,550

right

3332

05:15:56,810 --> 05:15:54,530

if I can lock it and give it a pickup

3333

05:16:03,050 --> 05:15:56,820

okay I'm gonna look flush just to

3334

05:16:10,510 --> 05:16:04,850

and I'm sitting at a good forecast

3335

05:16:10,520 --> 05:16:15,070

yeah we need to call this up

3336

05:16:21,410 --> 05:16:18,708

I didn't see it I didn't get a good view

3337

05:16:23,570 --> 05:16:21,420

of the Gap but if you've got the tab up

3338

05:16:25,850 --> 05:16:23,580

and a good pull test

3339

05:16:28,368 --> 05:16:25,860

think that's likely a good config let me

3340

05:16:28,378 --> 05:16:30,890

okay

3341

05:16:36,288 --> 05:16:33,890

yeah ground is happy with that thank you

3342

05:16:38,150 --> 05:16:36,298

and yeah now might be a good time to

3343

05:16:41,030 --> 05:16:38,160

just get the brt on the correct side of

3344

05:16:41,040 --> 05:16:55,550

okay so just beautiful

3345

05:16:55,560 --> 05:17:02,628

everything

3346

05:17:02,638 --> 05:17:07,250

okay great thank you okay

3347

05:17:13,490 --> 05:17:09,410

nice work guys

3348

05:17:13,500 --> 05:17:23,330

perfect thank you

3349

05:17:23,340 --> 05:17:29,170

okay

3350

05:17:33,830 --> 05:17:31,610

that's right so next steps will be

3351

05:17:36,590 --> 05:17:33,840

getting the left mid strut from straps

3352

05:18:16,670 --> 05:17:36,600

nine and ten Gucci you'll pass that left

3353

05:18:22,128 --> 05:18:19,430

and guys big picture uh we've got a

3354

05:18:24,410 --> 05:18:22,138

small win in that the medox limiting

3355

05:18:25,970 --> 05:18:24,420

reagent is continuing to look better and

3356

05:18:28,368 --> 05:18:25,980

better so we're looking at about a pet

3357

05:18:30,590 --> 05:18:28,378

of seven hours now as they're limiting

3358

05:18:32,270 --> 05:18:30,600

consumable we're still about 45 minutes

3359

05:18:35,990 --> 05:18:32,280

to an hour down on the timeline so no

3360

05:18:36,000 --> 05:18:41,030

copy that

3361

05:18:41,040 --> 05:18:45,550

this is the I need the um

3362

05:18:45,560 --> 05:18:49,250

let me get back over

3363

05:18:53,208 --> 05:18:51,230

periodically throughout the spacewalk

3364

05:18:55,610 --> 05:18:53,218

you'll hear reports of limiting

3365

05:18:58,250 --> 05:18:55,620

consumables of course the spacesuits

3366

05:19:00,288 --> 05:18:58,260

have uh the portable life support so

3367

05:19:01,910 --> 05:19:00,298

it's all contained within the spacesuit

3368

05:19:03,770 --> 05:19:01,920

and they measure these limiting

3369

05:19:05,628 --> 05:19:03,780

consumables that that medox that's

3370

05:19:08,208 --> 05:19:05,638

referred to as the carbon scrubbing

3371

05:19:10,550 --> 05:19:08,218

capability every time the crew members

3372

05:19:12,288 --> 05:19:10,560

exhale there is a system that is

3373

05:19:14,750 --> 05:19:12,298

currently pulling that carbon dioxide

3374

05:19:16,788 --> 05:19:14,760

from the environment inside the suit

3375

05:19:18,830 --> 05:19:16,798

it's trending in a good direction which

3376

05:19:20,868 --> 05:19:18,840

means that if needed the crew members

3377

05:19:22,730 --> 05:19:20,878

can use a little extra time at the back

3378

05:19:25,430 --> 05:19:22,740

end of this spacewalk up to seven hours

3379

05:19:26,810 --> 05:19:25,440

total for the duration of the spacewalk

3380

05:20:20,270 --> 05:19:26,820

if needed

3381

05:20:26,628 --> 05:20:22,970

stop you both and of course feel free to

3382

05:20:28,970 --> 05:20:26,638

use some teamwork for apfr Ingress which

3383

05:20:30,530 --> 05:20:28,980

you can leave that partially stowed in

3384

05:20:33,530 --> 05:20:30,540

the strut bag if that helps tend it well

3385

05:20:37,128 --> 05:20:33,540

it gets in the apfr

3386

05:20:37,138 --> 05:20:40,430

are you ready

3387

05:20:44,690 --> 05:20:42,790

here

3388

05:20:56,750 --> 05:20:44,700

[Music]

3389

05:22:01,850 --> 05:20:59,510

let me go through that yeah

3390

05:23:14,210 --> 05:22:09,948

foreign

3391

05:23:14,220 --> 05:23:21,770

[Applause]

3392

05:23:21,780 --> 05:23:29,280

foreign

3393

05:23:29,290 --> 05:23:42,570

[Music]

3394

05:23:42,580 --> 05:23:52,670

[Applause]

3395

05:24:29,930 --> 05:23:53,020

foreign

3396

05:24:35,930 --> 05:24:33,410

there's my toes selling clicky

3397

05:24:37,610 --> 05:24:35,940

but the left side is up sometimes gets

3398

05:24:38,948 --> 05:24:37,620

further you have to flip the heel down

3399

05:24:41,030 --> 05:24:38,958

further and then

3400

05:24:45,410 --> 05:24:41,040

put the

3401
05:24:47,628 --> 05:24:45,420
forward and the left side position is

3402
05:25:10,850 --> 05:24:47,638
good

3403
05:25:10,860 --> 05:25:17,330
okay

3404
05:25:22,430 --> 05:25:19,850
good keep keep going forward yeah that's

3405
05:25:28,310 --> 05:25:24,830
okay that right side position is good

3406
05:25:38,230 --> 05:25:28,320
yeah go forward go forward okay and now

3407
05:25:47,390 --> 05:25:42,610
came down left heels down further down

3408
05:25:47,400 --> 05:25:53,030
foreign

3409
05:25:58,190 --> 05:25:55,788
we're getting a great view from the high

3410
05:26:00,708 --> 05:25:58,200
definition helmet camera of koichiwakata

3411
05:26:03,530 --> 05:26:00,718
who's guiding uh his face walking

3412
05:26:06,650 --> 05:26:03,540
crewmate command call sign Duke through

3413
05:26:08,690 --> 05:26:06,660

the Ingress process of the apfr the um

3414

05:26:10,788 --> 05:26:08,700

portable foot restraint and so we're

3415

05:26:14,810 --> 05:26:10,798

seeing the up close how the heels

3416

05:26:18,230 --> 05:26:14,820

actually Ingress into the uh portable

3417

05:26:20,750 --> 05:26:18,240

foot restraint for it to lock uh the

3418

05:26:22,368 --> 05:26:20,760

astronaut into place so that they can

3419

05:26:25,730 --> 05:26:22,378

access the work site

3420

05:26:30,530 --> 05:26:25,740

feel down for the heel down

3421

05:26:37,250 --> 05:26:33,230

okay okay it's like that's good you're

3422

05:26:42,920 --> 05:26:39,170

awesome teamwork guys looking really

3423

05:26:42,930 --> 05:26:54,288

[Music]

3424

05:26:54,298 --> 05:27:01,070

left

3425

05:27:14,150 --> 05:27:05,590

and go back there that's perfect

3426
05:27:18,830 --> 05:27:17,390
and Duke you'll pop that Ingress Aid and

3427
05:27:33,230 --> 05:27:18,840
then you'll be ready for the handrail

3428
05:27:33,240 --> 05:28:06,350
foreign

3429
05:28:11,270 --> 05:28:08,270
there's that handoff we're really just

3430
05:28:14,170 --> 05:28:11,280
repeating the process that we saw on the

3431
05:28:18,530 --> 05:28:16,430
on the right side we're repeating the

3432
05:28:19,868 --> 05:28:18,540
same process on the left lower strut

3433
05:28:23,448 --> 05:28:19,878
first

3434
05:28:25,788 --> 05:28:23,458
and secure it with bolts to the mounting

3435
05:28:27,410 --> 05:28:25,798
bracket that you see from the view of

3436
05:28:30,170 --> 05:28:27,420
Duke's helmet camera and then from

3437
05:28:32,150 --> 05:28:30,180
koichi's he'll he'll install the lower

3438
05:28:34,190 --> 05:28:32,160

bracket on the base of the mass canister

3439

05:28:35,448 --> 05:28:34,200

so that'll be the first steps same thing

3440

05:28:37,190 --> 05:28:35,458

we saw on the right side we're doing

3441

05:28:39,948 --> 05:28:37,200

them you can translate to the left Stop

3442

05:29:03,110 --> 05:28:39,958

spherical bearing

3443

05:29:10,010 --> 05:29:06,050

in koichi you'll be going outboard and

3444

05:29:12,650 --> 05:29:10,020

then across the iea via the PVR GF

3445

05:29:16,430 --> 05:29:12,660

handrails and we recommend fairleading

3446

05:29:47,510 --> 05:29:19,730

understand that long translation there

3447

05:29:47,520 --> 05:30:02,560

copy

3448

05:30:02,570 --> 05:30:10,368

[Applause]

3449

05:30:14,868 --> 05:30:12,830

Duke I can give you PGT settings for

3450

05:30:16,450 --> 05:30:14,878

when you are eventually driving the M22

3451

05:30:19,010 --> 05:30:16,460

bolts

3452

05:30:24,590 --> 05:30:19,020

[Applause]

3453

05:30:24,600 --> 05:30:33,410

program clockwise two

3454

05:30:33,420 --> 05:30:39,948

okay

3455

05:30:44,410 --> 05:30:43,368

yeah that's exactly right so he'll start

3456

05:30:47,208 --> 05:30:44,420

his

3457

05:30:56,868 --> 05:30:47,218

two turns wait for him to twerk and then

3458

05:30:56,878 --> 05:31:29,150

foreign

3459

05:31:32,810 --> 05:31:31,310

great work Luigi when you get there

3460

05:31:55,970 --> 05:31:32,820

we'll be looking for the left side

3461

05:32:00,470 --> 05:31:58,070

and Duke just to start thinking about it

3462

05:32:02,570 --> 05:32:00,480

in between those first two turns that

3463

05:32:05,208 --> 05:32:02,580

you put on M22 and then while you're

3464

05:32:07,910 --> 05:32:05,218

waiting for koichi's bolts to be torqued

3465

05:32:10,550 --> 05:32:07,920

you can start the left side aerosa cable

3466

05:32:42,288 --> 05:32:36,050

okay

3467

05:32:51,590 --> 05:32:45,590

actually I don't have I don't have to

3468

05:32:57,850 --> 05:32:53,810

you gotta do not trust that should be

3469

05:32:57,860 --> 05:33:04,190

so uh

3470

05:33:08,510 --> 05:33:07,310

I went around the grandpa fixture side

3471

05:33:14,770 --> 05:33:08,520

so

3472

05:33:19,490 --> 05:33:14,780

right okay

3473

05:33:19,500 --> 05:33:25,208

okay

3474

05:33:25,218 --> 05:33:59,940

I have to go down

3475

05:33:59,950 --> 05:34:12,110

[Applause]

3476
05:34:12,120 --> 05:34:24,150
foreign

3477
05:34:24,160 --> 05:34:37,670
[Music]

3478
05:34:37,680 --> 05:34:53,170
foreign

3479
05:35:00,470 --> 05:34:56,810
to work on those that lower left strut

3480
05:35:02,690 --> 05:35:00,480
you can see uh Duke in place ingressed

3481
05:35:04,970 --> 05:35:02,700
into the footer strain ready to go as

3482
05:35:08,270 --> 05:35:04,980
soon as koichiwakada gets into place

3483
05:35:10,430 --> 05:35:08,280
we're now entering a Handover so we're

3484
05:35:12,350 --> 05:35:10,440
losing Communications temporarily and we

3485
05:35:14,090 --> 05:35:12,360
will look at that soon we're also

3486
05:35:17,448 --> 05:35:14,100
entering into an orbital night time so

3487
05:35:19,010 --> 05:35:17,458
you saw sort of the the lighting change

3488
05:35:21,350 --> 05:35:19,020

just a bit

3489

05:35:23,390 --> 05:35:21,360

um depending on the length of this

3490

05:35:25,730 --> 05:35:23,400

Handover we might come back into an

3491

05:35:27,708 --> 05:35:25,740

orbital night time in which case we'll

3492

05:35:29,750 --> 05:35:27,718

have the external lights on the outside

3493

05:35:31,610 --> 05:35:29,760

of the space station being illuminating

3494

05:35:35,090 --> 05:35:31,620

their work site and then of course the

3495

05:35:37,250 --> 05:35:35,100

helmet cameras on the or the helmets on

3496

05:35:38,470 --> 05:35:37,260

the spacesuits themselves have lighting

3497

05:35:40,850 --> 05:35:38,480

that allow

3498

05:35:43,250 --> 05:35:40,860

the duo to continue their work

3499

05:35:45,230 --> 05:35:43,260

installing these struts there are no

3500

05:35:46,550 --> 05:35:45,240

lighting or thermal constraints when it

3501

05:35:49,430 --> 05:35:46,560

comes to the installation process

3502

05:35:51,770 --> 05:35:49,440

sometimes astronauts have to pause

3503

05:35:53,990 --> 05:35:51,780

during various lighting and thermal

3504

05:35:56,750 --> 05:35:54,000

conditions depending on the work that

3505

05:35:59,090 --> 05:35:56,760

they're doing but um we'll see Duke and

3506

05:36:02,150 --> 05:35:59,100

koichi together continuing the process

3507

05:36:08,708 --> 05:36:02,160

non-stop through their installing this

3508

05:36:13,368 --> 05:36:11,868

okay copy that Luigi just to confirm the

3509

05:36:22,850 --> 05:36:13,378

soft spherical bearing had a good

3510

05:36:22,860 --> 05:36:26,510

um

3511

05:36:32,390 --> 05:36:30,050

perfect and for that M21 end you can

3512

05:36:34,070 --> 05:36:32,400

hand start that or I can give you PGT

3513

05:36:38,810 --> 05:36:34,080

settings with the silver PGT from the

3514

05:36:43,368 --> 05:36:40,970

okay uh could you give me the PCP

3515

05:36:45,350 --> 05:36:43,378

settings you bet that'll be Alpha One

3516

05:36:48,590 --> 05:36:45,360

clockwise one and looking for

3517

05:36:50,690 --> 05:36:48,600

approximately four turns

3518

05:36:56,390 --> 05:36:50,700

oh

3519

05:37:29,868 --> 05:36:56,400

okay Alpha One clockwise one quarter

3520

05:38:20,960 --> 05:37:38,390

foreign

3521

05:38:41,920 --> 05:38:22,850

[Music]

3522

05:38:41,930 --> 05:38:57,350

[Applause]

3523

05:38:57,360 --> 05:39:23,208

foreign

3524

05:39:36,590 --> 05:39:24,890

it's good that

3525

05:39:36,600 --> 05:39:46,310

to your left a little bit

3526

05:39:46,320 --> 05:39:57,470

okay that's good

3527

05:39:57,480 --> 05:40:24,530

foreign

3528

05:40:32,770 --> 05:40:26,510

guppy four turns complete and that's

3529

05:40:38,330 --> 05:40:35,868

and Duke before you start M22 just make

3530

05:40:39,288 --> 05:40:38,340

sure the pit pin lanyard is free of the

3531

05:40:42,170 --> 05:40:39,298

Clevis

3532

05:41:04,490 --> 05:40:42,180

then you can hand start or PGT you're

3533

05:41:04,500 --> 05:41:41,750

foreign

3534

05:41:48,948 --> 05:41:45,350

copy both of you koichi it'll be Bravo 7

3535

05:41:51,948 --> 05:41:48,958

clockwise tune but as you know we are

3536

05:42:01,010 --> 05:41:51,958

waiting for M21 to be driven two turns

3537

05:42:01,020 --> 05:42:19,070

travel 7 clockwise

3538

05:42:26,868 --> 05:42:22,368

copy Bravo One clockwise 2 set

3539

05:42:29,750 --> 05:42:26,878

and two turns on M22 so with that koichi

3540

05:42:34,570 --> 05:42:29,760

you can drive M21 to torque this will be

3541

05:42:34,580 --> 05:42:42,890

thank you

3542

05:42:50,390 --> 05:42:46,930

so uh Duke Nicole Mann is

3543

05:42:55,850 --> 05:42:50,400

copy two turns and just to make sure do

3544

05:43:01,490 --> 05:42:58,250

from September

3545

05:43:04,430 --> 05:43:01,500

copy okay now kuichi you can go this is

3546

05:43:08,750 --> 05:43:04,440

10 and a half to 11 turns going to

3547

05:43:14,150 --> 05:43:11,628

so recap the two astronauts are on two

3548

05:43:16,550 --> 05:43:14,160

ends of the lower strut Nicole man

3549

05:43:18,650 --> 05:43:16,560

towards the mounting bracket she's got

3550

05:43:21,948 --> 05:43:18,660

the pistol grip tool so she can secure

3551

05:43:23,750 --> 05:43:21,958

it to the mounting bracket and again is

3552

05:43:25,970 --> 05:43:23,760

at the base of the mass canister at the

3553

05:43:27,590 --> 05:43:25,980

other end of that strut also with his

3554

05:43:30,530 --> 05:43:27,600

own pistol grip tool so they're just

3555

05:43:32,270 --> 05:43:30,540

bolting both sides of the strut to make

3556

05:43:33,830 --> 05:43:32,280

sure it's secured in place it's going to

3557

05:43:35,030 --> 05:43:33,840

go at the lower strut on the left and

3558

05:43:41,150 --> 05:43:35,040

then they'll work together on the

3559

05:43:41,160 --> 05:44:20,810

everybody

3560

05:44:20,820 --> 05:44:24,470

okay y'all

3561

05:44:30,250 --> 05:44:26,708

yeah I got the

3562

05:44:32,948 --> 05:44:30,260

five times and then I got a green light

3563

05:44:39,410 --> 05:44:32,958

got the the

3564

05:44:44,930 --> 05:44:43,070

okay copy five turns we are expecting to

3565

05:44:47,330 --> 05:44:44,940

use the torque wrench for this

3566

05:44:49,548 --> 05:44:47,340

so you'll be swapping the two inch rigid

3567

05:44:51,530 --> 05:44:49,558

from the silver PGT to the torque wrench

3568

05:44:54,350 --> 05:44:51,540

with a good pull test and then we'll

3569

05:44:56,868 --> 05:44:54,360

continue driving M21

3570

05:45:00,708 --> 05:44:56,878

okay

3571

05:45:02,810 --> 05:45:00,718

but you know it's uh you know it's not

3572

05:45:07,190 --> 05:45:02,820

on the right side

3573

05:45:08,990 --> 05:45:07,200

when I talked about on the uh for PDT he

3574

05:45:12,830 --> 05:45:09,000

was pretty close to the blocking flash

3575

05:45:19,440 --> 05:45:12,840

black line clutch but now I see uh for

3576

05:45:26,510 --> 05:45:23,530

[Music]

3577

05:45:27,650 --> 05:45:26,520

driven by token so I don't think we'll

3578

05:45:38,208 --> 05:45:27,660

get there

3579

05:45:43,070 --> 05:45:41,090

yeah koichi we will have you switch to

3580

05:45:44,750 --> 05:45:43,080

the torque wrench it will get there all

3581

05:45:47,510 --> 05:45:44,760

the way with the torque wrench I know

3582

05:45:49,010 --> 05:45:47,520

that's going to take uh more turns if

3583

05:45:50,150 --> 05:45:49,020

you want to stand by just a moment let

3584

05:45:54,590 --> 05:45:50,160

me ask and see if we can make another

3585

05:45:54,600 --> 05:46:11,448

okay copy that

3586

05:46:15,530 --> 05:46:13,850

all right Luigi uh we will have you

3587

05:46:17,390 --> 05:46:15,540

switch to the torque wrench

3588

05:46:20,690 --> 05:46:17,400

um so we're expecting more turns than

3589

05:46:22,548 --> 05:46:20,700

you had to do on the other side okay

3590

05:46:24,470 --> 05:46:22,558

but this will get us to the correct

3591

05:46:25,610 --> 05:46:24,480

torque and focus alignment with that

3592

05:46:27,650 --> 05:46:25,620

bearing

3593

05:46:29,690 --> 05:46:27,660

so switch the two inch rigid to the

3594

05:46:31,128 --> 05:46:29,700

torque wrench with a good pull test okay

3595

05:46:32,930 --> 05:46:31,138

copy that

3596

05:46:50,810 --> 05:46:32,940

okay

3597

05:46:57,288 --> 05:46:53,510

two three twists really nice work Duke

3598

05:46:59,690 --> 05:46:57,298

that's great and now once we've got M21

3599

05:47:19,190 --> 05:46:59,700

to torque with the torque wrench you'll

3600

05:47:22,548 --> 05:47:20,750

dude you can also go ahead and install

3601
05:47:27,830 --> 05:47:22,558
that grounding pin into the grounding

3602
05:48:04,128 --> 05:47:29,868
trying to visit

3603
05:48:04,138 --> 05:48:07,730
okay okay

3604
05:48:12,830 --> 05:48:10,010
happy people touch

3605
05:48:16,128 --> 05:48:12,840
next you'll drive M21 to torque with

3606
05:48:17,330 --> 05:48:16,138
that torque wrench going to pull torque

3607
05:48:18,830 --> 05:48:17,340
so that the torque wrench breaks over

3608
05:48:22,430 --> 05:48:18,840
twice

3609
05:48:25,190 --> 05:48:22,440
it's 14 to 15 turns total so we're

3610
05:48:29,570 --> 05:48:25,200
expecting 9 or 10 additional turns with

3611
05:48:29,580 --> 05:48:32,270
okay

3612
05:48:32,280 --> 05:48:42,530
godspeed I know that's a lot of turns

3613
05:48:47,448 --> 05:48:44,750

as a quick overview of installing these

3614

05:48:50,750 --> 05:48:47,458

struts um with the astronauts at both

3615

05:48:54,170 --> 05:48:50,760

ends of the strut they alternate driving

3616

05:48:57,048 --> 05:48:54,180

the bolts so it was um

3617

05:48:59,330 --> 05:48:57,058

koichi wakada who started with his

3618

05:49:01,788 --> 05:48:59,340

pistol grip tool once he was done it

3619

05:49:04,250 --> 05:49:01,798

went back to Nicole Mann now it's back

3620

05:49:06,170 --> 05:49:04,260

to koichiwakana and then Nicole man will

3621

05:49:08,448 --> 05:49:06,180

do it again there's only one bolt but

3622

05:49:10,730 --> 05:49:08,458

they just addressed that same bolt two

3623

05:49:12,350 --> 05:49:10,740

times while alternating

3624

05:49:14,868 --> 05:49:12,360

um part of the procedure is to just make

3625

05:49:17,350 --> 05:49:14,878

to avoid anything like stripping or or

3626
05:49:19,368 --> 05:49:17,360
anything like that so right now you see

3627
05:49:20,868 --> 05:49:19,378
koichiwakata using that torque wrench

3628
05:49:22,490 --> 05:49:20,878
and that's really just to make sure it's

3629
05:49:24,530 --> 05:49:22,500
super secure he's also going to do a

3630
05:49:26,750 --> 05:49:24,540
pool test just a quick tug just to make

3631
05:49:29,750 --> 05:49:26,760
sure there's no wiggle and it's truly

3632
05:49:32,990 --> 05:49:29,760
installed and so they'll continue to

3633
05:49:35,208 --> 05:49:33,000
alternate Nicole man has one more one

3634
05:49:37,190 --> 05:49:35,218
more time has to address that bolt on

3635
05:49:40,070 --> 05:49:37,200
the on the top side next to the mounting

3636
05:49:41,930 --> 05:49:40,080
bracket and then they'll wrap up with

3637
05:49:44,990 --> 05:49:41,940
the multi-layer insulation making sure

3638
05:49:47,628 --> 05:49:45,000

it looks good before getting to the left

3639

05:49:51,350 --> 05:49:47,638

mid strut and that'll be the last

3640

05:49:53,930 --> 05:49:51,360

component of the um of installing the

3641

05:49:57,470 --> 05:49:53,940

mounting bracket before they go around

3642

05:49:59,208 --> 05:49:57,480

and secure the mli and address any last

3643

05:50:00,288 --> 05:49:59,218

minute items but that's the last

3644

05:50:26,930 --> 05:50:00,298

component

3645

05:50:26,940 --> 05:50:55,970

foreign

3646

05:50:55,980 --> 05:51:01,368

[Applause]

3647

05:51:01,378 --> 05:51:24,880

foreign

3648

05:51:31,190 --> 05:51:26,790

[Applause]

3649

05:52:08,310 --> 05:52:01,850

foreign

3650

05:52:08,320 --> 05:52:33,470

[Music]

3651
05:52:33,480 --> 05:52:55,370
foreign

3652
05:52:55,380 --> 05:53:05,690
[Music]

3653
05:54:40,970 --> 05:53:35,750
foreign

3654
05:54:40,980 --> 05:54:54,270
Street effect

3655
05:54:59,810 --> 05:54:56,750
[Music]

3656
05:55:11,030 --> 05:55:01,670
here coming in a little broken there

3657
05:55:18,230 --> 05:55:13,910
and twice uh break over I found that

3658
05:55:18,240 --> 05:55:21,410
foreign

3659
05:55:21,420 --> 05:55:28,750
[Music]

3660
05:55:34,730 --> 05:55:31,070
flush and the torque wrench broke over

3661
05:55:36,948 --> 05:55:34,740
twice we'll look for no gap between the

3662
05:55:39,650 --> 05:55:36,958
strip boss and bearing and a good wiggle

3663
05:55:41,270 --> 05:55:39,660

test and I was unable to copy the total

3664

05:55:47,448 --> 05:55:41,280

number of additional turns that you

3665

05:55:47,458 --> 05:55:55,070

that starts with the uh that's okay

3666

05:55:59,690 --> 05:55:57,010

every time

3667

05:56:03,230 --> 05:55:59,700

in the short spots

3668

05:56:07,670 --> 05:56:05,448

okay koichi we hear you see a gap

3669

05:56:35,270 --> 05:56:07,680

between the Boston bearing and copied

3670

05:56:41,990 --> 05:56:37,430

okay kuichi stand by one while we talk

3671

05:56:42,000 --> 05:57:45,350

puppy

3672

05:57:51,048 --> 05:57:47,990

right now both of the astronauts just

3673

05:57:52,788 --> 05:57:51,058

just pausing taking a moment to relax as

3674

05:57:54,830 --> 05:57:52,798

they wait for ground teams to assess

3675

05:57:56,770 --> 05:57:54,840

their work with the bolts on this

3676

05:57:59,330 --> 05:57:56,780

particular lower strut

3677

05:58:02,510 --> 05:57:59,340

determining if it's the if it was

3678

05:58:05,330 --> 05:58:02,520

appropriate for and if the

3679

05:58:07,368 --> 05:58:05,340

mounting bracket itself and the mounting

3680

05:58:09,530 --> 05:58:07,378

platform really is in a good

3681

05:58:44,270 --> 05:58:09,540

configuration before they proceed on to

3682

05:58:48,948 --> 05:58:47,090

okay koichi we've talked it over um I

3683

05:58:50,628 --> 05:58:48,958

know you will love this you get to use

3684

05:58:52,850 --> 05:58:50,638

the torque wrench even more what we're

3685

05:58:55,190 --> 05:58:52,860

going to have you do is continue going

3686

05:58:58,670 --> 05:58:55,200

until the torque wrench breaks over and

3687

05:59:01,368 --> 05:58:58,680

then keep going so this will add extra

3688

05:59:08,330 --> 05:59:01,378

torque see if you can get that bolt to

3689

05:59:15,470 --> 05:59:12,288

okay so uh it will break over at 60

3690

05:59:17,990 --> 05:59:15,480

pounds and then can I keep talking hey

3691

05:59:24,230 --> 05:59:18,000

firm yep it's gonna break over and as it

3692

05:59:24,240 --> 05:59:40,368

I'll do that

3693

05:59:45,530 --> 05:59:42,770

Luigi ideally we're looking for one

3694

05:59:50,750 --> 05:59:45,540

additional turn let us know if it starts

3695

05:59:54,530 --> 05:59:52,250

okay

3696

05:59:56,330 --> 05:59:54,540

and meanwhile Duke we're checking to see

3697

06:00:29,090 --> 05:59:56,340

if you can start M22 in this

3698

06:00:35,270 --> 06:00:32,510

Duke you will be able to starch this M22

3699

06:00:37,788 --> 06:00:35,280

driving M22 to torque that'll be an

3700

06:00:39,830 --> 06:00:37,798

additional five to seven turns you

3701
06:00:59,150 --> 06:00:39,840
should have that pgp set to Bravo One

3702
06:00:59,160 --> 06:01:04,128
thank you

3703
06:01:08,448 --> 06:01:06,470
hey koichi we're watching your camera

3704
06:01:10,430 --> 06:01:08,458
view here it looks like it's not moving

3705
06:01:14,048 --> 06:01:10,440
we're going to apply more torque is that

3706
06:01:14,058 --> 06:01:32,868
yeah it doesn't have any sign of voting

3707
06:01:32,878 --> 06:01:57,610
foreign

3708
06:02:04,368 --> 06:02:00,288
okay copy six and a half turns green

3709
06:02:05,628 --> 06:02:04,378
light 11.9 on the torque for M22

3710
06:02:08,448 --> 06:02:05,638
Duke

3711
06:02:15,590 --> 06:02:08,458
we also want black line flush after that

3712
06:02:22,010 --> 06:02:19,250
and then koichi we didn't have a great

3713
06:02:23,750 --> 06:02:22,020

view of that uh boss and boss bearing

3714

06:02:25,788 --> 06:02:23,760

just to make sure

3715

06:02:27,410 --> 06:02:25,798

um if you can take another look at it

3716

06:02:29,690 --> 06:02:27,420

see if you can get eyes on I know it's

3717

06:02:32,090 --> 06:02:29,700

dark and make sure that we're looking at

3718

06:02:34,128 --> 06:02:32,100

the boss to boss bearing clearance as

3719

06:02:41,090 --> 06:02:34,138

opposed to the pad itself from structure

3720

06:02:47,930 --> 06:02:44,390

okay

3721

06:02:53,890 --> 06:02:47,940

[Applause]

3722

06:03:01,368 --> 06:02:57,170

we don't have a great view of it so

3723

06:03:04,128 --> 06:03:01,378

we'll trust your uh eyes in person there

3724

06:03:07,128 --> 06:03:04,138

and just looking for the gap between the

3725

06:03:10,910 --> 06:03:07,138

Boston bearing see if it's yeah just

3726

06:03:16,490 --> 06:03:13,788

uh there's no change in the last uh you

3727

06:03:19,730 --> 06:03:16,500

know attempts you know I told you down

3728

06:03:21,230 --> 06:03:19,740

to the you know the breaking dark value

3729

06:03:24,230 --> 06:03:21,240

and

3730

06:03:28,070 --> 06:03:24,240

as a matter of fact

3731

06:03:30,060 --> 06:03:28,080

with this uh you know helmet right I

3732

06:03:31,310 --> 06:03:30,070

really do not see the um

3733

06:03:33,830 --> 06:03:31,320

[Music]

3734

06:03:36,470 --> 06:03:33,840

the vehicle there inside because the

3735

06:03:42,380 --> 06:03:36,480

circle bearing is not going to Black and

3736

06:03:47,030 --> 06:03:44,530

[Music]

3737

06:03:49,310 --> 06:03:47,040

to the uh

3738

06:03:50,750 --> 06:03:49,320

fearful Berry

3739

06:03:53,330 --> 06:03:50,760

it's

3740

06:03:59,390 --> 06:03:55,970

fall or almost

3741

06:04:02,448 --> 06:03:59,400

it's writing condition I cannot confirm

3742

06:04:05,330 --> 06:04:02,458

probably what you see is what I'm seeing

3743

06:04:07,368 --> 06:04:05,340

okay copy that koichi and we'll have a

3744

06:04:08,750 --> 06:04:07,378

quick Handover coming up here in a

3745

06:04:10,310 --> 06:04:08,760

couple seconds if you can do a wiggle

3746

06:04:15,650 --> 06:04:10,320

test just to see if the boss and boss

3747

06:04:20,030 --> 06:04:18,110

and then Duke for you you can install

3748

06:04:21,590 --> 06:04:20,040

the lower strut mli around the clevis

3749

06:04:27,130 --> 06:04:21,600

understanding you've got that thick pin

3750

06:04:31,970 --> 06:04:28,628

[Music]

3751
06:04:36,230 --> 06:04:31,980
working on MLA perfect and you can also

3752
06:04:45,048 --> 06:04:36,240
release the boss and uh he seems to be

3753
06:04:49,910 --> 06:04:47,030
now it looks like the alignment is good

3754
06:04:52,368 --> 06:04:49,920
but in this lighting Condition it's

3755
06:04:55,970 --> 06:04:52,378
really difficult to see how much Gap

3756
06:04:58,990 --> 06:04:55,980
we have between the uh and the spherical

3757
06:05:15,708 --> 06:05:02,030
okay coffee we'll talk about that for

3758
06:05:21,110 --> 06:05:17,810
and we've got a quick Handover coming in

3759
06:05:23,330 --> 06:05:21,120
20 seconds here but we'll have you just

3760
06:05:27,830 --> 06:05:23,340
install the mli on the lower strut pad

3761
06:05:54,110 --> 06:05:30,350
copy that it worked I confirm I can

3762
06:05:59,330 --> 06:05:57,530
now in another Handover period uh we

3763
06:06:01,788 --> 06:05:59,340

temporarily lost video from the

3764

06:06:03,708 --> 06:06:01,798

International Space Station once again

3765

06:06:05,510 --> 06:06:03,718

um we expect a very short Handover and

3766

06:06:07,490 --> 06:06:05,520

we'll be getting some of that video soon

3767

06:06:09,470 --> 06:06:07,500

but a quick look here in Michigan

3768

06:06:11,930 --> 06:06:09,480

control Houston it's these teams that

3769

06:06:14,448 --> 06:06:11,940

you're looking at that are uh guiding

3770

06:06:16,190 --> 06:06:14,458

the um two astronauts through their

3771

06:06:17,628 --> 06:06:16,200

procedures today

3772

06:06:20,090 --> 06:06:17,638

um from here in the room they're working

3773

06:06:21,530 --> 06:06:20,100

hard to get through the procedures and

3774

06:06:22,310 --> 06:06:21,540

understand

3775

06:06:29,150 --> 06:06:22,320

um

3776

06:06:32,570 --> 06:06:29,160

Mann and koichiwakata through today's uh

3777

06:06:36,890 --> 06:06:34,788

topic Gucci I see that in your heck of

3778

06:06:38,810 --> 06:06:36,900

you um big picture will be probably

3779

06:06:40,430 --> 06:06:38,820

trying to come back to this in better

3780

06:06:41,690 --> 06:06:40,440

lighting conditions so we can get good

3781

06:06:44,150 --> 06:06:41,700

eyes on

3782

06:06:46,850 --> 06:06:44,160

uh meanwhile we'll work on that left mid

3783

06:06:46,860 --> 06:06:59,150

copy that

3784

06:07:12,670 --> 06:07:00,330

okay

3785

06:07:36,650 --> 06:07:15,770

in this area

3786

06:07:41,330 --> 06:07:39,470

do a bigger picture next couple of steps

3787

06:07:43,850 --> 06:07:41,340

for you you'll be extending that mid

3788

06:07:47,510 --> 06:07:43,860

strut toward koichi

3789

06:07:50,330 --> 06:07:47,520

and then you'll be driving m28 to torque

3790

06:07:52,070 --> 06:07:50,340

after kuichi gets his side installed if

3791

06:07:56,030 --> 06:07:52,080

you want I can give you PGT settings or

3792

06:08:12,590 --> 06:07:58,430

okay I think it Remains the Same with

3793

06:08:50,390 --> 06:08:47,208

okay

3794

06:08:57,850 --> 06:08:53,330

[Music]

3795

06:09:02,930 --> 06:09:00,530

you can translate to the left side pad

3796

06:09:04,310 --> 06:09:02,940

installation location and once you're

3797

06:09:09,920 --> 06:09:04,320

there check that your safer handles are

3798

06:09:09,930 --> 06:09:23,628

[Music]

3799

06:09:23,638 --> 06:10:07,230

foreign

3800

06:10:13,030 --> 06:10:08,868

[Applause]

3801
06:10:13,040 --> 06:10:42,890
there we are

3802
06:10:42,900 --> 06:11:29,570
foreign

3803
06:11:29,580 --> 06:11:33,470
okay

3804
06:11:37,128 --> 06:11:35,690
nice work guys and quickie if you could

3805
06:11:39,170 --> 06:11:37,138
just check that your safer handles are

3806
06:11:46,368 --> 06:11:39,180
down as well and then Duke you can

3807
06:11:46,378 --> 06:11:51,128
do you have an eye on my uh

3808
06:11:51,138 --> 06:11:57,530
let's see if you move your right hand up

3809
06:11:57,540 --> 06:12:01,250
forward

3810
06:12:01,260 --> 06:12:22,810
foreign

3811
06:12:27,830 --> 06:12:25,670
copy we appreciate it

3812
06:12:29,390 --> 06:12:27,840
all right for that mass canister side

3813
06:12:31,670 --> 06:12:29,400

pad just check that the arrow is

3814

06:12:33,830 --> 06:12:31,680

pointing up and once you've got it from

3815

06:12:36,830 --> 06:12:33,840

duke engage the right side first then

3816

06:12:50,030 --> 06:12:39,048

do that

3817

06:13:01,610 --> 06:12:53,190

could you hold it there

3818

06:13:01,620 --> 06:13:06,190

okay thank you

3819

06:13:06,200 --> 06:13:13,850

right back first

3820

06:13:13,860 --> 06:13:37,310

ah

3821

06:13:37,320 --> 06:13:45,190

the alignment was not

3822

06:14:06,010 --> 06:13:47,000

did you try that again

3823

06:14:06,020 --> 06:14:10,910

on this one

3824

06:14:16,670 --> 06:14:14,270

second quickie I think there is

3825

06:14:18,288 --> 06:14:16,680

a sweet spot that you will need to get

3826

06:14:23,330 --> 06:14:18,298

it in but I don't think that there's any

3827

06:14:23,340 --> 06:14:26,270

okay

3828

06:14:26,280 --> 06:14:35,110

now

3829

06:14:42,430 --> 06:14:38,750

can I start with the N1 through M4 yeah

3830

06:14:45,470 --> 06:14:42,440

you got the side pad engaged

3831

06:14:47,690 --> 06:14:45,480

students engaged okay perfect we'll have

3832

06:14:52,030 --> 06:14:47,700

PGT settings for you that's Alpha two

3833

06:14:56,390 --> 06:14:53,810

I do

3834

06:14:57,650 --> 06:14:56,400

I'm a red PGT

3835

06:14:59,510 --> 06:14:57,660

are you from

3836

06:15:12,590 --> 06:14:59,520

and you'll be going two turns on each of

3837

06:15:16,970 --> 06:15:14,570

and hey kuichi looks like that side pad

3838

06:15:20,090 --> 06:15:16,980

has got a mind of its own and popped off

3839

06:15:28,128 --> 06:15:23,150

okay our

3840

06:15:28,138 --> 06:15:37,310

okay Duke I'm gonna

3841

06:15:37,320 --> 06:16:00,948

right side first okay

3842

06:16:10,430 --> 06:16:02,730

big o'clockwise

3843

06:16:10,440 --> 06:16:20,390

take two times on M1

3844

06:16:24,170 --> 06:16:21,770

and bye we're seeing a little bit of

3845

06:16:27,288 --> 06:16:24,180

movement in that side pad if you could

3846

06:16:38,770 --> 06:16:27,298

just kind of push on it or give it a

3847

06:16:38,780 --> 06:16:52,628

was not engaged

3848

06:16:58,430 --> 06:16:55,430

up feature for this one hey firm there's

3849

06:17:00,708 --> 06:16:58,440

a soft doc feature so if you start from

3850

06:17:03,350 --> 06:17:00,718

the right side there's kind of a lift

3851
06:17:06,048 --> 06:17:03,360
that you have to engage underneath the

3852
06:17:09,530 --> 06:17:06,058
plate that you're driving the bolts into

3853
06:17:20,470 --> 06:17:09,540
so see if you can get that hooked yeah

3854
06:17:20,480 --> 06:17:42,490
my little bit closer to the right area

3855
06:17:42,500 --> 06:17:56,170
a little further

3856
06:18:02,830 --> 06:17:59,030
it seems like it's in the tough talk but

3857
06:18:08,810 --> 06:18:06,490
I'm just looking at it

3858
06:18:11,448 --> 06:18:08,820
yeah it looks like it's in a good spot

3859
06:18:13,910 --> 06:18:11,458
but it doesn't go in

3860
06:18:16,250 --> 06:18:13,920
yeah koichi there's still a little bit

3861
06:18:20,270 --> 06:18:16,260
of a gap where we have a not a great

3862
06:18:20,280 --> 06:18:25,250
I agree

3863
06:18:46,868 --> 06:18:27,890

I like it somehow it's just don't go in

3864

06:18:46,878 --> 06:18:52,730

just doesn't go in

3865

06:18:58,250 --> 06:18:55,970

okay copy that koichi uh one thing that

3866

06:19:00,830 --> 06:18:58,260

might help is having Duke add some

3867

06:19:02,690 --> 06:19:00,840

leverage on her end and just to correct

3868

06:19:05,150 --> 06:19:02,700

one thing that I said earlier there's

3869

06:19:07,010 --> 06:19:05,160

not actually a sweet spot vertically in

3870

06:19:09,708 --> 06:19:07,020

that alignment the soft dock should work

3871

06:19:12,650 --> 06:19:09,718

uh anywhere vertically on that physical

3872

06:19:22,730 --> 06:19:16,610

okay I understand so so this time

3873

06:19:22,740 --> 06:19:32,628

yeah have her push it in and towards you

3874

06:19:32,638 --> 06:19:41,050

do that Duke

3875

06:19:41,060 --> 06:19:57,948

[Applause]

3876

06:19:57,958 --> 06:20:05,770

breakfast

3877

06:20:05,780 --> 06:20:17,048

all right there you go

3878

06:20:22,190 --> 06:20:19,610

okay let me know and I'll move my hand

3879

06:20:27,230 --> 06:20:22,200

okay looks like it's it's in a good spot

3880

06:20:27,240 --> 06:20:29,270

um

3881

06:20:29,280 --> 06:20:39,070

vertically

3882

06:20:44,448 --> 06:20:41,690

it's a symmetrical

3883

06:20:45,530 --> 06:20:44,458

on the episode and Lower Side

3884

06:20:47,948 --> 06:20:45,540

but

3885

06:20:51,190 --> 06:20:47,958

the left side

3886

06:20:53,390 --> 06:20:51,200

okay copy everything

3887

06:20:55,670 --> 06:20:53,400

we've got some troubleshooting except

3888

06:20:57,830 --> 06:20:55,680

for you here if you take it off

3889

06:20:59,750 --> 06:20:57,840

you'll want to look on the underside of

3890

06:21:02,570 --> 06:20:59,760

that side pad and we're going to have

3891

06:21:04,788 --> 06:21:02,580

you check that the ball detent there are

3892

06:21:07,070 --> 06:21:04,798

two of them on the side pad check that

3893

06:21:09,650 --> 06:21:07,080

they can be depressed you can use the

3894

06:21:12,470 --> 06:21:09,660

hook on one of your uh adjustables or

3895

06:21:12,480 --> 06:21:16,788

okay let me check

3896

06:21:16,798 --> 06:21:22,788

yeah they can move

3897

06:21:53,208 --> 06:21:25,430

but these things can move copy that

3898

06:21:59,868 --> 06:21:57,110

it seems to me that the right side

3899

06:22:03,230 --> 06:21:59,878

about engaged

3900

06:22:09,708 --> 06:22:07,548

okay koichi so on the right side you'll

3901

06:22:13,970 --> 06:22:09,718

see there's kind of a tongue

3902

06:22:16,850 --> 06:22:13,980

on the soft capture mechanism

3903

06:22:18,830 --> 06:22:16,860

on the side path yeah so that tongue

3904

06:22:20,390 --> 06:22:18,840

will have to fit into a gap on the right

3905

06:22:22,250 --> 06:22:20,400

side

3906

06:22:25,190 --> 06:22:22,260

there shouldn't be much of a sweet spot

3907

06:22:27,590 --> 06:22:25,200

but just try uh installing it partially

3908

06:22:31,670 --> 06:22:27,600

and moving it up and down to see if it

3909

06:22:31,680 --> 06:22:37,788

okay

3910

06:22:37,798 --> 06:22:47,030

say that again

3911

06:22:47,040 --> 06:22:55,128

[Applause]

3912

06:22:59,510 --> 06:22:57,170

we'll have you guys try working on this

3913

06:23:02,750 --> 06:22:59,520

for five or six more minutes and then

3914

06:23:02,760 --> 06:23:07,070

okay

3915

06:23:11,330 --> 06:23:09,410

is there a thought for that little lip

3916

06:23:13,010 --> 06:23:11,340

to go into on the right side can we

3917

06:23:15,010 --> 06:23:13,020

think

3918

06:23:18,110 --> 06:23:15,020

this is

3919

06:23:18,830 --> 06:23:18,120

about five it looks like it's engaged

3920

06:23:21,490 --> 06:23:18,840

about that

3921

06:23:24,410 --> 06:23:21,500

[Applause]

3922

06:23:27,948 --> 06:23:24,420

doesn't go in

3923

06:23:31,670 --> 06:23:27,958

I'll be quiche I'm wondering if that mli

3924

06:23:37,190 --> 06:23:31,680

on the left side is in the way left or

3925

06:23:42,530 --> 06:23:40,190

okay so uh you want me to

3926

06:23:45,490 --> 06:23:42,540

remove the MRI

3927

06:23:49,250 --> 06:23:45,500

and try that

3928

06:23:51,650 --> 06:23:49,260

yeah if you're able to peel up that Moi

3929

06:23:53,810 --> 06:23:51,660

a little bit on the right side there's a

3930

06:23:56,150 --> 06:23:53,820

gap

3931

06:23:57,830 --> 06:23:56,160

exactly yep

3932

06:24:01,368 --> 06:23:57,840

and we'll just get that out of the way

3933

06:24:01,378 --> 06:24:06,788

and also the left side

3934

06:24:12,650 --> 06:24:09,590

yeah I concur with that based on what

3935

06:24:15,708 --> 06:24:12,660

I've seen in your in your view stand by

3936

06:24:23,330 --> 06:24:15,718

and we'll figure something out okay

3937

06:24:28,010 --> 06:24:26,090

you can peel up the left side of the mli

3938

06:24:30,230 --> 06:24:28,020

as well and try to get that out of the

3939

06:24:30,240 --> 06:24:37,070

okay copy that

3940

06:24:37,080 --> 06:24:44,510

I will thank you don't do

3941

06:24:50,830 --> 06:24:47,150

no it is it is

3942

06:25:05,690 --> 06:24:53,048

let me

3943

06:25:18,650 --> 06:25:07,128

I think just checking in how you doing

3944

06:25:18,660 --> 06:25:45,948

okay

3945

06:25:45,958 --> 06:25:55,250

but unfortunately you know George

3946

06:25:59,750 --> 06:25:57,170

that looks like a good move that you

3947

06:26:08,448 --> 06:26:03,170

we'll give it one more try if you can go

3948

06:26:14,628 --> 06:26:11,690

and then push in on the left side if

3949

06:26:18,590 --> 06:26:14,638

Duke can apply some Force as well

3950

06:26:24,048 --> 06:26:20,448

I know that telescoping feature is

3951

06:26:24,058 --> 06:26:32,270

okay you can release the force okay

3952

06:26:42,730 --> 06:26:34,510

okay

3953

06:26:48,410 --> 06:26:46,010

where your right hand was just then see

3954

06:26:50,570 --> 06:26:48,420

if you can flip that back yeah it's not

3955

06:26:55,490 --> 06:26:50,580

in the way

3956

06:27:06,128 --> 06:26:58,070

I'll put it back

3957

06:27:11,570 --> 06:27:09,948

for the right side to engage on the back

3958

06:27:16,030 --> 06:27:11,580

canister

3959

06:27:16,040 --> 06:27:27,890

okay all right thank you

3960

06:27:33,170 --> 06:27:28,930

okay

3961

06:27:33,180 --> 06:27:48,650

it's enough space or something

3962

06:27:55,730 --> 06:27:52,490

do you have a haircut here

3963

06:27:58,070 --> 06:27:55,740

not quite a future

3964

06:27:59,448 --> 06:27:58,080
you're a little bit excited to your

3965

06:28:01,070 --> 06:27:59,458
right

3966

06:28:03,010 --> 06:28:01,080
that side pad

3967

06:28:06,410 --> 06:28:03,020
how about now

3968

06:28:09,350 --> 06:28:06,420
you see that negative we're probably

3969

06:28:10,910 --> 06:28:09,360
gonna have you pull off of this task and

3970

06:28:14,570 --> 06:28:10,920
we'll just put this strut back in the

3971

06:28:14,580 --> 06:28:23,750
okay

3972

06:28:28,490 --> 06:28:26,570
negative Duke

3973

06:28:30,410 --> 06:28:28,500
what we're going to have you do is

3974

06:28:32,510 --> 06:28:30,420
compress the mid strut and put it back

3975

06:28:34,190 --> 06:28:32,520
on your brt and we're going to work a

3976

06:28:37,070 --> 06:28:34,200

forward plan from here we'll need to do

3977

06:28:39,890 --> 06:28:37,080

some rearranging koichi meanwhile if you

3978

06:28:42,590 --> 06:28:39,900

could take some pictures of that

3979

06:28:44,810 --> 06:28:42,600

location uh just get the left side and

3980

06:28:47,990 --> 06:28:44,820

the right side and all angles that

3981

06:28:48,000 --> 06:28:55,970

copy that

3982

06:28:59,800 --> 06:28:58,490

what were you trying to say if you say

3983

06:29:04,690 --> 06:28:59,810

that uh

3984

06:29:04,700 --> 06:29:12,110

to me

3985

06:29:16,208 --> 06:29:13,430

Francis

3986

06:29:22,050 --> 06:29:16,218

on this side I don't always

3987

06:29:22,060 --> 06:29:32,990

[Music]

3988

06:29:33,000 --> 06:29:36,708

this

3989

06:29:36,718 --> 06:29:46,970

is different than that the other side

3990

06:29:55,670 --> 06:29:49,610

yeah we copy everything quick hand over

3991

06:29:59,628 --> 06:29:58,070

so we're in another Handover period

3992

06:30:01,548 --> 06:29:59,638

um now getting my views from the inside

3993

06:30:04,250 --> 06:30:01,558

of the International Space Station

3994

06:30:05,208 --> 06:30:04,260

flight control room a quick recap

3995

06:30:07,368 --> 06:30:05,218

um there's a little bit of

3996

06:30:10,490 --> 06:30:07,378

troubleshooting on that left middle

3997

06:30:13,250 --> 06:30:10,500

strut it didn't seem too soft dock

3998

06:30:15,708 --> 06:30:13,260

properly to that side pad on the Mast

3999

06:30:18,650 --> 06:30:15,718

canister for them to get a really good

4000

06:30:21,708 --> 06:30:18,660

secure latch to it and allow them to

4001
06:30:24,048 --> 06:30:21,718
drive the bolts so what the teams are

4002
06:30:27,650 --> 06:30:24,058
deciding to do now is they're going to

4003
06:30:31,070 --> 06:30:27,660
Stow that middle left strut and and

4004
06:30:32,948 --> 06:30:31,080
address the installation at a later date

4005
06:30:35,330 --> 06:30:32,958
in the meantime

4006
06:30:37,250 --> 06:30:35,340
koichiwakata is taking photos to allow

4007
06:30:38,690 --> 06:30:37,260
the ground teams to assess and

4008
06:30:40,430 --> 06:30:38,700
troubleshoot and come up with

4009
06:30:41,868 --> 06:30:40,440
recommendations so they can address it

4010
06:30:44,390 --> 06:30:41,878
the next time they're out there to

4011
06:30:46,250 --> 06:30:44,400
install it but it looks like uh they'll

4012
06:30:49,368 --> 06:30:46,260
be just leaving it in the configuration

4013
06:30:51,708 --> 06:30:49,378

with the upper triangle the right middle

4014

06:30:54,830 --> 06:30:51,718

and right lower strut and then the left

4015

06:30:57,470 --> 06:30:54,840

lower strut and then they'll just leave

4016

06:31:00,170 --> 06:30:57,480

um I'm Gonna Leave the middle uh the

4017

06:31:13,390 --> 06:31:00,180

left middle strut off for uh this

4018

06:31:19,010 --> 06:31:17,150

big picture here we're gonna wrap up uh

4019

06:31:22,250 --> 06:31:19,020

we need to get into some cleanup steps

4020

06:31:24,770 --> 06:31:22,260

and get you guys back inside so what we

4021

06:31:27,288 --> 06:31:24,780

want you to do is Duke you'll compress

4022

06:31:29,208 --> 06:31:27,298

that mid strut put it on your brt

4023

06:31:31,070 --> 06:31:29,218

get it back in the strut bag that's

4024

06:31:32,990 --> 06:31:31,080

straps two and three

4025

06:31:34,910 --> 06:31:33,000

koichi you can close out those pictures

4026
06:31:37,970 --> 06:31:34,920
and then we'll be having you help with

4027
06:31:37,980 --> 06:31:41,628
okay copy that

4028
06:31:41,638 --> 06:32:04,250
okay

4029
06:32:04,260 --> 06:32:12,770
and then look

4030
06:32:12,780 --> 06:32:17,990
more

4031
06:32:23,690 --> 06:32:21,170
awesome thank you dude I have a second

4032
06:32:26,208 --> 06:32:23,700
process back on my DRT

4033
06:32:28,548 --> 06:32:26,218
I'm gonna pop out of days here for um

4034
06:32:31,128 --> 06:32:28,558
copy that Duke

4035
06:32:33,410 --> 06:32:31,138
and

4036
06:32:36,530 --> 06:32:33,420
once you have that on your brt you'll

4037
06:32:41,208 --> 06:32:38,390
one other thing we want to think about

4038
06:32:44,150 --> 06:32:41,218

is the right upper strut that still

4039

06:32:45,770 --> 06:32:44,160

needs the mli covering M13 and M14 so

4040

06:32:47,628 --> 06:32:45,780

we'll work a forward plan for that but

4041

06:32:51,170 --> 06:32:47,638

if you guys have suggestions based on

4042

06:32:55,190 --> 06:32:52,628

okay

4043

06:32:58,368 --> 06:32:55,200

there's 15 covers right now even though

4044

06:32:58,378 --> 06:33:04,610

checking

4045

06:33:15,190 --> 06:33:07,430

yeah a firm Duke if you can do that that

4046

06:33:15,200 --> 06:33:19,490

right here

4047

06:33:28,368 --> 06:33:22,850

we'll have you do the right upper mli to

4048

06:33:41,280 --> 06:33:29,930

okay

4049

06:33:41,290 --> 06:33:46,310

[Music]

4050

06:33:54,288 --> 06:33:49,010

yes Duke we will want the mli over those

4051

06:33:54,298 --> 06:34:03,510

okay so uh could you say again

4052

06:34:03,520 --> 06:34:14,390

[Music]

4053

06:34:14,400 --> 06:34:20,690

us

4054

06:34:26,810 --> 06:34:23,150

I think Gucci Before you depart if you

4055

06:34:28,610 --> 06:34:26,820

can tuck that mli a little bit better

4056

06:34:39,350 --> 06:34:28,620

just make sure that everything's covered

4057

06:34:44,510 --> 06:34:41,448

but he was like that though as you can

4058

06:34:46,610 --> 06:34:44,520

see this uh kind of velcro was already

4059

06:34:49,490 --> 06:34:46,620

exposed so I think this is the initial

4060

06:34:53,750 --> 06:34:51,890

we copy Gucci concur with that you can

4061

06:35:02,270 --> 06:34:53,760

head to the right upper strut work on

4062

06:35:07,610 --> 06:35:05,750

so uh to go through the right upper

4063

06:35:17,208 --> 06:35:07,620

struts

4064

06:35:21,830 --> 06:35:20,448

Gucci will have you just backtrack the

4065

06:35:26,150 --> 06:35:21,840

way that you got there in the first

4066

06:35:30,350 --> 06:35:28,190

about right up excuse me not the left

4067

06:35:34,010 --> 06:35:30,360

the right side okay yeah correct yeah

4068

06:35:36,350 --> 06:35:34,020

the right side yep yeah yeah sorry I

4069

06:35:38,930 --> 06:35:36,360

thought he was a left side okay copy

4070

06:35:42,708 --> 06:35:38,940

that so Xena do you want me to roll this

4071

06:35:49,010 --> 06:35:42,718

APF all over so I can get this MRI on

4072

06:35:52,600 --> 06:35:50,868

or you're gonna have him translate on

4073

06:36:09,650 --> 06:35:52,610

the right extra checking Duke

4074

06:36:09,660 --> 06:36:15,490

foreign

4075

06:36:15,500 --> 06:36:40,910

that mid strut back and the strut bag

4076
06:38:50,030 --> 06:37:10,850
foreign

4077
06:38:50,040 --> 06:39:11,690
don't forget

4078
06:39:11,700 --> 06:39:23,330
[Applause]

4079
06:39:30,770 --> 06:39:26,448
okay Gina the mlis that you want to work

4080
06:39:30,780 --> 06:39:41,270
Luigi great work

4081
06:39:46,070 --> 06:39:44,270
and Duke for you for that uh mid-stret

4082
06:39:49,490 --> 06:39:46,080
back in the strut bag that'll be strap

4083
06:39:49,500 --> 06:40:18,170
seven

4084
06:40:25,368 --> 06:40:21,890
oh Athena can I just uh cover the uh

4085
06:40:31,490 --> 06:40:25,378
those M13 and 14 volts fpvd yeah and 24

4086
06:40:40,368 --> 06:40:33,830
yeah we need the whole strut to be

4087
06:40:47,208 --> 06:40:44,628
so a quick recap uh what Kata and man uh

4088
06:40:49,490 --> 06:40:47,218

both working in tandem for cleaning up

4089

06:40:52,910 --> 06:40:49,500

their work site man is working on

4090

06:40:55,850 --> 06:40:52,920

putting that left metal strut back in

4091

06:40:58,850 --> 06:40:55,860

the strut bag uh and stowing it to be

4092

06:41:01,730 --> 06:40:58,860

installed at a later date and wakata is

4093

06:41:03,350 --> 06:41:01,740

over on the right strut side working on

4094

06:41:05,628 --> 06:41:03,360

the multi-layer insulation and making

4095

06:41:06,948 --> 06:41:05,638

sure that the insulation is covering

4096

06:41:09,170 --> 06:41:06,958

some of the bolts that they were working

4097

06:41:11,448 --> 06:41:09,180

on today Luigi once you get that ammo

4098

06:41:12,470 --> 06:41:11,458

and these are both uh over closeout

4099

06:41:14,810 --> 06:41:12,480

duties

4100

06:41:27,250 --> 06:41:14,820

you'll also want to install two wire

4101
06:41:31,910 --> 06:41:29,868
and Duke for you after you get that mid

4102
06:41:35,330 --> 06:41:31,920
strut stove we'll want you to translate

4103
06:41:48,230 --> 06:41:35,340
the apfr and grab the PGT and torque

4104
06:41:48,240 --> 06:42:04,390
foreign

4105
06:42:08,990 --> 06:42:06,708
ERS for you guys right now we're at five

4106
06:42:11,330 --> 06:42:09,000
and a half hours pet our limiting

4107
06:42:13,788 --> 06:42:11,340
consumable is still medox but we've got

4108
06:42:17,090 --> 06:42:13,798
a little over seven hours of pet time

4109
06:42:18,948 --> 06:42:17,100
there so we just want you guys to get

4110
06:42:21,350 --> 06:42:18,958
everything in a good config to leave it

4111
06:42:22,910 --> 06:42:21,360
will be coming back out for this mod kit

4112
06:42:24,770 --> 06:42:22,920
but we'll be

4113
06:42:27,708 --> 06:42:24,780

into cleanup and then getting you guys

4114

06:42:27,718 --> 06:42:44,410

okay

4115

06:42:51,708 --> 06:42:48,048

that covers the M24

4116

06:42:55,010 --> 06:42:51,718

go far so that the analyzer that covers

4117

06:43:04,070 --> 06:42:55,020

the M13 and 14 goes first

4118

06:43:13,788 --> 06:43:07,670

there's no specified order guichi

4119

06:43:17,990 --> 06:43:15,470

dude I'm thinking about putting the

4120

06:43:20,090 --> 06:43:18,000

strut in the middle of the bag if I put

4121

06:43:22,128 --> 06:43:20,100

the end where it came out

4122

06:43:23,810 --> 06:43:22,138

uh I think that might be a little more

4123

06:43:46,610 --> 06:43:23,820

like symmetrical to be better do you

4124

06:43:50,510 --> 06:43:48,010

foreign

4125

06:43:53,570 --> 06:43:50,520

there actually before we have you

4126
06:43:56,150 --> 06:43:53,580
grabbing that uh PGT and torque wrench

4127
06:43:58,850 --> 06:43:56,160
from the apfr we'll have you just bundle

4128
06:44:00,708 --> 06:43:58,860
up that strut bag as low profile as

4129
06:44:09,250 --> 06:44:00,718
possible so kind of burrito it around

4130
06:44:14,090 --> 06:44:11,390
yeah they'll be going back in the cable

4131
06:44:44,990 --> 06:44:14,100
bag eventually

4132
06:44:49,490 --> 06:44:47,628
Duke for that strut whatever works best

4133
06:44:51,650 --> 06:44:49,500
for you you really only need one of

4134
06:44:53,868 --> 06:44:51,660
those straps add another one if it helps

4135
06:44:55,850 --> 06:44:53,878
hold it in place for bundling off

4136
06:45:31,548 --> 06:44:55,860
but it doesn't need to be pretty just

4137
06:45:31,558 --> 06:46:26,030
stuff you do that sounds great

4138
06:46:26,040 --> 06:46:31,090

foreign

4139

06:46:37,310 --> 06:46:33,468

tie right where your hand just was to

4140

06:46:37,320 --> 06:46:44,570

so two uh

4141

06:46:44,580 --> 06:46:59,448

it works

4142

06:46:59,458 --> 06:47:50,468

foreign

4143

06:47:50,478 --> 06:47:55,750

little ceilings

4144

06:48:01,670 --> 06:47:58,510

down yeah

4145

06:48:03,770 --> 06:48:01,680

that's totally fine and I think we're

4146

06:48:06,590 --> 06:48:03,780

actually going to have you uh leave this

4147

06:48:08,570 --> 06:48:06,600

drop back as is and have you go work

4148

06:48:11,990 --> 06:48:08,580

tool gathered for the cable bag but

4149

06:48:15,708 --> 06:48:14,150

okay

4150

06:48:20,270 --> 06:48:15,718

try to get a look down while you're

4151
06:48:20,280 --> 06:48:23,948
yeah

4152
06:48:31,610 --> 06:48:27,948
between the color bolts and uh and 24

4153
06:48:31,620 --> 06:48:36,200
that looks great that's in a good spot

4154
06:48:36,210 --> 06:48:40,128
[Applause]

4155
06:48:40,138 --> 06:48:49,930
take three points here

4156
06:48:49,940 --> 06:49:08,990
yeah you'll be exactly that

4157
06:49:09,000 --> 06:49:12,670
is

4158
06:49:19,968 --> 06:49:15,770
now we've been watching on heca Duke

4159
06:49:22,968 --> 06:49:19,978
I think with that we will have you leave

4160
06:49:22,978 --> 06:49:26,930
and then uh

4161
06:49:26,940 --> 06:49:31,910
okay copy

4162
06:49:37,310 --> 06:49:34,270
that is crazy

4163
06:49:40,310 --> 06:49:37,320

that looks great Duke with that we can

4164

06:49:42,890 --> 06:49:40,320

have you translate to the apfr you'll

4165

06:49:44,448 --> 06:49:42,900

retrieve the PGT and torque wrench and

4166

06:49:48,288 --> 06:49:44,458

then bring those to the cable bag and

4167

06:49:48,298 --> 06:50:31,490

foreign

4168

06:50:37,190 --> 06:50:35,090

that looks great koichi with that you

4169

06:50:39,590 --> 06:50:37,200

can finish up there we'll have you

4170

06:50:42,110 --> 06:50:39,600

translate to the strut bag

4171

06:50:44,628 --> 06:50:42,120

you're going to be finishing folding the

4172

06:50:47,150 --> 06:50:44,638

strut bag uh make it low profile enough

4173

06:50:49,548 --> 06:50:47,160

for you to take it back inside you'll be

4174

06:50:51,820 --> 06:50:49,558

stowing it on your brt and then

4175

06:51:00,890 --> 06:50:51,830

translating to the Anchor hooks

4176

06:51:06,230 --> 06:51:03,468

heavy uh finish this up and then I'll

4177

06:51:12,708 --> 06:51:06,240

translate down so that I can be clear I

4178

06:51:17,628 --> 06:51:14,868

that's it and I'm gonna be out forward

4179

06:51:21,670 --> 06:51:17,638

or imported you so okay I will still

4180

06:51:25,430 --> 06:51:21,680

hear them after you clear okay yeah

4181

06:51:34,510 --> 06:51:28,250

but it was kind of routing

4182

06:51:45,890 --> 06:51:37,430

should be better

4183

06:51:45,900 --> 06:51:56,750

uh it should be good yeah okay yeah

4184

06:52:04,090 --> 06:51:59,868

okay I'll just stay here I'm very clear

4185

06:52:06,368 --> 06:52:04,100

of the safety center of my thank you

4186

06:52:08,510 --> 06:52:06,378

is

4187

06:52:10,310 --> 06:52:08,520

it okay

4188

06:52:13,030 --> 06:52:10,320

stop you duke

4189

06:52:15,170 --> 06:52:13,040

and as you pitched forward just then

4190

06:52:17,868 --> 06:52:15,180

koichi's safety tether went between your

4191

06:52:24,110 --> 06:52:17,878

legs so just be aware of that

4192

06:52:28,250 --> 06:52:25,548

great

4193

06:52:30,610 --> 06:52:29,628

all right then with that I would

4194

06:52:32,510 --> 06:52:30,620

translate

4195

06:52:36,670 --> 06:52:32,520

I'm still here

4196

06:52:55,968 --> 06:52:38,930

all right

4197

06:53:01,610 --> 06:52:59,930

okay I've got it um coffee and Duke if

4198

06:53:03,468 --> 06:53:01,620

you can reach it just fold that Ingress

4199

06:53:06,650 --> 06:53:03,478

Aid down so that we can leave the apfr

4200

06:53:06,660 --> 06:53:12,010

we're gonna leave it okay

4201
06:53:17,868 --> 06:53:14,990
for your uh

4202
06:53:19,670 --> 06:53:17,878
sleeping okay copy we'll track that

4203
06:53:21,530 --> 06:53:19,680
and Duke we can either have you fold

4204
06:53:30,650 --> 06:53:21,540
that interstate down or koichi will

4205
06:53:30,660 --> 06:54:27,110
okay I'm right here

4206
06:54:27,120 --> 06:54:30,590
down

4207
06:54:35,030 --> 06:54:32,390
copy Duke

4208
06:54:36,468 --> 06:54:35,040
and koichi just Trend yourself toward

4209
06:54:39,890 --> 06:54:36,478
the mask canister so you're not

4210
06:54:39,900 --> 06:54:50,810
copy that

4211
06:54:50,820 --> 06:54:54,110
better

4212
06:54:54,120 --> 06:55:01,968
yes you are okay

4213
06:55:06,170 --> 06:55:04,010

so a quick review

4214

06:55:09,770 --> 06:55:06,180

um the two astronauts Nicole Mann and

4215

06:55:11,270 --> 06:55:09,780

koichiwakata uh out at the outside of

4216

06:55:13,850 --> 06:55:11,280

the International Space Station have

4217

06:55:16,190 --> 06:55:13,860

installed several of the struts needed

4218

06:55:18,530 --> 06:55:16,200

to construct the modification kit on the

4219

06:55:20,570 --> 06:55:18,540

1A Channel they were not able to

4220

06:55:22,010 --> 06:55:20,580

successfully install the left middle

4221

06:55:25,190 --> 06:55:22,020

strut

4222

06:55:27,650 --> 06:55:25,200

um the side pad on the Mast canister did

4223

06:55:29,750 --> 06:55:27,660

not engage properly so right now they're

4224

06:55:31,968 --> 06:55:29,760

working on cleanup steps they're stowing

4225

06:55:34,910 --> 06:55:31,978

a lot of their tools and including the

4226
06:55:36,890 --> 06:55:34,920
left middle strut and making sure that

4227
06:55:39,948 --> 06:55:36,900
the multi-layer insulation that white

4228
06:55:42,350 --> 06:55:39,958
fabric that surrounds the mounting

4229
06:55:43,850 --> 06:55:42,360
platform isn't a good configuration it

4230
06:55:45,708 --> 06:55:43,860
is going to maintain the Integrity of

4231
06:55:47,868 --> 06:55:45,718
the hardware uh Emma Once everything

4232
06:55:50,448 --> 06:55:47,878
looks good the two will translate or

4233
06:55:53,690 --> 06:55:50,458
move back to the airlock tend it toward

4234
06:55:56,350 --> 06:55:53,700
the lower strut there specifically the

4235
06:56:04,368 --> 06:55:58,788
yeah so the the other side from where

4236
06:56:11,208 --> 06:56:07,010
you got the uh right forward shut you're

4237
06:56:16,250 --> 06:56:14,390
for the left floor struck yeah sorry

4238
06:56:18,110 --> 06:56:16,260

kuichi that's going to be the left lower

4239

06:56:19,610 --> 06:56:18,120

so actually not the area where you are

4240

06:56:22,070 --> 06:56:19,620

now you'll be translating to the other

4241

06:56:34,128 --> 06:56:22,080

side okay

4242

06:56:34,138 --> 06:57:04,368

foreign

4243

06:57:04,378 --> 06:57:13,610

checking Gucci

4244

06:57:17,750 --> 06:57:15,590

yeah koichi unfortunately you'll need to

4245

06:57:20,690 --> 06:57:17,760

go down and around to the other side and

4246

06:57:20,700 --> 06:57:26,030

okay I'll be back

4247

06:57:29,930 --> 06:57:28,430

try to see if you can reach we just

4248

06:57:31,430 --> 06:57:29,940

can't have you translating on the mod

4249

06:57:33,048 --> 06:57:31,440

kit since we don't have the collar bolts

4250

06:57:37,030 --> 06:57:33,058

torqued

4251
06:57:43,548 --> 06:57:40,670
around the VGA right

4252
06:57:43,558 --> 06:57:55,490
okay yeah I can translate this way

4253
06:57:59,810 --> 06:57:57,948
because I just could not translate on

4254
06:58:03,590 --> 06:57:59,820
the uh the market so I had to go around

4255
06:58:03,600 --> 06:58:31,310
this is fine yeah

4256
06:58:43,810 --> 06:58:34,070
have to take that back

4257
06:58:43,820 --> 06:59:16,730
this this

4258
06:59:21,230 --> 06:59:18,890
dude first we'll have you grab the mutt

4259
06:59:22,968 --> 06:59:21,240
end effector with the GoPro show that in

4260
06:59:24,530 --> 06:59:22,978
the cable bag and then yes you're going

4261
06:59:27,230 --> 06:59:24,540
to be putting the cable back on your brt

4262
07:00:19,010 --> 06:59:27,240
and getting ready to head in

4263
07:00:19,020 --> 07:00:28,128

ah

4264

07:00:59,030 --> 07:00:38,090

a

4265

07:01:02,090 --> 07:00:59,040

on the lower set you know for three

4266

07:01:03,288 --> 07:01:02,100

points same as the right side

4267

07:01:05,990 --> 07:01:03,298

yeah

4268

07:01:07,968 --> 07:01:06,000

koichi big picture that uh trunium pin

4269

07:01:10,190 --> 07:01:07,978

that your right hand is on right now we

4270

07:01:11,990 --> 07:01:10,200

were worried that the Cable Bundle might

4271

07:01:15,110 --> 07:01:12,000

snag on that when we go to rotate the

4272

07:01:16,850 --> 07:01:15,120

BGA uh snag on that or on the apfr okay

4273

07:01:18,708 --> 07:01:16,860

so we just want to tend it as close as

4274

07:01:22,128 --> 07:01:18,718

possible to that lower strut just to

4275

07:01:22,138 --> 07:01:26,410

okay all right

4276
07:01:31,910 --> 07:01:30,590
this is securing one side so I will

4277
07:01:33,530 --> 07:01:31,920
apply

4278
07:01:36,350 --> 07:01:33,540
[Music]

4279
07:01:39,770 --> 07:01:36,360
um one more uh one more time around the

4280
07:01:42,530 --> 07:01:39,780
handrail on the uh

4281
07:01:45,288 --> 07:01:42,540
the one alpha left side bundle that

4282
07:01:48,350 --> 07:01:45,298
sounds great Lucci good plan just get

4283
07:01:50,868 --> 07:01:48,360
that big loop of the bundle okay close

4284
07:01:53,330 --> 07:01:50,878
tied into that left lower strut as

4285
07:01:53,340 --> 07:02:01,490
exists

4286
07:02:01,500 --> 07:02:05,208
yeah you can use the existing one

4287
07:02:05,218 --> 07:03:04,610
copy that

4288
07:03:04,620 --> 07:03:29,460

foreign

4289

07:03:29,470 --> 07:03:35,208

[Music]

4290

07:03:35,218 --> 07:03:40,128

to the uh the handrail the lower strap

4291

07:03:44,048 --> 07:03:42,410

copy koichi I see that in your heck of

4292

07:03:46,548 --> 07:03:44,058

view we'll make sure that everybody

4293

07:03:48,830 --> 07:03:46,558

agrees that that looks really good to me

4294

07:03:50,690 --> 07:03:48,840

and I'll have some big picture words for

4295

07:04:48,590 --> 07:03:50,700

you in just a second about our final

4296

07:04:48,600 --> 07:04:52,030

foreign

4297

07:04:57,830 --> 07:04:54,708

we'll have you actually add one more

4298

07:04:59,810 --> 07:04:57,840

wire tie looks like the loop of that

4299

07:05:01,850 --> 07:04:59,820

Cable Bundle is still hanging down a bit

4300

07:05:04,430 --> 07:05:01,860

towards that trunnion pin and we're not

4301
07:05:06,170 --> 07:05:04,440
convinced that it will clear if you see

4302
07:05:07,968 --> 07:05:06,180
that Loop that's closest to your right

4303
07:05:09,468 --> 07:05:07,978
hand on the trunnion pin right now we

4304
07:05:13,090 --> 07:05:09,478
just want to get that up and out of the

4305
07:05:13,100 --> 07:05:17,208
is probably the easiest

4306
07:05:17,218 --> 07:05:37,010
okay copy that I will do that

4307
07:05:41,868 --> 07:05:39,770
yeah kuichi I think if you can get a

4308
07:05:44,390 --> 07:05:41,878
wire tie around that just like you have

4309
07:05:46,548 --> 07:05:44,400
your hand doing right now and then take

4310
07:05:51,010 --> 07:05:46,558
it up to the tether point on the

4311
07:05:57,650 --> 07:05:53,208
is here

4312
07:06:05,030 --> 07:06:01,788
okay and uh all right

4313
07:06:08,690 --> 07:06:05,040

I have a short while you die in Minot

4314

07:06:19,010 --> 07:06:08,700

I not give me enough

4315

07:06:27,170 --> 07:06:23,330

killed by a Thai has not given us

4316

07:06:30,590 --> 07:06:27,180

plans to get there yeah

4317

07:06:34,030 --> 07:06:30,600

copy that kuichi if you're able to just

4318

07:06:36,770 --> 07:06:34,040

kind of feed it through the tether Point

4319

07:06:38,510 --> 07:06:36,780

uh and then the

4320

07:06:40,310 --> 07:06:38,520

the wire tie doesn't necessarily have to

4321

07:06:42,708 --> 07:06:40,320

loop back onto itself so you could have

4322

07:06:44,868 --> 07:06:42,718

one twist up top on the tether point and

4323

07:06:46,610 --> 07:06:44,878

then the other end going down to the

4324

07:06:48,110 --> 07:06:46,620

Cable Bundle I'm not sure that's enough

4325

07:06:49,910 --> 07:06:48,120

length

4326
07:06:53,930 --> 07:06:49,920
let me work an alternate plan for you

4327
07:06:53,940 --> 07:07:05,628
foreign

4328
07:07:09,830 --> 07:07:08,270
Duke let's have you work on the strut

4329
07:07:12,048 --> 07:07:09,840
bag see if you can get that any more

4330
07:07:14,090 --> 07:07:12,058
folded and ready to go for koichi to

4331
07:07:26,628 --> 07:07:14,100
eventually put that on his brt and then

4332
07:07:32,750 --> 07:07:28,150
okay

4333
07:07:34,430 --> 07:07:32,760
can I try to use my short wire tie from

4334
07:07:41,330 --> 07:07:34,440
this

4335
07:07:47,390 --> 07:07:45,048
hey firm kuichi I think if you take them

4336
07:07:49,250 --> 07:07:47,400
off the wire tie that you just added a

4337
07:07:52,788 --> 07:07:49,260
couple steps ago

4338
07:07:55,190 --> 07:07:52,798

and then move the whole thing up

4339

07:07:58,128 --> 07:07:55,200

or sorry the uh the one that was already

4340

07:08:00,288 --> 07:07:58,138

the existing wire tie

4341

07:08:03,048 --> 07:08:00,298

undo it right where you just added

4342

07:08:05,868 --> 07:08:03,058

twists and then move the whole bundle

4343

07:08:10,670 --> 07:08:05,878

further up that lower strut as close to

4344

07:08:14,448 --> 07:08:12,410

see if you can get that wire tied to

4345

07:08:16,788 --> 07:08:14,458

kind of hug the whole Cable Bundle to

4346

07:08:22,310 --> 07:08:16,798

the strut

4347

07:08:22,320 --> 07:08:35,628

copy six Duke

4348

07:08:35,638 --> 07:08:43,368

gosh

4349

07:08:47,750 --> 07:08:45,590

big picture guys we're just shy of six

4350

07:08:49,730 --> 07:08:47,760

hours on pet here you're limiting

4351

07:08:52,430 --> 07:08:49,740

consumable still has a little over seven

4352

07:08:53,868 --> 07:08:52,440

hours for medox so you're doing a good

4353

07:08:57,230 --> 07:08:53,878

job keep it up with the cleanup and

4354

07:08:57,240 --> 07:09:03,048

copy that

4355

07:09:06,650 --> 07:09:04,548

you know what this is what you're

4356

07:09:11,448 --> 07:09:06,660

talking about so I'm gonna because

4357

07:09:37,850 --> 07:09:13,010

activities

4358

07:09:44,090 --> 07:09:40,510

a quick review of the work done so far

4359

07:09:45,830 --> 07:09:44,100

right now the astronauts are doing some

4360

07:09:48,368 --> 07:09:45,840

cleanup duties during an orbital night

4361

07:09:50,510 --> 07:09:48,378

time the space station is flying 264

4362

07:09:53,690 --> 07:09:50,520

statue miles

4363

07:09:56,030 --> 07:09:53,700

um over Western Europe right now

4364

07:09:58,548 --> 07:09:56,040

uh they're just making sure their work

4365

07:10:00,708 --> 07:09:58,558

site is in a good configuration so it

4366

07:10:02,930 --> 07:10:00,718

can be addressed during a future Space

4367

07:10:04,310 --> 07:10:02,940

Walk so they're using wire ties to make

4368

07:10:05,868 --> 07:10:04,320

sure the cables are secure they're

4369

07:10:08,030 --> 07:10:05,878

checking the multi-layer insulation

4370

07:10:10,250 --> 07:10:08,040

putting their tools away in their

4371

07:10:11,990 --> 07:10:10,260

respective bags just making sure the

4372

07:10:15,708 --> 07:10:12,000

work site over at the 1A power channel

4373

07:10:18,948 --> 07:10:15,718

is is in a good configuration to leave

4374

07:10:21,288 --> 07:10:18,958

it so they can schedule a spacewalk at a

4375

07:10:24,110 --> 07:10:21,298

later time to finish some of the work

4376

07:10:27,770 --> 07:10:24,120

over here they started on the

4377

07:10:29,750 --> 07:10:27,780

construction of the 1A modification kit

4378

07:10:32,448 --> 07:10:29,760

and was not able or they were not able

4379

07:10:34,250 --> 07:10:32,458

to install that left middle strut they

4380

07:10:36,650 --> 07:10:34,260

took some photos of the ground teams can

4381

07:10:39,590 --> 07:10:36,660

assess some of that work and uh figure

4382

07:10:42,230 --> 07:10:39,600

out what steps need to be put into place

4383

07:10:44,390 --> 07:10:42,240

to make sure that they can have a secure

4384

07:10:47,270 --> 07:10:44,400

attachment of that left strut to the

4385

07:10:50,810 --> 07:10:47,280

mass canister and the whole fixture that

4386

07:10:53,330 --> 07:10:50,820

will soon be holding up future irosa or

4387

07:10:56,868 --> 07:10:53,340

International Space Station

4388

07:10:58,610 --> 07:10:56,878

um roll out solar arrays those set to be

4389

07:11:00,590 --> 07:10:58,620

delivered to the International Space

4390

07:11:02,570 --> 07:11:00,600

Station this summer again there are four

4391

07:11:04,128 --> 07:11:02,580

total that are already there on the

4392

07:11:05,270 --> 07:11:04,138

space station installed and providing

4393

07:11:07,190 --> 07:11:05,280

power

4394

07:11:09,170 --> 07:11:07,200

um there they were today during today's

4395

07:11:15,708 --> 07:11:09,180

Space Walk we're working on modification

4396

07:11:20,330 --> 07:11:18,288

which if you could tilt up so that we

4397

07:11:24,410 --> 07:11:20,340

can see the mounting bracket just want

4398

07:11:24,420 --> 07:11:39,770

okay

4399

07:11:44,030 --> 07:11:42,048

Luigi that looks great we are really

4400

07:11:45,890 --> 07:11:44,040

happy with that config with that you can

4401
07:11:48,890 --> 07:11:45,900
leave that work site you'll head back

4402
07:11:49,850 --> 07:11:48,900
toward Duke and help finish up the strut

4403
07:11:51,468 --> 07:11:49,860
bag

4404
07:11:53,868 --> 07:11:51,478
eventually you'll be putting the strut

4405
07:11:56,270 --> 07:11:53,878
bag on your brt

4406
07:11:57,770 --> 07:11:56,280
she'll leave the translation back in and

4407
07:12:01,430 --> 07:11:57,780
you'll follow back to the Anchor Hooks

4408
07:12:01,440 --> 07:12:36,530
do that

4409
07:12:36,540 --> 07:13:00,610
foreign

4410
07:13:00,620 --> 07:13:11,990
[Applause]

4411
07:13:17,628 --> 07:13:14,570
for your hands are being wrong

4412
07:13:19,430 --> 07:13:17,638
I think I think it's up to your judgment

4413
07:13:22,730 --> 07:13:19,440

kuichi is going to be translating back

4414

07:13:25,070 --> 07:13:22,740

in with this on his brt so we'll leave

4415

07:13:33,590 --> 07:13:25,080

it to your encuichi's judgment about

4416

07:13:33,600 --> 07:13:39,430

other end

4417

07:13:43,548 --> 07:13:41,810

perspective yeah I like that plan you

4418

07:13:46,610 --> 07:13:43,558

will be taking it back into the crew

4419

07:13:52,368 --> 07:13:50,288

okay so Luigi um okay

4420

07:13:56,990 --> 07:13:52,378

I'm just going to release it it's still

4421

07:14:01,548 --> 07:13:59,930

so that's one location uh we'll see how

4422

07:14:05,590 --> 07:14:01,558

far I guess before you get here okay

4423

07:14:32,330 --> 07:14:05,600

it's got two locations okay all right

4424

07:14:32,340 --> 07:14:56,288

foreign

4425

07:15:00,890 --> 07:14:59,270

you also have good eyes on your safety

4426
07:15:04,128 --> 07:15:00,900
tether we just want to make sure that

4427
07:15:06,350 --> 07:15:04,138
it's not going back around the Mast

4428
07:15:10,190 --> 07:15:06,360
canister and that you'll be good to head

4429
07:15:16,010 --> 07:15:13,310
I I did not go uh yeah take each other

4430
07:15:20,270 --> 07:15:16,020
it's with me and I'm going to outboard

4431
07:15:24,468 --> 07:15:20,280
to this uh TV grapple fixture area so

4432
07:15:24,478 --> 07:15:59,510
coffee Gucci

4433
07:15:59,520 --> 07:16:16,990
foreign

4434
07:16:22,910 --> 07:16:20,150
we'll have you start heading inboard

4435
07:16:25,788 --> 07:16:22,920
if it helps to both be there together

4436
07:16:27,770 --> 07:16:25,798
well Luigi puts it on his VRT let us

4437
07:16:30,170 --> 07:16:27,780
know but we'd like to prioritize just

4438
07:16:31,788 --> 07:16:30,180

getting used back in board we'll get

4439

07:16:35,708 --> 07:16:31,798

that struck back on kuichi's brt and

4440

07:16:39,948 --> 07:16:38,030

okay yeah it doesn't look pretty but

4441

07:16:42,708 --> 07:16:39,958

it's uh I think it's going to be small

4442

07:16:49,330 --> 07:16:42,718

enough that it won't give him a problem

4443

07:16:52,730 --> 07:16:50,830

[Music]

4444

07:16:59,590 --> 07:16:52,740

got one

4445

07:17:05,810 --> 07:17:02,868

I'm gonna head um import to the air

4446

07:17:05,820 --> 07:17:08,990

sounds great

4447

07:17:12,968 --> 07:17:11,510

I got your um let me just uh before you

4448

07:17:15,048 --> 07:17:12,978

go more

4449

07:17:20,628 --> 07:17:15,058

packs here so let me just get out of

4450

07:17:26,628 --> 07:17:23,030

we copy all we'll also take a glove and

4451

07:17:26,638 --> 07:17:30,948

very uh easy one

4452

07:17:44,868 --> 07:17:35,330

love the good happy space song

4453

07:17:52,700 --> 07:17:47,690

traffic and coffee Duke for about a

4454

07:17:52,710 --> 07:17:57,968

[Applause]

4455

07:17:57,978 --> 07:18:45,590

let's go down

4456

07:18:45,600 --> 07:18:58,628

foreign

4457

07:19:03,230 --> 07:19:01,730

another uh brief Handover period losing

4458

07:19:04,730 --> 07:19:03,240

that video from the International Space

4459

07:19:08,628 --> 07:19:04,740

Station will be regaining it shortly

4460

07:19:10,548 --> 07:19:08,638

right now wakata and man are both

4461

07:19:11,930 --> 07:19:10,558

um still at the work site uh where

4462

07:19:15,410 --> 07:19:11,940

they've been for the past couple of

4463

07:19:17,150 --> 07:19:15,420

hours now six hours and six minutes into

4464

07:19:18,590 --> 07:19:17,160

today's space walk

4465

07:19:20,448 --> 07:19:18,600

um they've wrapped up their cleanup

4466

07:19:23,090 --> 07:19:20,458

duties really just taking those last

4467

07:19:25,490 --> 07:19:23,100

tools and making sure they're stowed or

4468

07:19:27,048 --> 07:19:25,500

in the case of the strut bag attached to

4469

07:19:28,910 --> 07:19:27,058

their body restraint tether so they can

4470

07:19:31,850 --> 07:19:28,920

tow it back with them but the main

4471

07:19:33,770 --> 07:19:31,860

objective now is to get back to the

4472

07:19:37,190 --> 07:19:33,780

airlock they're going to get back into

4473

07:19:38,690 --> 07:19:37,200

the crew uh the crew lock of the airlock

4474

07:19:40,070 --> 07:19:38,700

this is where

4475

07:19:41,770 --> 07:19:40,080

um they'll close the hatch and

4476
07:19:44,150 --> 07:19:41,780
re-pressurize to

4477
07:19:45,650 --> 07:19:44,160
14.7 psi the pressure of the

4478
07:19:49,250 --> 07:19:45,660
International Space Station and get back

4479
07:19:57,350 --> 07:19:51,890
copy koichi that's great news you can

4480
07:20:05,770 --> 07:19:59,080
okay

4481
07:20:05,780 --> 07:20:10,010
right now

4482
07:20:10,020 --> 07:20:13,090
wait for you

4483
07:20:19,510 --> 07:20:16,968
thank you very long

4484
07:20:24,590 --> 07:20:21,948
we copy that

4485
07:20:26,750 --> 07:20:24,600
and go to your reminder you'll be going

4486
07:21:07,670 --> 07:20:26,760
inboard towards those anchor hooks

4487
07:21:07,680 --> 07:21:18,948
okay

4488
07:21:29,570 --> 07:21:20,570

exactly did you have eyes on your safety

4489

07:21:38,330 --> 07:21:31,968

it's not Tangled on anything it's in

4490

07:21:38,340 --> 07:21:52,610

okay I'll just watch it as I go

4491

07:21:52,620 --> 07:21:57,620

okay I'm headed out okay okay

4492

07:21:57,630 --> 07:22:57,590

[Applause]

4493

07:22:57,600 --> 07:23:18,170

okay I'll just follow you

4494

07:23:18,180 --> 07:24:09,590

foreign

4495

07:24:09,600 --> 07:24:44,570

okay copy that I am not behind you

4496

07:24:44,580 --> 07:24:56,820

foreign

4497

07:25:08,510 --> 07:25:05,410

[Music]

4498

07:25:10,190 --> 07:25:08,520

I think koichi will be able to clear it

4499

07:25:11,690 --> 07:25:10,200

for you so that you don't have to go

4500

07:25:14,270 --> 07:25:11,700

back out for Duke

4501
07:25:21,468 --> 07:25:14,280
and just a reminder you'll be parting at

4502
07:25:21,478 --> 07:25:25,670
okay I'll do that

4503
07:25:39,530 --> 07:25:28,850
let me clear that

4504
07:25:39,540 --> 07:25:54,468
they should be cleared out

4505
07:26:07,910 --> 07:25:58,070
okay

4506
07:26:07,920 --> 07:26:14,690
all right

4507
07:26:18,590 --> 07:26:16,910
let me come a little bit uh outboard

4508
07:26:20,600 --> 07:26:18,600
because my tether pack is right here and

4509
07:26:26,270 --> 07:26:20,610
so it's not okay uh

4510
07:26:26,280 --> 07:26:31,770
okay

4511
07:26:35,930 --> 07:26:33,850
[Applause]

4512
07:26:45,110 --> 07:26:35,940
so let me

4513
07:27:50,530 --> 07:26:50,288

okay

4514

07:28:01,330 --> 07:27:52,968

with uh

4515

07:28:01,340 --> 07:28:08,410

shall I rotate it

4516

07:28:16,490 --> 07:28:10,850

back because the anchors are right by

4517

07:28:16,500 --> 07:28:22,570

[Music]

4518

07:28:22,580 --> 07:28:27,048

let me clear on this side

4519

07:28:27,058 --> 07:28:57,170

foreign

4520

07:29:01,850 --> 07:28:59,090

is this your local

4521

07:29:07,548 --> 07:29:01,860

this is my local here is this the Oasis

4522

07:29:07,558 --> 07:29:20,208

oh yeah yeah

4523

07:29:20,218 --> 07:29:27,650

okay

4524

07:29:47,750 --> 07:29:30,368

nice

4525

07:29:54,530 --> 07:29:50,448

on my left side I should have my I have

4526
07:29:58,330 --> 07:29:54,540
my voice is those are good

4527
07:30:00,128 --> 07:29:58,340
uh yeah that's uh

4528
07:30:04,968 --> 07:30:00,138
yeah

4529
07:30:04,978 --> 07:30:09,890
big fat

4530
07:30:18,770 --> 07:30:12,048
together around your

4531
07:30:18,780 --> 07:30:32,170
oh it should be clear

4532
07:30:37,190 --> 07:30:35,390
another brief lapse in video from the

4533
07:30:38,750 --> 07:30:37,200
International Space Station again all of

4534
07:30:40,670 --> 07:30:38,760
these are just a matter of seconds

4535
07:30:42,948 --> 07:30:40,680
really so we'll be regaining that

4536
07:30:44,628 --> 07:30:42,958
shortly and should hear voice from the

4537
07:30:47,230 --> 07:30:44,638
International Space Station here soon

4538
07:30:49,910 --> 07:30:47,240

boy you were witnessing was uh both

4539

07:30:53,330 --> 07:30:49,920

koichiwakata and Nicole Mann translating

4540

07:30:55,010 --> 07:30:53,340

or moving back to the airlock along the

4541

07:30:56,448 --> 07:30:55,020

way they were making sure that they were

4542

07:30:58,610 --> 07:30:56,458

in a good configuration with their

4543

07:31:00,410 --> 07:30:58,620

tethers that actually keep them anchored

4544

07:31:02,868 --> 07:31:00,420

to the International Space Station as a

4545

07:31:05,208 --> 07:31:02,878

safety precaution so they are just

4546

07:31:06,530 --> 07:31:05,218

making sure that the tethers are where

4547

07:31:08,510 --> 07:31:06,540

they're supposed to be and where they

4548

07:31:09,708 --> 07:31:08,520

expect them to be and they're not

4549

07:31:11,628 --> 07:31:09,718

Tangled

4550

07:31:12,770 --> 07:31:11,638

um so they're working together to just

4551
07:31:14,930 --> 07:31:12,780
make sure those are in a good

4552
07:31:17,628 --> 07:31:14,940
configuration as they continue to work

4553
07:31:21,468 --> 07:31:17,638
their way back to the airline six hours

4554
07:31:23,650 --> 07:31:21,478
18 minutes into today's baseball bat

4555
07:31:27,890 --> 07:31:23,660
that hook up

4556
07:31:31,190 --> 07:31:27,900
okay perfect amazing real clear right

4557
07:31:31,200 --> 07:31:45,920
all right

4558
07:31:45,930 --> 07:31:50,510
[Applause]

4559
07:31:50,520 --> 07:31:58,490
you have a class yet

4560
07:31:58,500 --> 07:32:03,230
okay guys

4561
07:32:03,240 --> 07:32:14,448
okay

4562
07:32:20,708 --> 07:32:17,570
Crystal uh

4563
07:32:29,030 --> 07:32:23,708

which one

4564

07:32:29,040 --> 07:32:32,448

um

4565

07:32:32,458 --> 07:32:38,820

foreign

4566

07:32:38,830 --> 07:32:54,490

[Music]

4567

07:33:00,110 --> 07:32:57,890

tether lock the hook block on block and

4568

07:33:03,070 --> 07:33:00,120

undo the anchor hook in order to clear

4569

07:33:13,250 --> 07:33:03,080

any snacks that you're seeing

4570

07:33:13,260 --> 07:33:17,390

and just make sure I see it

4571

07:33:17,400 --> 07:33:29,750

hook

4572

07:33:29,760 --> 07:33:43,010

okay

4573

07:33:47,570 --> 07:33:45,350

you want my ankles while we're here you

4574

07:33:49,070 --> 07:33:47,580

might as well take it

4575

07:34:02,750 --> 07:33:49,080

okay

4576
07:34:02,760 --> 07:34:07,010
so but the uh

4577
07:34:10,510 --> 07:34:09,410
because I can take it yeah

4578
07:34:16,130 --> 07:34:10,520
just a moment

4579
07:34:19,730 --> 07:34:17,628
[Applause]

4580
07:34:21,890 --> 07:34:19,740
okay my left weight Center is that

4581
07:34:24,910 --> 07:34:21,900
that's true

4582
07:34:28,190 --> 07:34:24,920
take clothes on both sides

4583
07:34:33,410 --> 07:34:28,200
like a block so

4584
07:34:37,070 --> 07:34:35,330
copy we're tracking both hooks are

4585
07:34:39,350 --> 07:34:37,080
locked black on black that's a good load

4586
07:34:56,150 --> 07:34:42,288
okay I'm releasing my uh unlocking my

4587
07:35:03,110 --> 07:35:00,048
engine I just wanted to report the uh my

4588
07:35:07,070 --> 07:35:03,120

CCO on the left side is not working so I

4589

07:35:11,990 --> 07:35:09,708

copy and we'll have you guys stand by

4590

07:35:13,670 --> 07:35:12,000

just one second we want to make sure

4591

07:35:15,410 --> 07:35:13,680

that we really understand this tether

4592

07:35:17,270 --> 07:35:15,420

config that we're in before you send we

4593

07:35:45,788 --> 07:35:17,280

send you anywhere

4594

07:35:45,798 --> 07:35:58,670

take it

4595

07:35:58,680 --> 07:36:07,368

go down

4596

07:36:11,628 --> 07:36:09,830

okay guys with both kuichi's waist

4597

07:36:13,788 --> 07:36:11,638

tether locked

4598

07:36:16,850 --> 07:36:13,798

and Duke's anchor hook locks two

4599

07:36:18,110 --> 07:36:16,860

koichi's waist tether and kuichi's

4600

07:36:20,390 --> 07:36:18,120

anchor hook

4601
07:36:22,190 --> 07:36:20,400
still attached to structure lock on

4602
07:36:24,230 --> 07:36:22,200
block we're good with this config you

4603
07:36:31,208 --> 07:36:24,240
can head inboard Duke and we'll get you

4604
07:36:31,218 --> 07:36:39,260
and I'm going to uh

4605
07:36:39,270 --> 07:36:54,948
[Applause]

4606
07:37:00,650 --> 07:36:57,230
and just to be super clear Duke's

4607
07:37:02,390 --> 07:37:00,660
Creator you'll stay put until Duke is

4608
07:37:04,610 --> 07:37:02,400
safe in the airlock

4609
07:37:06,288 --> 07:37:04,620
and then after she re-establishes that

4610
07:37:09,350 --> 07:37:06,298
road class yep exactly you'll be

4611
07:37:20,090 --> 07:37:09,360
cleaning up the slingshot

4612
07:37:20,100 --> 07:37:26,690
okay

4613
07:37:26,700 --> 07:37:37,030

again

4614

07:37:37,040 --> 07:37:47,628

okay thank you that'll be great

4615

07:37:47,638 --> 07:39:36,708

I'll be following you

4616

07:39:50,390 --> 07:39:41,770

thinking I I already uh put the

4617

07:39:58,968 --> 07:39:52,610

and

4618

07:39:58,978 --> 07:40:17,390

happy Duke

4619

07:40:21,708 --> 07:40:19,430

and koichi we appreciate the get ahead

4620

07:40:24,110 --> 07:40:21,718

but we will have you also uh touch those

4621

07:40:25,548 --> 07:40:24,120

breaks one more time as you head in

4622

07:40:26,930 --> 07:40:25,558

board just to make sure that that's the

4623

07:40:57,530 --> 07:40:26,940

last thing on the cedar cart that you

4624

07:40:57,540 --> 07:41:15,830

foreign

4625

07:41:19,968 --> 07:41:17,930

and Gucci just making sure we'll have

4626
07:41:22,128 --> 07:41:19,978
you stay put right where you are and

4627
07:41:29,930 --> 07:41:22,138
wait until the Duke gets back in the

4628
07:42:49,190 --> 07:41:35,208
y

4629
07:42:49,200 --> 07:43:01,190
foreign

4630
07:43:08,690 --> 07:43:03,830
great work Duke heads up we're at about

4631
07:43:08,700 --> 07:43:15,890
puppy

4632
07:43:19,490 --> 07:43:17,990
in the back of the airlock I'm opening

4633
07:43:23,590 --> 07:43:19,500
the thermal cover

4634
07:43:23,600 --> 07:43:44,090
I'm about to open it

4635
07:43:48,708 --> 07:43:46,430
so right now duke or NASA astronaut

4636
07:43:50,208 --> 07:43:48,718
Nicole Mann has arrived at the airlock

4637
07:43:52,910 --> 07:43:50,218
she's going to open up the thermal cover

4638
07:43:54,530 --> 07:43:52,920

and get it prepared um so she can

4639

07:43:57,590 --> 07:43:54,540

Ingress

4640

07:43:59,868 --> 07:43:57,600

but koichi wakana is standing by with

4641

07:44:02,448 --> 07:43:59,878

the strut bag in tow

4642

07:44:03,830 --> 07:44:02,458

that shark bag has that final strut the

4643

07:44:06,350 --> 07:44:03,840

mid left strut that they're going to be

4644

07:44:09,048 --> 07:44:06,360

bringing back into the airlock with them

4645

07:44:36,770 --> 07:44:09,058

so he's just standing by for now as uh

4646

07:44:36,780 --> 07:44:44,090

okay

4647

07:44:51,110 --> 07:44:47,510

copy that's great news

4648

07:44:53,030 --> 07:44:51,120

koichi you can go ahead and head inward

4649

07:44:55,910 --> 07:44:53,040

you'll pick up your anchor Hook from

4650

07:44:58,730 --> 07:44:55,920

handrail 3011 stow it on your mini

4651
07:45:00,410 --> 07:44:58,740
workstation and translate in you will

4652
07:45:02,448 --> 07:45:00,420
need to press the starboard seater

4653
07:45:05,150 --> 07:45:02,458
breaks and the port Cedar Breaks on your

4654
07:45:05,160 --> 07:45:17,570
copy that they work

4655
07:45:17,580 --> 07:45:20,930
again

4656
07:45:20,940 --> 07:45:38,090
probably do click that plan

4657
07:45:50,930 --> 07:45:42,530
great big incredible twice complete

4658
07:45:55,128 --> 07:45:52,968
and heads up for both of you especially

4659
07:45:57,410 --> 07:45:55,138
Duke right now we were tracking in the

4660
07:45:58,570 --> 07:45:57,420
airlock one of the large small rats that

4661
07:46:01,850 --> 07:45:58,580
strung out

4662
07:46:07,390 --> 07:46:01,860
is locked so that it might be kind of a

4663
07:46:55,100 --> 07:46:24,780

[Music]

4664

07:47:11,590 --> 07:46:57,590

[Applause]

4665

07:47:17,810 --> 07:47:15,350

making his way back to the airlock

4666

07:47:19,968 --> 07:47:17,820

this whole time he's been in the suit

4667

07:47:22,670 --> 07:47:19,978

with red stripes he's got that strut bag

4668

07:47:27,770 --> 07:47:25,730

meanwhile Nicole man call sign Duke

4669

07:47:29,570 --> 07:47:27,780

wearing the suit with no Stripes Luigi

4670

07:47:31,610 --> 07:47:29,580

sorry to bug you just to confirm you did

4671

07:47:35,208 --> 07:47:31,620

hit those Cedar bricks I didn't have

4672

07:47:39,650 --> 07:47:38,270

see the brakes on the uh out the double

4673

07:47:42,490 --> 07:47:39,660

side is down

4674

07:47:42,500 --> 07:48:24,670

shortly perfect thank you

4675

07:48:29,868 --> 07:48:27,830

Duke once you have that cable bag stowed

4676
07:48:32,330 --> 07:48:29,878
on the airlock during extender Rhett

4677
07:48:36,650 --> 07:48:32,340
we'll have you turn off your HEPA and

4678
07:48:36,660 --> 07:48:43,368
okay

4679
07:48:43,378 --> 07:48:59,030
copy thanks so much Gucci

4680
07:49:05,030 --> 07:49:02,030
now A good view of the airlock

4681
07:49:08,330 --> 07:49:05,040
that's astronaut Nicole Mann making her

4682
07:49:12,288 --> 07:49:08,340
way into the airlock after getting a go

4683
07:49:15,830 --> 07:49:14,150
very shortly we'll be seeing

4684
07:49:18,888 --> 07:49:15,840
koichiwakata

4685
07:49:22,910 --> 07:49:18,898
I'll be taking up the rear and exiting

4686
07:49:26,090 --> 07:49:22,920
or entering the crew lock last

4687
07:49:27,708 --> 07:49:26,100
it'll be his job to make sure the strut

4688
07:49:30,830 --> 07:49:27,718

bag which is currently on his body

4689

07:49:33,410 --> 07:49:30,840

restraint tether of the spacesuit gets

4690

07:49:35,510 --> 07:49:33,420

uh maneuvered into the crew lock with

4691

07:49:37,910 --> 07:49:35,520

them he'll be the one to close that

4692

07:49:41,270 --> 07:49:37,920

thermal cover the

4693

07:49:43,750 --> 07:49:41,280

um soft fabric flap that goes over the

4694

07:49:50,448 --> 07:49:43,760

hatch to the crew lock

4695

07:49:50,458 --> 07:49:56,330

oh

4696

07:49:56,340 --> 07:50:08,700

foreign

4697

07:50:08,710 --> 07:50:15,840

[Music]

4698

07:50:15,850 --> 07:50:19,350

[Applause]

4699

07:50:19,360 --> 07:50:22,810

[Music]

4700

07:50:28,250 --> 07:50:26,270

trapped behind the hatch just make sure

4701
07:50:29,628 --> 07:50:28,260
for us that you have access to it and

4702
07:50:32,510 --> 07:50:29,638
that you'll be able to install it when

4703
07:50:32,520 --> 07:51:05,628
okay

4704
07:51:05,638 --> 07:51:14,750
area

4705
07:51:14,760 --> 07:51:19,800
happy Gucci we see ya

4706
07:51:19,810 --> 07:51:28,030
[Applause]

4707
07:51:33,830 --> 07:51:30,620
my um

4708
07:51:39,048 --> 07:51:37,310
copy Duke are you able to extricate it

4709
07:52:01,310 --> 07:51:39,058
or

4710
07:52:11,660 --> 07:52:01,320
we'll take one final tcv setting just

4711
07:52:16,850 --> 07:52:14,030
[Music]

4712
07:52:25,720 --> 07:52:16,860
foreign

4713
07:52:25,920 --> 07:52:25,730

[Applause]

4714

07:52:31,570 --> 07:52:25,930

[Music]

4715

07:52:54,770 --> 07:52:34,850

okay copy we're tracking six for both of

4716

07:52:54,780 --> 07:52:58,868

okay

4717

07:53:08,030 --> 07:53:02,388

I'm uh fighting with this fc2 here copy

4718

07:53:08,040 --> 07:53:12,948

all right

4719

07:53:17,388 --> 07:53:15,590

ground copies everything Luigi let's

4720

07:53:19,610 --> 07:53:17,398

just have you hang out there to give

4721

07:53:23,510 --> 07:53:19,620

Duke maximum space for trying to get

4722

07:53:23,520 --> 07:53:37,110

okay copy that

4723

07:53:41,810 --> 07:53:38,288

[Music]

4724

07:53:43,788 --> 07:53:41,820

a little bit but I cannot I have enough

4725

07:53:45,240 --> 07:53:43,798

flocks it reaches me

4726
07:53:48,128 --> 07:53:45,250
but I don't think it'll be a problem

4727
07:53:51,770 --> 07:53:48,138
[Applause]

4728
07:53:54,048 --> 07:53:51,780
happy Duke and uh you don't see any way

4729
07:53:58,490 --> 07:53:54,058
that it would be in the way of the hatch

4730
07:54:03,650 --> 07:54:01,730
oh it's behind the house

4731
07:54:06,288 --> 07:54:03,660
um

4732
07:54:09,910 --> 07:54:06,298
that's right in the top

4733
07:54:15,410 --> 07:54:12,948
the problem

4734
07:54:16,968 --> 07:54:15,420
okay copy

4735
07:54:19,910 --> 07:54:16,978
I think if I pull it all the way out

4736
07:54:33,288 --> 07:54:19,920
it'll be more of a snack hazard

4737
07:54:33,298 --> 07:54:57,410
standby Duke we're checking

4738
07:54:57,420 --> 07:55:35,270

foreign

4739

07:55:39,708 --> 07:55:38,090

okay Duke if you are confident that you

4740

07:55:42,948 --> 07:55:39,718

have enough slack to actually connect

4741

07:55:45,048 --> 07:55:42,958

the Su to your DCM and that it's not

4742

07:55:46,968 --> 07:55:45,058

going to interfere with the hatch

4743

07:55:49,368 --> 07:55:46,978

operation we're good with that config

4744

07:55:50,990 --> 07:55:49,378

and kuichi you can then continue to

4745

07:56:01,190 --> 07:55:51,000

Ingress the airlock and just turn off

4746

07:56:01,200 --> 07:56:08,330

thank you

4747

07:56:13,490 --> 07:56:10,368

okay yeah it looks great like it's gonna

4748

07:56:15,170 --> 07:56:13,500

be no problem uh closing that half and I

4749

07:56:18,410 --> 07:56:15,180

definitely have Flex okay that's perfect

4750

07:56:24,920 --> 07:56:18,420

great news with that koichi will have

4751
07:56:28,730 --> 07:56:26,628
[Applause]

4752
07:56:30,530 --> 07:56:28,740
you'll also be wanting to close the

4753
07:56:31,610 --> 07:56:30,540
hatch thermal cover so if you want to

4754
07:56:42,070 --> 07:56:31,620
attach

4755
07:56:47,270 --> 07:56:44,868
or do I need to wait

4756
07:56:49,250 --> 07:56:47,280
you can we'll also have you receive that

4757
07:56:51,288 --> 07:56:49,260
strut bag in the best way possible from

4758
07:56:54,288 --> 07:56:51,298
koichi and I think he should do that

4759
07:56:57,110 --> 07:56:54,298
before he tries to Ingress

4760
07:57:03,830 --> 07:57:00,590
and uh just let me know when I can put

4761
07:57:05,990 --> 07:57:03,840
in the setback okay

4762
07:57:18,888 --> 07:57:06,000
um go ahead I'm ready for it okay then

4763
07:57:23,350 --> 07:57:21,170

okay you're coming in

4764

07:57:26,270 --> 07:57:23,360

it's coming at you

4765

07:57:46,788 --> 07:57:26,280

okay you still read it for me okay let

4766

07:57:46,798 --> 07:57:49,670

okay

4767

07:57:49,680 --> 07:58:28,990

then you release the red from there

4768

07:58:29,000 --> 07:58:41,030

okay great thank you got it

4769

07:58:41,040 --> 07:58:45,770

okay Peter with that uh

4770

07:58:49,368 --> 07:58:48,110

you can Ingress turn off your hecka as

4771

07:58:50,690 --> 07:58:49,378

you Ingress

4772

07:58:52,968 --> 07:58:50,700

and then you'll be closing the hatch

4773

07:58:55,310 --> 07:58:52,978

thermal cover okay releasing The Hook

4774

07:58:57,590 --> 07:58:55,320

from its stowage point and attaching the

4775

07:58:59,030 --> 07:58:57,600

hook to the magnetic plate b-ring and

4776
07:59:01,730 --> 07:58:59,040
cinching the strap until you see six

4777
07:59:01,740 --> 07:59:08,990
okay

4778
07:59:15,910 --> 07:59:12,670
the idea team especially uh Chloe

4779
07:59:20,888 --> 07:59:15,920
Becky Thompson

4780
07:59:23,330 --> 07:59:20,898
Stephen Villano and and of course uh

4781
07:59:25,368 --> 07:59:23,340
for putting together excellent work

4782
07:59:28,070 --> 07:59:25,378
procedures and executing it then we

4783
07:59:31,490 --> 07:59:28,080
encounter the you know challenges and

4784
07:59:35,090 --> 07:59:31,500
but I appreciate your flexibility to

4785
07:59:39,910 --> 07:59:35,100
safely return us to do the airlock and I

4786
07:59:42,968 --> 07:59:39,920
also like to thank a trainer

4787
07:59:46,430 --> 07:59:42,978
Mark Wilson

4788
07:59:49,730 --> 07:59:46,440

and David's assignments were joining us

4789

07:59:51,708 --> 07:59:49,740

on the Emu systems in negative City for

4790

07:59:54,230 --> 07:59:51,718

Eva and I know that the team has

4791

07:59:58,128 --> 07:59:54,240

supported VGA in Houston and In Scuba

4792

07:59:58,510 --> 07:59:58,138

and I really like your bank to all of

4793

08:00:04,730 --> 07:59:58,520

them

4794

08:00:04,740 --> 08:00:18,080

foreign

4795

08:00:18,090 --> 08:00:24,170

[Applause]

4796

08:00:28,430 --> 08:00:25,968

thank you for those kind words

4797

08:00:31,788 --> 08:00:28,440

congratulations on your Eva let's get

4798

08:00:33,530 --> 08:00:31,798

you inside and safe on that SCU really

4799

08:00:41,288 --> 08:00:33,540

proud of this team and all of the hard

4800

08:00:45,830 --> 08:00:44,270

you can connect your Su to the DCM just

4801
08:00:49,430 --> 08:00:45,840
make sure that it won't be a snack

4802
08:00:56,448 --> 08:00:49,440
Hazard for kuichi as he's ingressing

4803
08:01:00,650 --> 08:00:58,890
looking good

4804
08:01:06,110 --> 08:01:00,660
[Music]

4805
08:01:06,120 --> 08:01:10,610
the uh

4806
08:01:10,620 --> 08:01:39,128
thermal cover

4807
08:01:43,910 --> 08:01:42,110
in case you missed it uh koichiwakata

4808
08:01:45,708 --> 08:01:43,920
gave some congratulatory and thankful

4809
08:01:49,190 --> 08:01:45,718
words to the teams that made it possible

4810
08:01:51,288 --> 08:01:49,200
for he and NASA astronaut Nicole Mann to

4811
08:01:53,448 --> 08:01:51,298
conduct today's spacewalk

4812
08:01:55,250 --> 08:01:53,458
um this is his final words before he

4813
08:01:57,830 --> 08:01:55,260

enters the crew lock and they begin the

4814

08:01:59,990 --> 08:01:57,840

repressurization sequence Nicole man is

4815

08:02:02,270 --> 08:02:00,000

already in the crew lock just waiting

4816

08:02:04,730 --> 08:02:02,280

for the next steps to hook up her

4817

08:02:06,830 --> 08:02:04,740

umbilical to the International Space

4818

08:02:08,570 --> 08:02:06,840

Station her suit's still on the portable

4819

08:02:12,888 --> 08:02:08,580

life support system but that umbilical

4820

08:02:16,430 --> 08:02:12,898

will provide water and oxygen and other

4821

08:02:19,310 --> 08:02:16,440

power and other consumables to be

4822

08:02:21,430 --> 08:02:19,320

transferred directly from station to the

4823

08:02:23,330 --> 08:02:21,440

astronauts so we'll just wait for

4824

08:02:24,830 --> 08:02:23,340

kuichiwakata to make his Ingress

4825

08:02:27,708 --> 08:02:24,840

successful and then we'll begin the

4826
08:02:30,530 --> 08:02:27,718
repressurization shortly after coming in

4827
08:02:32,330 --> 08:02:30,540
okay and get the hook back to the

4828
08:02:34,490 --> 08:02:32,340
magnetic plate d-ring and the strap

4829
08:02:42,468 --> 08:02:34,500
cinched and just verify that the magnet

4830
08:02:42,478 --> 08:02:55,570
it's a little bit further

4831
08:02:55,580 --> 08:03:08,330
nice okay all right

4832
08:03:08,340 --> 08:03:30,710
foreign

4833
08:03:30,720 --> 08:03:35,090
[Applause]

4834
08:03:35,100 --> 08:03:37,610
yeah

4835
08:03:41,910 --> 08:03:39,948
this is my mini workstation ended my

4836
08:03:45,048 --> 08:03:41,920
fishes

4837
08:03:46,910 --> 08:03:45,058
[Applause]

4838
08:03:56,750 --> 08:03:46,920

and then Duke just let us know when you

4839

08:04:01,490 --> 08:03:58,850

once you do just a note that a tcv

4840

08:04:03,170 --> 08:04:01,500

setting between 8 and Max cooling will

4841

08:04:12,288 --> 08:04:03,180

minimize the time necessary to get

4842

08:04:12,298 --> 08:04:44,940

foreign

4843

08:04:44,950 --> 08:04:51,708

[Applause]

4844

08:05:05,830 --> 08:04:55,430

one two three

4845

08:05:18,270 --> 08:05:08,388

and copy Duke you are connected to that

4846

08:05:18,280 --> 08:05:22,310

[Applause]

4847

08:05:22,320 --> 08:05:27,288

here

4848

08:05:31,968 --> 08:05:30,048

hey from Gucci you can connect your SCU

4849

08:05:34,610 --> 08:05:31,978

to the DC just let us know when you've

4850

08:05:38,090 --> 08:05:34,620

got that connected copy

4851
08:05:39,830 --> 08:05:38,100
okay reminder for you as well PCV

4852
08:05:41,690 --> 08:05:39,840
between eight and Max cooling will

4853
08:05:50,628 --> 08:05:41,700
minimize time necessary for cooling on a

4854
08:05:50,638 --> 08:05:54,590
ES

4855
08:07:59,750 --> 08:06:46,610
foreign

4856
08:08:06,410 --> 08:08:02,628
with that you can switch water to off

4857
08:08:10,610 --> 08:08:06,420
that's the forward position expect H2O

4858
08:08:10,620 --> 08:08:17,448
okay copy that you love me work

4859
08:08:17,458 --> 08:08:28,628
photos

4860
08:08:33,888 --> 08:08:31,128
coffee water is off for both of you

4861
08:08:36,468 --> 08:08:33,898
we've started a two minute timer

4862
08:08:44,510 --> 08:08:36,478
once that timer is up you'll be getting

4863
08:08:47,990 --> 08:08:46,368

so a quick recap both astronauts are

4864

08:08:50,030 --> 08:08:48,000

inside the crew lock right now they're

4865

08:08:52,368 --> 08:08:50,040

hooked up by umbilical to the

4866

08:08:55,910 --> 08:08:52,378

International Space Station

4867

08:08:58,548 --> 08:08:55,920

they're setting a timer for uh the

4868

08:09:01,070 --> 08:08:58,558

procedures to

4869

08:09:02,448 --> 08:09:01,080

get ready uh get the suits ready and

4870

08:09:03,230 --> 08:09:02,458

themselves ready before closing the

4871

08:09:06,110 --> 08:09:03,240

hatch and be getting the

4872

08:09:08,090 --> 08:09:06,120

repressurization process uh the clock is

4873

08:09:10,070 --> 08:09:08,100

still going for today's space walk and

4874

08:09:17,450 --> 08:09:10,080

it'll officially stop once we start that

4875

08:09:17,460 --> 08:09:24,070

[Applause]

4876
08:09:24,080 --> 08:10:03,590
thank you

4877
08:10:56,750 --> 08:10:13,490
foreign

4878
08:11:01,850 --> 08:10:59,930
guys we've got the two minute timer up

4879
08:11:02,868 --> 08:11:01,860
verify the outer hatch is clear of

4880
08:11:05,448 --> 08:11:02,878
hardware

4881
08:11:07,368 --> 08:11:05,458
and verify the handle position is per

4882
08:11:11,888 --> 08:11:07,378
the hatch decal

4883
08:11:11,898 --> 08:11:44,990
keep your puppies in work

4884
08:11:45,000 --> 08:12:19,190
foreign

4885
08:12:19,200 --> 08:12:28,010
I go a little more covered

4886
08:12:28,020 --> 08:12:34,190
I'm hitting something further

4887
08:12:48,490 --> 08:12:38,388
you you see my fear okay let me tell you

4888
08:12:48,500 --> 08:12:53,388

and you can come out

4889

08:12:56,330 --> 08:12:54,590

okay

4890

08:13:12,548 --> 08:12:56,340

um

4891

08:13:17,448 --> 08:13:14,990

we're in another uh brief Handover

4892

08:13:20,388 --> 08:13:17,458

period again this one is also relatively

4893

08:13:21,770 --> 08:13:20,398

short so we'll be getting the video

4894

08:13:24,048 --> 08:13:21,780

um back from the International Space

4895

08:13:26,388 --> 08:13:24,058

Station very shortly already have some

4896

08:13:27,708 --> 08:13:26,398

audio the crew are inside the crew lock

4897

08:13:28,850 --> 08:13:27,718

right now they're going through their

4898

08:13:31,430 --> 08:13:28,860

steps

4899

08:13:33,410 --> 08:13:31,440

um to get the hatch closed inside the

4900

08:13:35,208 --> 08:13:33,420

crew lock there's a couple more steps

4901
08:13:37,190 --> 08:13:35,218
for the umbilicals just to provide

4902
08:13:38,750 --> 08:13:37,200
oxygen and power through the

4903
08:13:45,048 --> 08:13:38,760
International Space Station to them

4904
08:14:03,410 --> 08:13:56,230
okay

4905
08:14:03,420 --> 08:14:09,410
I need to go up a little bit

4906
08:14:09,420 --> 08:14:15,590
better than the way

4907
08:14:15,600 --> 08:14:29,990
you can acknowledge the message Duke

4908
08:14:46,910 --> 08:14:33,128
I think it's good now

4909
08:14:56,868 --> 08:14:49,368
I just found

4910
08:15:02,810 --> 08:14:58,450
closing

4911
08:15:02,820 --> 08:15:27,490
collecting directions

4912
08:15:41,930 --> 08:15:31,850
coffee that is great news we are with

4913
08:15:47,750 --> 08:15:44,750

okay on your DCM just check for me that

4914

08:15:52,430 --> 08:15:47,760

your scu's are connected to your DCM and

4915

08:15:58,030 --> 08:15:53,940

okay okay

4916

08:15:58,040 --> 08:16:02,810

connected and water is off free because

4917

08:16:13,368 --> 08:16:05,690

copy both check that the EV hatch is

4918

08:16:17,628 --> 08:16:14,990

on the UIA

4919

08:16:23,468 --> 08:16:17,638

check that the oxygen for emu one and

4920

08:16:28,430 --> 08:16:25,510

for evening

4921

08:16:37,368 --> 08:16:28,440

one and two are open

4922

08:16:48,110 --> 08:16:42,650

LEDs

4923

08:16:50,628 --> 08:16:48,120

power voltage is between 18 and 19 for

4924

08:16:58,730 --> 08:16:54,310

and for 18.6

4925

08:17:03,350 --> 08:16:58,740

on your DCM switch power to SCU expect a

4926
08:17:03,360 --> 08:17:11,570

[Music]

4927
08:17:11,580 --> 08:17:19,128

Nina

4928
08:17:36,350 --> 08:17:20,930

negative you don't need to stagger this

4929
08:17:51,850 --> 08:17:37,548

ever

4930
08:17:56,208 --> 08:17:54,048

getting a view from inside the

4931
08:17:58,070 --> 08:17:56,218

International Space Station

4932
08:18:00,350 --> 08:17:58,080

just like in the beginning of the day

4933
08:18:02,270 --> 08:18:00,360

Frank Rubio and Josh Casada NASA

4934
08:18:03,708 --> 08:18:02,280

astronauts inside the equipment lock on

4935
08:18:06,048 --> 08:18:03,718

the other side of that hatch is our two

4936
08:18:07,788 --> 08:18:06,058

spacewalking astronauts that hatch is

4937
08:18:10,010 --> 08:18:07,798

down to vacuum right now and then once

4938
08:18:12,350 --> 08:18:10,020

both of you have switched power to SCU

4939

08:18:14,330 --> 08:18:12,360

I'll be ready to hand it over to Frank

4940

08:18:18,170 --> 08:18:14,340

we can see him there in the equipment

4941

08:18:18,180 --> 08:18:27,530

um

4942

08:18:27,540 --> 08:18:44,990

copy ev2

4943

08:18:45,000 --> 08:19:22,270

thank you

4944

08:19:27,708 --> 08:19:25,310

to you

4945

08:19:29,690 --> 08:19:27,718

great work both of you copy you are both

4946

08:19:32,090 --> 08:19:29,700

now on SCU power

4947

08:19:33,948 --> 08:19:32,100

with that I can hand it over to Frank

4948

08:19:36,110 --> 08:19:33,958

thank you both for your incredibly hard

4949

08:19:37,968 --> 08:19:36,120

work lots of strength and Grace doing

4950

08:19:40,670 --> 08:19:37,978

with so much for Nikki Hardware today

4951

08:19:42,410 --> 08:19:40,680

thank you for this incredible Eva

4952

08:19:47,830 --> 08:19:42,420

grateful for the opportunity to work

4953

08:19:54,888 --> 08:19:50,030

I really enjoyed them working with you

4954

08:19:59,030 --> 08:19:57,468

all right and yeah great job as a ground

4955

08:20:01,310 --> 08:19:59,040

IV thanks so much for bringing us to

4956

08:20:03,948 --> 08:20:01,320

this point Collegian Nicole it's great

4957

08:20:06,530 --> 08:20:03,958

to have you guys back all right so for

4958

08:20:09,048 --> 08:20:06,540

both of you on your dcms take your O2

4959

08:20:32,090 --> 08:20:09,058

actuator to press

4960

08:22:02,708 --> 08:21:15,948

foreign

4961

08:22:08,150 --> 08:22:05,628

could we have you get a good wiggle test

4962

08:22:20,330 --> 08:22:08,160

on that O2 actuator just make sure it's

4963

08:22:27,490 --> 08:22:24,888

okay Wiggles and these themselves

4964

08:23:43,968 --> 08:22:27,500

yeah

4965

08:23:43,978 --> 08:24:11,388

foreign

4966

08:24:16,250 --> 08:24:14,448

for those uh tuning in now uh Frank

4967

08:24:18,708 --> 08:24:16,260

Rubio on the inside

4968

08:24:20,570 --> 08:24:18,718

of the station's equipment lock is

4969

08:24:22,250 --> 08:24:20,580

walking the crew through the

4970

08:24:23,868 --> 08:24:22,260

repressurization procedure right now

4971

08:24:26,330 --> 08:24:23,878

they just have to make sure some of the

4972

08:24:28,490 --> 08:24:26,340

knobs and dials that they're turning are

4973

08:24:31,010 --> 08:24:28,500

all the way the ground team is assessing

4974

08:24:32,510 --> 08:24:31,020

to make sure that uh the crew is

4975

08:24:34,610 --> 08:24:32,520

following the steps very intricately

4976
08:24:36,048 --> 08:24:34,620
until they begin the repressurization so

4977
08:24:39,288 --> 08:24:36,058
they're just verifying that everything

4978
08:25:41,520 --> 08:25:08,510
foreign

4979
08:26:00,230 --> 08:25:43,490
[Music]

4980
08:26:57,968 --> 08:26:02,850
let me give it one more try okay

4981
08:27:03,590 --> 08:27:00,948
is sticking

4982
08:27:05,930 --> 08:27:03,600
okay yeah copy we know that's a hard one

4983
08:27:07,910 --> 08:27:05,940
to actuate as long as you've got that

4984
08:27:09,888 --> 08:27:07,920
lever pushed up and the button pushed in

4985
08:27:11,510 --> 08:27:09,898
to move it into press

4986
08:27:21,468 --> 08:27:11,520
um we can let you keep working on it we

4987
08:27:25,548 --> 08:27:23,868
yeah that is true basically we'd just be

4988
08:27:26,930 --> 08:27:25,558

having you do the repress a little more

4989

08:27:34,208 --> 08:27:26,940

slowly to make sure that we don't

4990

08:27:34,218 --> 08:27:44,090

the button

4991

08:27:44,100 --> 08:27:47,810

you get to the top

4992

08:27:47,820 --> 08:28:02,570

almost there

4993

08:28:20,220 --> 08:28:02,830

foreign

4994

08:28:20,230 --> 08:28:38,510

[Applause]

4995

08:28:43,430 --> 08:28:40,430

sounds like you guys are doing great

4996

08:28:45,650 --> 08:28:43,440

work in there if you want to we can

4997

08:28:47,930 --> 08:28:45,660

continue with the repress with your O2

4998

08:28:49,730 --> 08:28:47,940

actuator still in Eva

4999

08:28:51,830 --> 08:28:49,740

big picture we'd just be going a lot

5000

08:28:54,288 --> 08:28:51,840

more slowly Duke you would maintain

5001
08:28:56,150 --> 08:28:54,298
really good calms with Frank and you

5002
08:28:57,708 --> 08:28:56,160
would just need to keep your suit

5003
08:29:00,110 --> 08:28:57,718
pressure monitoring your suit pressure

5004
08:29:02,690 --> 08:29:00,120
to make sure that Delta p is above four

5005
08:29:08,208 --> 08:29:02,700
for the duration of the repress and that

5006
08:29:08,218 --> 08:29:12,730
but we're going to

5007
08:29:21,048 --> 08:29:14,868
all right now I can't

5008
08:29:38,110 --> 08:29:23,270
right

5009
08:29:45,410 --> 08:29:41,270
station should be now

5010
08:30:18,288 --> 08:30:14,070
[Applause]

5011
08:30:18,298 --> 08:30:32,760
now we can I can get there okay

5012
08:30:32,770 --> 08:30:57,888
[Music]

5013
08:30:57,898 --> 08:31:15,190

foreign

5014

08:31:20,270 --> 08:31:18,888

reminder that the process to get the two

5015

08:31:21,850 --> 08:31:20,280

crew members back inside the

5016

08:31:24,288 --> 08:31:21,860

International Space Station and

5017

08:31:31,310 --> 08:31:24,298

repressurize that crew lock to get them

5018

08:31:31,320 --> 08:31:35,530

foreign

5019

08:31:39,650 --> 08:31:37,910

teams are working in tandem with the

5020

08:31:41,288 --> 08:31:39,660

crew that you see here from your view

5021

08:31:44,030 --> 08:31:41,298

inside the International Space Station

5022

08:31:46,368 --> 08:31:44,040

all talking and monitoring along the way

5023

08:31:52,250 --> 08:31:46,378

making sure that they're following the

5024

08:32:04,250 --> 08:31:53,868

there

5025

08:32:35,868 --> 08:32:06,708

okay

5026
08:32:40,628 --> 08:32:37,990
you moved

5027
08:32:56,150 --> 08:32:40,638
all right

5028
08:33:01,070 --> 08:32:59,570
okay and just to verify uh I copy you

5029
08:33:07,368 --> 08:33:01,080
are impressed and Nicole I understand

5030
08:33:11,810 --> 08:33:09,468
with that confirmation they got the

5031
08:33:13,310 --> 08:33:11,820
actuator the oxygen exterior where they

5032
08:33:17,948 --> 08:33:13,320
need to go so they're working through

5033
08:33:22,128 --> 08:33:20,270
and let me know what's a good rate I'll

5034
08:33:24,288 --> 08:33:22,138
start off nice and slow so IV hatch

5035
08:33:29,510 --> 08:33:24,298
Equalization valves I will follow from

5036
08:33:29,520 --> 08:33:42,350
reminder for disregard

5037
08:33:47,420 --> 08:33:44,930
and you can both expect an alert Zone

5038
08:34:01,670 --> 08:33:47,430

and time is 20 35.

5039

08:34:01,680 --> 08:34:05,150
of that ring for both of you

5040

08:34:05,160 --> 08:34:08,690
can go faster for me

5041

08:34:26,270 --> 08:34:10,910
technically okay with them yeah you can

5042

08:34:26,280 --> 08:34:29,930
bye

5043

08:34:29,940 --> 08:34:50,510
holster right good for me yeah

5044

08:34:55,030 --> 08:34:53,208
I want to release four PSI you can

5045

08:35:21,350 --> 08:34:55,040
expect an alerts

5046

08:35:25,910 --> 08:35:23,270
all right so what you're hearing now is

5047

08:35:28,430 --> 08:35:25,920
the repressurization underway and with

5048

08:35:31,190 --> 08:35:28,440
the repressurization start that is the

5049

08:35:34,250 --> 08:35:31,200
official end time for today's space walk

5050

08:35:37,310 --> 08:35:34,260
that total space walking time is 7 hours

5051
08:36:07,968 --> 08:35:37,320
and 21 minutes with the repressurization

5052
08:36:07,978 --> 08:36:18,040
foreign

5053
08:36:18,050 --> 08:36:37,190
[Applause]

5054
08:36:41,628 --> 08:36:39,650
the repressurization process is in

5055
08:36:44,810 --> 08:36:41,638
Reverse from what we saw at the start of

5056
08:36:47,690 --> 08:36:44,820
today's spacewalk going down from 14.7

5057
08:36:49,190 --> 08:36:47,700
PSI down to five holding for a little

5058
08:36:51,650 --> 08:36:49,200
bit to make sure there were no leaks

5059
08:36:54,708 --> 08:36:51,660
before proceeding down to vacuum it's

5060
08:36:57,170 --> 08:36:54,718
now in Reverse from vacuum up to 5 PSI

5061
08:36:58,968 --> 08:36:57,180
same same process holding for just a

5062
08:37:01,430 --> 08:36:58,978
couple of minutes to make sure there are

5063
08:37:04,850 --> 08:37:01,440

no leaks before they continue to proceed

5064

08:37:06,530 --> 08:37:04,860

up to pressure matching and equalizing

5065

08:37:11,410 --> 08:37:06,540

that of the inside of the space station

5066

08:37:17,930 --> 08:37:11,420

where Frank Rubio is with his crewmates

5067

08:37:20,208 --> 08:37:17,940

and uh that will be up to 14.7 psi

5068

08:38:20,690 --> 08:37:20,218

so right now we're in a couple of minute

5069

08:38:23,810 --> 08:38:22,128

all right guys we're two minutes of

5070

08:39:39,288 --> 08:38:23,820

stabilizations up now we'll do a one

5071

08:39:44,930 --> 08:39:42,048

okay guys well pressure is stable so

5072

08:39:50,930 --> 08:39:44,940

next you will both take your rub heaters

5073

08:39:50,940 --> 08:40:01,670

uh check that your glove heaters are off

5074

08:40:06,530 --> 08:40:03,490

okay and I heard

5075

08:40:08,750 --> 08:40:06,540

the heaters are off for both of you

5076
08:40:10,370 --> 08:40:08,760
check that your check gloves for

5077
08:40:18,948 --> 08:40:10,380
contamination

5078
08:40:21,350 --> 08:40:18,958
okay

5079
08:40:22,610 --> 08:40:21,360
uh for both of you take your O2 actuator

5080
08:40:49,548 --> 08:40:22,620
to IV

5081
08:41:44,628 --> 08:40:52,548
IV

5082
08:41:44,638 --> 08:41:49,910
YouTube

5083
08:41:54,170 --> 08:41:51,650
we're now going to go back to finish the

5084
08:41:55,850 --> 08:41:54,180
repress so

5085
08:41:58,070 --> 08:41:55,860
slow and then increase the rate let me

5086
08:42:00,770 --> 08:41:58,080
know if um you don't feel comfortable

5087
08:42:03,110 --> 08:42:00,780
you can expect an alert Zone both when I

5088
08:42:10,670 --> 08:42:03,120

start and also when dcg is about zero

5089

08:42:16,070 --> 08:42:13,490

and station Houston to uh question one

5090

08:42:24,610 --> 08:42:16,080

uh for koichi uh could you verify your

5091

08:42:24,620 --> 08:42:28,070

I'm gonna

5092

08:42:28,080 --> 08:42:42,020

okay config

5093

08:42:42,030 --> 08:42:48,888

[Applause]

5094

08:42:52,968 --> 08:42:50,930

and with that confirmation the

5095

08:42:56,388 --> 08:42:52,978

repressurization inside the crew lock

5096

08:42:59,570 --> 08:42:56,398

has resumed so we are increasing from 5

5097

08:43:01,070 --> 08:42:59,580

PSI up to equalize with the inside of

5098

08:43:04,250 --> 08:43:01,080

the space station which is sitting at

5099

08:43:06,650 --> 08:43:04,260

about 14.7 the same as we have here on

5100

08:43:08,330 --> 08:43:06,660

Earth as we make our way up to match

5101
08:43:10,730 --> 08:43:08,340
that for the International Space Station

5102
08:43:12,708 --> 08:43:10,740
we do have some statistics now that the

5103
08:43:15,170 --> 08:43:12,718
space station the spacewalk for today

5104
08:43:18,368 --> 08:43:15,180
has concluded uh that spacewalk again

5105
08:43:21,650 --> 08:43:18,378
was seven hours 21 minutes it was the

5106
08:43:23,690 --> 08:43:21,660
258th spacewalk in support of space

5107
08:43:27,350 --> 08:43:23,700
station assembly maintenance and

5108
08:43:29,570 --> 08:43:27,360
upgrades uh for the two space walking

5109
08:43:32,090 --> 08:43:29,580
astronauts it was a first it was the

5110
08:43:34,128 --> 08:43:32,100
first space station spacewalk in 2023

5111
08:43:36,650 --> 08:43:34,138
but the fifth overall during this

5112
08:43:39,110 --> 08:43:36,660
Expedition Expedition 68

5113
08:43:41,448 --> 08:43:39,120

for wakata this was his first spacewalk

5114

08:43:43,548 --> 08:43:41,458

so he gets the total run time for

5115

08:43:45,888 --> 08:43:43,558

today's spacewalk which is again seven

5116

08:43:48,830 --> 08:43:45,898

hours 21 minutes is the same for man

5117

08:43:50,090 --> 08:43:48,840

seven hours 21 minutes for her career as

5118

08:43:51,708 --> 08:43:50,100

well

5119

08:43:54,110 --> 08:43:51,718

um and that is the total run time for

5120

08:43:57,610 --> 08:43:54,120

today's space walk which ended at 2 35

5121

08:44:00,530 --> 08:43:57,620

p.m central time if you take all of the

5122

08:44:02,030 --> 08:44:00,540

258 spacewalks that have been conducted

5123

08:44:04,310 --> 08:44:02,040

in support of space station assembly

5124

08:44:18,170 --> 08:44:04,320

maintenance and upgrades you get a total

5125

08:44:24,230 --> 08:44:20,410

foreign

5126
08:44:27,410 --> 08:44:24,240
again uh Rubio on the right and uh NASA

5127
08:44:29,510 --> 08:44:27,420
astronaut Josh cassida on the left uh

5128
08:44:32,030 --> 08:44:29,520
will be working to oversee the

5129
08:44:34,850 --> 08:44:32,040
repressurization and Ingress of the

5130
08:44:36,170 --> 08:44:34,860
astronauts from the crew lock into the

5131
08:44:39,230 --> 08:44:36,180
equipment lock where the two are

5132
08:44:41,930 --> 08:44:39,240
situated once they get inside uh the two

5133
08:44:44,628 --> 08:44:41,940
space walking astronauts will flank

5134
08:44:46,070 --> 08:44:44,638
um cassida and Rubio to the left and to

5135
08:44:48,830 --> 08:44:46,080
the right they'll get situated in those

5136
08:44:51,530 --> 08:44:48,840
racks the silver racks you see uh right

5137
08:44:54,110 --> 08:44:51,540
now one very clearly behind

5138
08:44:56,628 --> 08:44:54,120

um Josh cassida but first we got to make

5139

08:44:59,150 --> 08:44:56,638

our way up to equalize with the pressure

5140

08:45:01,610 --> 08:44:59,160

of the International Space Station and

5141

08:45:03,888 --> 08:45:01,620

the rate is a little faster than we saw

5142

08:45:06,230 --> 08:45:03,898

for the depressurization sequence so

5143

08:45:11,750 --> 08:45:06,240

right now we're a little more than 12

5144

08:46:47,650 --> 08:45:40,368

foreign

5145

08:46:53,690 --> 08:46:50,330

repressurization is complete

5146

08:47:01,250 --> 08:46:53,700

so Frank Rubio you see turning that uh

5147

08:47:01,260 --> 08:47:46,190

foreign

5148

08:47:46,200 --> 08:47:55,070

pattern one

5149

08:47:59,388 --> 08:47:56,868

hey great here will you guys take care

5150

08:48:02,150 --> 08:47:59,398

I'm sorry hockey will you guys uh take

5151
08:48:08,030 --> 08:48:02,160
care of uh step four and one decimal two

5152
08:48:08,040 --> 08:48:42,530
and Frank we are taking care of it

5153
08:48:47,990 --> 08:48:45,590
first in the hatch is uh it has

5154
08:48:50,388 --> 08:48:48,000
astronaut Nicole Mann who took on the

5155
08:48:52,730 --> 08:48:50,398
ev2 position for today she was the first

5156
08:48:56,810 --> 08:48:52,740
in the hatch at the conclusion of

5157
08:49:02,690 --> 08:49:00,288
cancer and Rubio as the suit IVs they're

5158
08:49:04,968 --> 08:49:02,700
the ones responsible for getting both of

5159
08:49:12,910 --> 08:49:04,978
the astronauts situated so they can

5160
08:49:20,448 --> 08:49:17,030
one of the first steps for them is at

5161
08:49:23,030 --> 08:49:20,458
the base of the suit's backpack is a

5162
08:49:26,270 --> 08:49:23,040
unit called the safer that's sort of

5163
08:49:28,850 --> 08:49:26,280

their emergency jet pack that they would

5164

08:49:30,410 --> 08:49:28,860

use in the very unlikely scenario that

5165

08:49:50,770 --> 08:49:30,420

they were that they would become

5166

08:50:43,128 --> 08:49:55,368

elocation on one uh EV Q is no longer

5167

08:50:47,510 --> 08:50:46,250

if you can see these safer uh unit has

5168

08:50:51,110 --> 08:50:47,520

been removed

5169

08:51:12,590 --> 08:50:51,120

from the base of the backpack of

5170

08:51:17,690 --> 08:51:14,930

Josh casset are now working to collapse

5171

08:51:20,570 --> 08:51:17,700

the handles that went up the sides of

5172

08:51:22,610 --> 08:51:20,580

that backpack that's the stowage

5173

08:51:24,410 --> 08:51:22,620

configuration for those safer units

5174

08:51:25,730 --> 08:51:24,420

you'll put that in a separate location

5175

08:51:30,230 --> 08:51:25,740

as

5176
08:51:32,030 --> 08:51:30,240
Frank Rubio gets Nicole Mann situated on

5177
08:51:34,548 --> 08:51:32,040
the side there so they can start working

5178
08:51:36,410 --> 08:51:34,558
with her suit removing the helmets and

5179
08:51:38,410 --> 08:51:36,420
gloves and getting her comfortable and

5180
08:51:41,330 --> 08:51:38,420
readjusted back into the station's

5181
08:51:43,490 --> 08:51:41,340
internal environment meanwhile koichi

5182
08:51:46,190 --> 08:51:43,500
wakada you can see is still in the crew

5183
08:51:48,650 --> 08:51:46,200
lock he is patiently waiting his turn

5184
08:51:51,288 --> 08:51:48,660
um until he'll go on the right side from

5185
08:51:54,048 --> 08:51:51,298
this view across from where Nicole man

5186
08:51:56,868 --> 08:51:54,058
is situated now you can also see that

5187
08:51:59,448 --> 08:51:56,878
long bag that they towed all the way out

5188
08:52:03,708 --> 08:51:59,458

to and from the work site

5189

08:52:06,170 --> 08:52:03,718

inside that bag is that mid strut

5190

08:52:09,530 --> 08:52:06,180

that will be uh taken out on a future

5191

08:52:14,150 --> 08:52:09,540

spacewalk to finish the installation of

5192

08:52:24,888 --> 08:52:14,160

uh the modification kit uh that's on the

5193

08:52:29,690 --> 08:52:27,888

even uh with the conclusion of the

5194

08:52:32,750 --> 08:52:29,700

spacewalk today we'll continue our

5195

08:54:28,010 --> 08:52:32,760

coverage until uh they start Doffing the

5196

08:54:34,250 --> 08:54:32,030

same process for uh koichiwakata

5197

08:54:37,190 --> 08:54:34,260

to get him situated

5198

08:54:39,410 --> 08:54:37,200

um so Frank Rubio and Josh Casada can

5199

08:54:41,090 --> 08:54:39,420

continue removing the

5200

08:54:43,128 --> 08:54:41,100

um components of the suit and get them

5201

08:54:44,270 --> 08:54:43,138

out so they can

5202

08:54:46,788 --> 08:54:44,280

um

5203

08:54:49,548 --> 08:54:46,798

get ready for a good night's rest really

5204

08:54:51,650 --> 08:54:49,558

after a long day of space walking the

5205

08:54:53,930 --> 08:54:51,660

space walking time of 7 hours and 21

5206

08:54:56,570 --> 08:54:53,940

minutes is just really the official time

5207

08:54:59,948 --> 08:54:56,580

of the spacewalk itself and used for

5208

08:55:03,170 --> 08:54:59,958

engineers for a variety of purposes

5209

08:55:06,708 --> 08:55:03,180

mainly in understanding the consumable

5210

08:55:08,388 --> 08:55:06,718

constraints and really understanding the

5211

08:55:10,670 --> 08:55:08,398

timeline as well

5212

08:55:12,948 --> 08:55:10,680

but uh for the crew it's a much much

5213

08:55:15,110 --> 08:55:12,958

longer day they've been in a suit for

5214

08:55:17,388 --> 08:55:15,120

quite some time doing pre-breathing and

5215

08:55:19,968 --> 08:55:17,398

into light exercises to get ready for

5216

08:55:23,570 --> 08:55:19,978

the spacewalk inside those spacesuits is

5217

08:55:26,030 --> 08:55:23,580

a 100 oxygen environment so part of the

5218

08:55:28,190 --> 08:55:26,040

pre-breathing exercise and and really

5219

08:55:30,048 --> 08:55:28,200

getting ready to go out of the hatch is

5220

08:55:32,628 --> 08:55:30,058

purging their body of nitrogen which

5221

08:56:04,270 --> 08:55:32,638

which takes uh time so they've been in

5222

08:56:09,170 --> 08:56:07,548

once again uh losing video from the

5223

08:56:11,270 --> 08:56:09,180

International Space Station we're lucky

5224

08:56:13,548 --> 08:56:11,280

that most of these drops have been very

5225

08:56:15,288 --> 08:56:13,558

very short in duration so we are

5226

08:56:17,448 --> 08:56:15,298

anticipating that we'll again regain

5227

08:56:19,490 --> 08:56:17,458

that video from the station once again

5228

08:56:21,590 --> 08:56:19,500

and when we do

5229

08:56:23,270 --> 08:56:21,600

um as a reminder we'll continue on our

5230

08:56:26,570 --> 08:56:23,280

coverage until they start Doffing the

5231

08:56:29,208 --> 08:56:26,580

suits um showing uh the crew and them

5232

08:56:32,448 --> 08:56:29,218

excited after uh

5233

08:56:36,468 --> 08:56:32,458

after their Journey outside to install

5234

08:56:39,288 --> 08:56:36,478

the um uh modification kit on the 1A

5235

08:56:41,208 --> 08:56:39,298

power Channel and then we'll wrap up our

5236

08:56:43,128 --> 08:56:41,218

coverage shortly after that but we'll

5237

08:56:45,770 --> 08:56:43,138

continue for just a little bit as a

5238

08:56:50,628 --> 08:56:45,780

reminder the spacewalk ended after seven

5239

08:56:53,388 --> 08:56:50,638

hours 21 minutes at uh 2 35 PM Central

5240

08:56:57,048 --> 08:56:55,250

the team here in Mission Control Houston

5241

08:56:59,930 --> 08:56:57,058

and the International Space Station

5242

08:57:01,910 --> 08:56:59,940

flight control room you see uh likely

5243

08:57:04,070 --> 08:57:01,920

more flight controllers than you've seen

5244

08:57:07,250 --> 08:57:04,080

before right now they are actually

5245

08:57:08,990 --> 08:57:07,260

undergoing a Handover period so as the

5246

08:57:10,308 --> 08:57:09,000

crew members are getting inside there

5247

08:57:11,808 --> 08:57:10,318

will be a new shift of flight

5248

08:57:14,150 --> 08:57:11,818

controllers that will get them ready for

5249

08:57:15,788 --> 08:57:14,160

bed and do some of the cleanup

5250

08:57:18,410 --> 08:57:15,798

activities that are necessary before

5251
08:58:54,128 --> 08:57:18,420
they enter into their pre-sleep and

5252
08:58:58,430 --> 08:58:56,270
lots of activity in the equipment lock

5253
08:59:01,490 --> 08:58:58,440
right now just as a reminder Frank Rubio

5254
08:59:04,670 --> 08:59:01,500
on the far right as the suit IV uh

5255
08:59:07,850 --> 08:59:04,680
helping koichiwakata on the left is Josh

5256
08:59:10,368 --> 08:59:07,860
cassida helping with Nicole Mann and her

5257
08:59:12,650 --> 08:59:10,378
suit in the far back we have uh Rose

5258
08:59:14,570 --> 08:59:12,660
Cosmos Cosmos Sergey brachopiev taking

5259
08:59:16,850 --> 08:59:14,580
some photos and it seems like we have

5260
09:02:06,948 --> 08:59:16,860
another uh Rose Cosmos cosmonaut in the

5261
09:02:11,628 --> 09:02:09,410
we're following along with this Doffing

5262
09:02:14,030 --> 09:02:11,638
process for uh Nicole Mann on the left

5263
09:02:16,548 --> 09:02:14,040

we will keep uh koichiwakata on the

5264

09:02:22,430 --> 09:02:19,730

uh on the right helping wakata is Frank

5265

09:02:24,048 --> 09:02:22,440

Rubio on the left helping man is Josh

5266

09:02:26,270 --> 09:02:24,058

cassida

5267

09:02:29,090 --> 09:02:26,280

they're working to get those gloves off

5268

09:02:31,368 --> 09:02:29,100

it's a lot of strain during a long Space

5269

09:02:35,090 --> 09:02:31,378

Walk on the Fingers

5270

09:02:38,510 --> 09:02:35,100

um so it will be quite a relief for the

5271

09:02:40,968 --> 09:02:38,520

crew members to have those gloves off it

5272

09:02:43,548 --> 09:02:40,978

is common that after the Globes have

5273

09:02:45,590 --> 09:02:43,558

been removed to take uh some photos of

5274

09:02:47,510 --> 09:02:45,600

the gloves if you notice throughout the

5275

09:02:50,510 --> 09:02:47,520

duration of the spacewalk there were

5276
09:02:52,010 --> 09:02:50,520
these periodic checks for the gloves and

5277
09:02:54,170 --> 09:02:52,020
what's called the haps the helmet

5278
09:02:56,270 --> 09:02:54,180
absorption pad we'll see those once the

5279
09:02:58,730 --> 09:02:56,280
helmets are removed but the gloves

5280
09:03:00,830 --> 09:02:58,740
because they are used so intensively

5281
09:03:02,868 --> 09:03:00,840
throughout a spacewalk they're used for

5282
09:03:04,850 --> 09:03:02,878
all of the translation or the movement

5283
09:03:07,070 --> 09:03:04,860
across the outside of the space station

5284
09:03:08,628 --> 09:03:07,080
they're used for all of the work using

5285
09:03:10,670 --> 09:03:08,638
the pistol grip tool grabbing onto

5286
09:03:12,650 --> 09:03:10,680
various structures sometimes they have

5287
09:03:15,590 --> 09:03:12,660
some Nicks and scrapes and so they

5288
09:03:17,690 --> 09:03:15,600

document uh after the spacewalk the

5289

09:03:20,090 --> 09:03:17,700

condition of the glove so we'll see we

5290

09:03:21,468 --> 09:03:20,100

might see some of the some photos of the

5291

09:03:22,910 --> 09:03:21,478

gloves what it looks like for now

5292

09:03:25,490 --> 09:03:22,920

they're still in them in the various

5293

09:03:27,888 --> 09:03:25,500

locations I think the priority here is

5294

09:03:30,308 --> 09:03:27,898

really get the crew nice and comfortable

5295

09:03:33,350 --> 09:03:30,318

now that they've conducted the spacewalk

5296

09:03:35,270 --> 09:03:33,360

allow their fingers to be free

5297

09:03:36,770 --> 09:03:35,280

so with the gloves removed the next will

5298

09:03:38,750 --> 09:03:36,780

be the helmets and of course after the

5299

09:03:41,628 --> 09:03:38,760

helmets are removed they'll do a half

5300

09:03:43,548 --> 09:03:41,638

check and all of that but after the

5301
09:05:10,930 --> 09:03:43,558
helmets are removed is when we'll end

5302
09:05:15,590 --> 09:05:13,730
both helmets off for each of the

5303
09:05:17,448 --> 09:05:15,600
respective space walking astronauts

5304
09:05:19,850 --> 09:05:17,458
today who have added 7 hours and 21

5305
09:05:23,150 --> 09:05:19,860
minutes to their total career space

5306
09:05:25,750 --> 09:05:23,160
walking time a first for both of them

5307
09:05:29,570 --> 09:05:25,760
um installing the um

5308
09:05:31,788 --> 09:05:29,580
uh mounting platform on the 1A power

5309
09:05:33,410 --> 09:05:31,798
Channel and finishing up some work on

5310
09:05:35,868 --> 09:05:33,420
the 1B

5311
09:05:38,208 --> 09:05:35,878
um they will address the one struts at a

5312
09:05:40,010 --> 09:05:38,218
later spacewalk and teams will decide

5313
09:05:43,128 --> 09:05:40,020

the appropriate course of action for

5314

09:05:45,288 --> 09:05:43,138

finishing the work there before the iro

5315

09:05:46,610 --> 09:05:45,298

says the robot solar arrays arrive in

5316

09:05:48,830 --> 09:05:46,620

the summertime

5317

09:05:50,930 --> 09:05:48,840

but for now it's the end of a successful

5318

09:05:53,750 --> 09:05:50,940

day for the space walking astronauts and

5319

09:05:56,208 --> 09:05:53,760

that'll do it for us for our coverage of

5320

09:05:59,448 --> 09:05:56,218

today's activities Smiles all around the

5321

09:06:02,808 --> 09:05:59,458

cabin uh both everyone excited for the

5322

09:06:07,190 --> 09:06:02,818

uh uh to astronauts who have added space

5323

09:06:14,820 --> 09:06:09,772

and with that we'll wrap up our coverage

5324

09:06:14,830 --> 09:06:31,850

[Music]