



1
00:01:13,070 --> 00:00:05,269

[Music]

2
00:01:13,080 --> 00:01:16,270

foreign

3
00:01:21,710 --> 00:01:19,910

[Music]

4
00:01:23,870 --> 00:01:21,720
good morning and welcome this is Mission

5
00:01:25,910 --> 00:01:23,880
Control Houston this morning two

6
00:01:27,289 --> 00:01:25,920
astronauts have put on their spacesuits

7
00:01:29,090 --> 00:01:27,299
and are getting ready to venture outside

8
00:01:30,770 --> 00:01:29,100
of the International Space Station for a

9
00:01:33,469 --> 00:01:30,780
spacewalk

10
00:01:35,749 --> 00:01:33,479
NASA astronaut Nicole Mann and Japanese

11
00:01:38,210 --> 00:01:35,759
astronaut koichiwakata are our

12
00:01:39,950 --> 00:01:38,220
spacewalkers today and their goal is to

13
00:01:41,630 --> 00:01:39,960

install some Hardware to the outside of

14

00:01:44,690 --> 00:01:41,640

the space station to prepare for the

15

00:01:47,149 --> 00:01:44,700

future installment of irosas or ISS

16

00:01:48,649 --> 00:01:47,159

rollout solar arrays and we'll get into

17

00:01:51,050 --> 00:01:48,659

a little bit more about what those are

18

00:01:52,850 --> 00:01:51,060

in just a minute but this spacewalk is

19

00:01:55,130 --> 00:01:52,860

part of an ongoing effort to upgrade the

20

00:01:57,410 --> 00:01:55,140

Space Station's power system today's

21

00:01:59,510 --> 00:01:57,420

spacewalk focuses on installing a

22

00:02:02,270 --> 00:01:59,520

support structure that a future solar

23

00:02:04,670 --> 00:02:02,280

array can be attached to in the future

24

00:02:06,950 --> 00:02:04,680

the support structure is made up of six

25

00:02:09,229 --> 00:02:06,960

struts and a mounting bracket but

26
00:02:11,089 --> 00:02:09,239
remember no actual solar rays are going

27
00:02:13,550 --> 00:02:11,099
to be put on today

28
00:02:16,190 --> 00:02:13,560
the spacewalk is a continuation or a

29
00:02:18,410 --> 00:02:16,200
part two spacewalk for man and wakata

30
00:02:21,890 --> 00:02:18,420
they began work to install this Hardware

31
00:02:23,630 --> 00:02:21,900
on Friday January 20th and are set to

32
00:02:26,330 --> 00:02:23,640
complete the job today over the course

33
00:02:28,250 --> 00:02:26,340
of a spacewalk that could last up to

34
00:02:30,290 --> 00:02:28,260
seven hours

35
00:02:32,210 --> 00:02:30,300
this includes finishing up some work on

36
00:02:34,610 --> 00:02:32,220
the lower strut and installing the mid

37
00:02:37,670 --> 00:02:34,620
strut I'll also be doing some get ahead

38
00:02:40,130 --> 00:02:37,680

tasks if time allows

39

00:02:41,930 --> 00:02:40,140

these are our space Walkers Nicole Mann

40

00:02:43,970 --> 00:02:41,940

sometimes you'll hear her referred to as

41

00:02:46,490 --> 00:02:43,980

duke she's got the spacesuit with the

42

00:02:48,290 --> 00:02:46,500

red stripes she'll be our ev1 today and

43

00:02:51,770 --> 00:02:48,300

koichi raquada from the Japanese

44

00:02:54,170 --> 00:02:51,780

Aerospace Exploration Agency is our ev2

45

00:03:04,990 --> 00:02:54,180

today he's in the suit with the with no

46

00:03:11,030 --> 00:03:09,530

so we are in the quest airlock aboard

47

00:03:12,949 --> 00:03:11,040

the International Space Station that's

48

00:03:15,649 --> 00:03:12,959

where these live views are coming from

49

00:03:20,149 --> 00:03:15,659

Quest consists of two parts the

50

00:03:25,190 --> 00:03:22,309

they're in the process of moving our

51
00:03:27,229 --> 00:03:25,200
space Walkers over to the crew lock

52
00:03:29,089 --> 00:03:27,239
where depressurization will take place

53
00:03:31,850 --> 00:03:29,099
but this view you're getting right now

54
00:03:33,770 --> 00:03:31,860
is in the equipment lock that's NASA

55
00:03:35,869 --> 00:03:33,780
astronaut Frank Rubio and the bluish

56
00:03:42,229 --> 00:03:35,879
black shirt and the glass is there to

57
00:03:47,149 --> 00:03:44,809
that's NASA astronaut Josh cassida in

58
00:03:48,770 --> 00:03:47,159
the Red Flannel the long sleeves on your

59
00:03:50,809 --> 00:03:48,780
screen now

60
00:03:53,449 --> 00:03:50,819
he's helping get our spacewalker suited

61
00:03:55,550 --> 00:03:53,459
up with the safer unit so their

62
00:03:58,149 --> 00:03:55,560
spacesuits are on and now he's

63
00:04:01,430 --> 00:03:58,159

installing this sort of backpack so

64

00:04:04,009 --> 00:04:01,440

stands for simplified aid for Eva rescue

65

00:04:06,050 --> 00:04:04,019

we don't plan on using this backpack

66

00:04:08,449 --> 00:04:06,060

during the spacewalk but in the unlikely

67

00:04:10,550 --> 00:04:08,459

event that they become untethered or

68

00:04:13,009 --> 00:04:10,560

unattached to the space station any way

69

00:04:27,830 --> 00:04:13,019

they can use these safers to get

70

00:04:31,969 --> 00:04:30,050

our spacewalkers are running about 35

71

00:04:33,770 --> 00:04:31,979

minutes ahead of schedule today and we

72

00:04:47,350 --> 00:04:33,780

expect depressurization to begin about

73

00:04:51,950 --> 00:04:49,969

shortly before our live coverage began

74

00:04:53,450 --> 00:04:51,960

the spacewalkers got into their suits

75

00:04:55,969 --> 00:04:53,460

and began what's known as their

76

00:04:57,770 --> 00:04:55,979

pre-breathing exercise this is a way for

77

00:04:59,930 --> 00:04:57,780

the astronauts to avoid decompression

78

00:05:02,450 --> 00:04:59,940

sickness something that scuba divers

79

00:05:05,090 --> 00:05:02,460

have to be careful of as well

80

00:05:07,430 --> 00:05:05,100

they put on masks and began to breathe

81

00:05:10,189 --> 00:05:07,440

pure oxygen and also completed a series

82

00:05:11,749 --> 00:05:10,199

of arm and leg exercises to purge their

83

00:05:13,969 --> 00:05:11,759

bodies of nitrogen

84

00:05:16,730 --> 00:05:13,979

decompression sickness can happen when

85

00:05:18,830 --> 00:05:16,740

gases like nitrogen in our body form

86

00:05:20,030 --> 00:05:18,840

bubbles in our blood and tissues so

87

00:05:21,590 --> 00:05:20,040

these preventative measures like

88

00:05:24,830 --> 00:05:21,600

breathing through oxygen and the

89

00:05:26,870 --> 00:05:24,840

exercise are critical before spacewalk

90

00:06:07,790 --> 00:05:26,880

so these were already completed before

91

00:06:12,350 --> 00:06:09,830

so you can see NASA astronaut Frank

92

00:06:14,930 --> 00:06:12,360

Rubio not in the spacesuit on the left

93

00:06:19,370 --> 00:06:14,940

of your screen there he's what's known

94

00:06:20,990 --> 00:06:19,380

as a suit IV the name is referring to a

95

00:06:21,950 --> 00:06:21,000

crew member who's responsible for

96

00:06:23,990 --> 00:06:21,960

getting

97

00:06:26,029 --> 00:06:24,000

through the procedures to safely get the

98

00:06:27,770 --> 00:06:26,039

spacewalkers out on their way out the

99

00:06:29,330 --> 00:06:27,780

door this includes helping the

100

00:06:32,029 --> 00:06:29,340

spacewalker put their spacesuit on

101
00:06:35,930 --> 00:06:32,039
recording the status of the suit and

102
00:06:40,430 --> 00:06:38,330
right now he's assisting our spacewalker

103
00:06:59,990 --> 00:06:40,440
the one inside the spacesuit NASA

104
00:07:05,150 --> 00:07:03,110
so in addition to Nicole Mann or Duke as

105
00:07:07,550 --> 00:07:05,160
her call sign is you may sometimes refer

106
00:07:09,650 --> 00:07:07,560
her but hear her referred to as duke

107
00:07:11,090 --> 00:07:09,660
you'll see her in the suit with the red

108
00:07:12,890 --> 00:07:11,100
stripes but another way that you can

109
00:07:14,450 --> 00:07:12,900
tell is that our two spacewalkers are

110
00:07:16,610 --> 00:07:14,460
from two different nations

111
00:07:19,070 --> 00:07:16,620
so you see that Napoleon has the

112
00:07:47,689 --> 00:07:19,080
American flag on hers while kuichiwakata

113
00:07:52,610 --> 00:07:50,689

you can see NASA astronaut Josh Cassida

114

00:07:55,430 --> 00:07:52,620
and the red shirt in the crew lock

115

00:07:58,129 --> 00:07:55,440
section of the quest airlock he's also

116

00:08:00,110 --> 00:07:58,139
known as a suit IV as well again

117

00:08:09,309 --> 00:08:00,120
assisting our spacewalkers get out the

118

00:08:14,930 --> 00:08:12,230
you may hear Nicole Mann or Duke

119

00:08:17,089 --> 00:08:14,940
referred to as ev1 that means she's

120

00:08:19,430 --> 00:08:17,099
responsible for operating the hatch and

121

00:08:21,110 --> 00:08:19,440
its thermal cover once depressurization

122

00:08:22,969 --> 00:08:21,120
is complete and the spacewalkers are

123

00:08:24,890 --> 00:08:22,979
ready to head out you may see live views

124

00:08:26,390 --> 00:08:24,900
of a door swinging open and that's

125

00:08:28,610 --> 00:08:26,400
Nicole man in the red striped suit

126
00:08:30,830 --> 00:08:28,620
making that happen she'll be the first

127
00:09:19,250 --> 00:08:30,840
to exit the airlock followed shortly by

128
00:09:24,769 --> 00:09:22,150
both spacewalkers now in the crew lock

129
00:09:27,110 --> 00:09:24,779
after they get configured in there with

130
00:09:30,290 --> 00:09:27,120
the help of our suit IVs that door will

131
00:09:32,509 --> 00:09:30,300
close and will only have views of

132
00:09:34,850 --> 00:09:32,519
our student IVs Frank Rubio and Josh

133
00:09:37,009 --> 00:09:34,860
cassida and then here in Mission Control

134
00:09:50,090 --> 00:09:37,019
Houston we'll do a go no-go Poll for

135
00:09:55,790 --> 00:09:52,910
you're watching live coverage of our

136
00:09:59,210 --> 00:09:55,800
space walk today this is part two of us

137
00:10:01,430 --> 00:09:59,220
spacewalk 84 that happened on January

138
00:10:04,850 --> 00:10:01,440

20th but even though it's a continuation

139

00:10:07,070 --> 00:10:04,860

it is indeed called U.S spacewalk 85

140

00:10:08,870 --> 00:10:07,080

this morning this of course would make

141

00:10:10,310 --> 00:10:08,880

it the second spacewalk for NASA

142

00:10:55,970 --> 00:10:10,320

astronaut Nicole man and Japanese

143

00:11:00,170 --> 00:10:58,009

you're getting a live view now of

144

00:11:02,329 --> 00:11:00,180

Mission Control Houston the space

145

00:11:04,550 --> 00:11:02,339

station is handing over Communications

146

00:11:07,610 --> 00:11:04,560

between its satellites and as a result

147

00:11:08,870 --> 00:11:07,620

we've lost our live video and audio feed

148

00:11:10,970 --> 00:11:08,880

just for a moment

149

00:11:12,650 --> 00:11:10,980

these communication handovers are

150

00:11:15,829 --> 00:11:12,660

planned and expected and we should get

151

00:11:17,690 --> 00:11:15,839

our live views back shortly

152

00:11:19,970 --> 00:11:17,700

in the meantime we do have a live view

153

00:11:22,190 --> 00:11:19,980

of Mission Control Houston

154

00:11:24,530 --> 00:11:22,200

our flight director oversees everyone in

155

00:11:27,230 --> 00:11:24,540

this room and our support rooms that

156

00:11:28,970 --> 00:11:27,240

aren't shown right now she gathers Intel

157

00:11:30,710 --> 00:11:28,980

from all of the experts and ultimately

158

00:11:34,970 --> 00:11:30,720

makes the decision on how to move

159

00:11:38,389 --> 00:11:36,650

and there she is popping into screen

160

00:11:40,250 --> 00:11:38,399

briefly on the lower right of your

161

00:11:42,470 --> 00:11:40,260

screen our flight director today is

162

00:11:47,829 --> 00:11:42,480

Chloe Maring she's a Pennsylvania native

163

00:11:53,030 --> 00:11:50,569

but on your screen

164

00:11:56,389 --> 00:11:53,040

uh we have NASA astronaut Xena Cardman

165

00:11:59,750 --> 00:11:56,399

who's our ground IV today there she is

166

00:12:01,009 --> 00:11:59,760

in the black jacket sitting down mid

167

00:12:02,930 --> 00:12:01,019

screen

168

00:12:05,329 --> 00:12:02,940

this is a similar role to a Capcom

169

00:12:08,030 --> 00:12:05,339

communicating from the grounds to the

170

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

astronauts on one we're putting on the

171

00:12:12,170 --> 00:12:10,079

final touches here putting them into the

172

00:12:16,610 --> 00:12:12,180

airlock and can you confirm again that

173

00:12:22,310 --> 00:12:20,389

good morning increment 68 this is Drew

174

00:12:24,110 --> 00:12:22,320

on console with Xena we can confirm the

175

00:12:31,490 --> 00:12:24,120

crew is not hot Mike yet and looking

176

00:12:35,329 --> 00:12:33,170

sounds great looking forward to working

177

00:12:36,769 --> 00:12:35,339

with you guys as well and you'll be

178

00:12:42,650 --> 00:12:36,779

hearing from these guys as soon as you

179

00:12:46,670 --> 00:12:44,930

so that was Josh cassida confirming that

180

00:12:48,710 --> 00:12:46,680

we're not able to hear the spacewalkers

181

00:12:50,569 --> 00:12:48,720

right now they've not yet turned on

182

00:12:52,610 --> 00:12:50,579

these microphones it's one of the steps

183

00:12:54,110 --> 00:12:52,620

in their procedures haven't accomplished

184

00:12:55,069 --> 00:12:54,120

it quite yet but they're moving down the

185

00:12:57,470 --> 00:12:55,079

checklist

186

00:12:58,730 --> 00:12:57,480

and NASA astronaut Xena Cardman is who

187

00:13:00,710 --> 00:12:58,740

will be communicating with our space

188

00:13:02,150 --> 00:13:00,720

Walkers out on their spacewalk today

189

00:13:16,190 --> 00:13:02,160

outside of the International Space

190

00:13:20,509 --> 00:13:18,470

so while we wait for depressurization to

191

00:13:24,530 --> 00:13:20,519

begin let's talk a little bit about the

192

00:13:29,629 --> 00:13:24,540

irosas these are roll out solar arrays i

193

00:13:31,310 --> 00:13:29,639

i s s r o roll out an s a solar array

194

00:13:32,990 --> 00:13:31,320

irosa

195

00:13:34,850 --> 00:13:33,000

they're attached to support structures

196

00:13:36,110 --> 00:13:34,860

and are unfurled the same way you'd roll

197

00:13:37,970 --> 00:13:36,120

out a rug

198

00:13:40,129 --> 00:13:37,980

they're not designed to replace the

199

00:13:42,949 --> 00:13:40,139

Space Station's Legacy arrays but rather

200

00:13:45,650 --> 00:13:42,959

to add the power add power to the Legacy

201
00:13:47,690 --> 00:13:45,660
arrays that they already provide they

202
00:13:50,389 --> 00:13:47,700
are unraveled over the top of the

203
00:13:52,129 --> 00:13:50,399
station's rigid Legacy arrays and even

204
00:13:54,590 --> 00:13:52,139
though they're partially blocking these

205
00:13:55,910 --> 00:13:54,600
Legacy arrays from the Sun the iroses

206
00:13:58,009 --> 00:13:55,920
are so efficient that it actually

207
00:14:40,430 --> 00:13:58,019
results in more power generation for the

208
00:14:44,509 --> 00:14:42,769
so the space station has eight power

209
00:14:50,150 --> 00:14:44,519
channels I'm gonna list them for you

210
00:14:52,610 --> 00:14:50,160
here they're 1A 1B 2A 2B 3A 3B and 4A

211
00:14:55,009 --> 00:14:52,620
and 4B so four of the eight power

212
00:14:57,530 --> 00:14:55,019
channels already have the irosa's

213
00:14:59,629 --> 00:14:57,540

rollout Soul Aries already installed but

214

00:15:01,069 --> 00:14:59,639

every Arosa needs to be paired with a

215

00:15:02,930 --> 00:15:01,079

support structure with a mounting

216

00:15:04,790 --> 00:15:02,940

bracket on it so that it can be properly

217

00:15:07,670 --> 00:15:04,800

installed to the space station foreign

218

00:15:09,170 --> 00:15:07,680

during the January 20th spacewalk wakata

219

00:15:11,689 --> 00:15:09,180

and Mann installed the mounting bracket

220

00:15:14,150 --> 00:15:11,699

on the 1B power Channel you see that on

221

00:15:16,670 --> 00:15:14,160

the left of your screen

222

00:15:18,829 --> 00:15:16,680

they moved on to work on the 1A Channel

223

00:15:20,030 --> 00:15:18,839

but ran into some difficulty during the

224

00:15:21,410 --> 00:15:20,040

installation

225

00:15:23,150 --> 00:15:21,420

teams here on the ground have

226

00:15:24,829 --> 00:15:23,160

communicated some possible solutions

227

00:15:26,750 --> 00:15:24,839

some troubleshooting items with our

228

00:15:28,790 --> 00:15:26,760

space Walkers and they're heading out

229

00:15:31,069 --> 00:15:28,800

the door today to give them a try and

230

00:15:32,509 --> 00:15:31,079

finish the installation remember no

231

00:15:34,129 --> 00:15:32,519

solar rays are being installed today

232

00:15:35,689 --> 00:15:34,139

we're just getting the hardware in place

233

00:15:36,650 --> 00:15:35,699

so that they can be installed in the

234

00:15:39,470 --> 00:15:36,660

future

235

00:15:41,449 --> 00:15:39,480

so in recap four power channels are

236

00:15:43,370 --> 00:15:41,459

completed with support structures and

237

00:15:45,530 --> 00:15:43,380

solar arrays they're done

238

00:15:47,269 --> 00:15:45,540

a fifth support structure was completed

239

00:15:49,550 --> 00:15:47,279

earlier this month and today our

240

00:15:51,110 --> 00:15:49,560

spacewalkers are installing the sixth

241

00:17:41,390 --> 00:15:51,120

and in the future these two structures

242

00:17:46,490 --> 00:17:44,270

and NASA astronaut Josh Casada in the

243

00:17:48,350 --> 00:17:46,500

red flannel shirt has just exited the

244

00:17:50,390 --> 00:17:48,360

crew lock having situated our space

245

00:17:53,270 --> 00:17:50,400

Walkers today and has moved back over to

246

00:17:57,710 --> 00:17:56,270

he and NASA astronaut Frank Rubio on the

247

00:17:59,870 --> 00:17:57,720

left of your screen there are going

248

00:18:01,190 --> 00:17:59,880

through a list of procedures to get

249

00:18:03,529 --> 00:18:01,200

these spacewalkers ready for

250

00:18:54,470 --> 00:18:03,539

depressurization it has not begun yet

251
00:18:58,370 --> 00:18:56,630
you're not hearing anything right now

252
00:19:00,650 --> 00:18:58,380
and that's pretty normal our

253
00:19:02,750 --> 00:19:00,660
spacewalkers have not yet turned on

254
00:19:04,610 --> 00:19:02,760
their microphones into a configuration

255
00:19:06,470 --> 00:19:04,620
that will be able to hear them but we

256
00:19:08,510 --> 00:19:06,480
should be able to hear their voices as

257
00:20:45,650 --> 00:19:08,520
well as the voices of our suit IVs Frank

258
00:20:49,850 --> 00:20:48,350
and the hatch is now closed our

259
00:21:06,590 --> 00:20:49,860
spacewalkers are on the other side of

260
00:21:11,150 --> 00:21:08,510
right now the crew lock and the

261
00:21:14,450 --> 00:21:11,160
equipment lock are roughly the same PSI

262
00:21:16,190 --> 00:21:14,460
a space station is kept around 14.7 or

263
00:21:18,289 --> 00:21:16,200

what you'd experience around sea level

264

00:21:19,850 --> 00:21:18,299

here on Earth that's what your body

265

00:21:22,250 --> 00:21:19,860

would experience

266

00:21:24,770 --> 00:21:22,260

once depressurization begins they're

267

00:21:26,870 --> 00:21:24,780

going to slowly bring the crew lock so

268

00:21:29,210 --> 00:21:26,880

the other side of the door down to

269

00:21:31,010 --> 00:21:29,220

vacuum they're going to slowly decrease

270

00:21:33,830 --> 00:21:31,020

the pressure and then they're going to

271

00:21:36,049 --> 00:21:33,840

stop when it hits about 5 PSI to do a

272

00:21:37,610 --> 00:21:36,059

check on the spacesuits make sure that

273

00:21:38,870 --> 00:21:37,620

there's no leaks and everything's in a

274

00:21:40,549 --> 00:21:38,880

good configuration

275

00:21:43,010 --> 00:21:40,559

and with the go here in Mission Control

276
00:22:04,549 --> 00:21:43,020
they're going to continue on to go down

277
00:22:04,559 --> 00:22:08,169
distance

278
00:22:08,179 --> 00:22:15,970
76 and 77 are complete

279
00:22:23,330 --> 00:22:20,330
I like Houston copies we've got uh 78 in

280
00:22:38,570 --> 00:22:23,340
work you guys will be picking up in step

281
00:22:42,850 --> 00:22:41,630
okay and uh Drew if you guys can uh also

282
00:22:45,770 --> 00:22:42,860
take

283
00:22:47,930 --> 00:22:45,780
79 and 80 decimal one and just let us

284
00:22:50,570 --> 00:22:47,940
know when the crew is helmet

285
00:22:52,730 --> 00:22:50,580
yeah we got that in work as well and uh

286
00:22:59,029 --> 00:22:52,740
so in the short order crew will be hot

287
00:22:59,039 --> 00:23:19,450
thanks

288
00:23:19,460 --> 00:23:26,020

and crew lock Houston you are hot Mike

289

00:23:26,030 --> 00:23:34,549

[Applause]

290

00:23:38,450 --> 00:23:36,710

and we just heard the voices of our

291

00:23:40,970 --> 00:23:38,460

space Walkers today for the first time

292

00:23:43,010 --> 00:23:40,980

NASA astronaut Nicole Mann our ev1 as

293

00:23:48,529 --> 00:23:43,020

she just referred to herself and ev2

294

00:25:10,960 --> 00:24:21,110

foreign

295

00:25:29,470 --> 00:25:12,549

[Applause]

296

00:25:40,130 --> 00:25:33,360

open TV special

297

00:25:42,950 --> 00:25:41,870

and for both of you

298

00:25:45,289 --> 00:25:42,960

um

299

00:25:58,970 --> 00:25:45,299

two pressure gauge and then it remains

300

00:26:02,390 --> 00:26:00,590

you're hearing NASA astronaut Frank

301

00:26:04,970 --> 00:26:02,400

Rubio communicating with our space

302

00:26:06,230 --> 00:26:04,980

Walkers Nicole Mann and koichiwakata who

303

00:26:07,870 --> 00:26:06,240

were just on the other side of the door

304

00:26:10,190 --> 00:26:07,880

with the window right there

305

00:26:21,970 --> 00:26:10,200

depressurization has begun with a go for

306

00:26:27,350 --> 00:26:25,370

down to five decimal zero when we hit

307

00:26:29,289 --> 00:26:27,360

six decimal zero we can both expect our

308

00:27:06,830 --> 00:26:29,299

tone

309

00:27:10,730 --> 00:27:09,230

so as depressurization is underway

310

00:27:12,409 --> 00:27:10,740

aboard the International Space Station

311

00:27:14,210 --> 00:27:12,419

we're in a brief Handover of our

312

00:27:16,430 --> 00:27:14,220

communication satellites

313

00:27:19,549 --> 00:27:16,440

we expect to get our live views back

314

00:27:21,950 --> 00:27:19,559

shortly meanwhile let me talk about some

315

00:27:24,649 --> 00:27:21,960

key figures here in the room uh NASA

316

00:27:26,930 --> 00:27:24,659

astronaut Xena Cardman is our ground IV

317

00:27:29,029 --> 00:27:26,940

today this is a similar role to Capcom

318

00:27:30,710 --> 00:27:29,039

but she'll specifically be talking to

319

00:27:33,649 --> 00:27:30,720

the astronauts outside of the space

320

00:27:37,850 --> 00:27:35,930

she joined our astronaut Corps in 2017

321

00:27:40,250 --> 00:27:37,860

and another key member here in Mission

322

00:27:43,190 --> 00:27:40,260

Control is our space walk officer Keith

323

00:27:45,710 --> 00:27:43,200

Johnson he knows the ins and outs of the

324

00:27:47,450 --> 00:27:45,720

spacewalks of the spacewalk all of the

325

00:27:49,490 --> 00:27:47,460

steps that the crew needs to complete

326
00:27:51,409 --> 00:27:49,500
and he consults with his team throughout

327
00:28:01,070 --> 00:27:51,419
the Spaceball at any real-time decisions

328
00:28:10,190 --> 00:28:02,810
we're back with our live views of the

329
00:28:40,610 --> 00:28:13,789
the crew lock is just above 10 psi

330
00:28:40,620 --> 00:28:46,610
ah

331
00:29:26,450 --> 00:29:21,370
a

332
00:29:28,310 --> 00:29:26,460
some time

333
00:29:31,370 --> 00:29:28,320
so while that happens we're going to do

334
00:29:32,750 --> 00:29:31,380
a little rundown of today's tasks write

335
00:29:34,310 --> 00:29:32,760
out the Starting Gate they'll turn on

336
00:29:36,289 --> 00:29:34,320
their hekas which are high definition

337
00:29:38,389 --> 00:29:36,299
cameras sometimes we'll be able to see

338
00:29:40,070 --> 00:29:38,399

views from their point of view

339

00:29:41,690 --> 00:29:40,080

they'll grab all of their supplies and

340

00:29:43,970 --> 00:29:41,700

tools that they need and make their way

341

00:29:46,370 --> 00:29:43,980

over to the work site on the 1A power

342

00:29:49,130 --> 00:29:46,380

channel to setup shop

343

00:29:51,289 --> 00:29:49,140

here at the 1A work site they'll find

344

00:29:53,389 --> 00:29:51,299

most of a completed support structure

345

00:29:55,130 --> 00:29:53,399

that looks like a pyramid

346

00:29:57,649 --> 00:29:55,140

they built this during their last

347

00:30:08,470 --> 00:29:57,659

spacewalk earlier this month it's almost

348

00:30:13,970 --> 00:30:11,870

the sounds that you're hearing now from

349

00:30:16,010 --> 00:30:13,980

your screen is normal and as part of the

350

00:30:32,510 --> 00:30:16,020

depressurization process that just means

351
00:30:32,520 --> 00:30:36,590

pass

352
00:30:36,600 --> 00:31:47,810

Ed

353
00:31:53,029 --> 00:31:50,510

once our spacewalkers are at their 1A

354
00:31:55,310 --> 00:31:53,039

power Channel work site today they'll be

355
00:31:57,889 --> 00:31:55,320

at this support structure that they've

356
00:31:59,210 --> 00:31:57,899

built during their last spacewalk then

357
00:32:01,010 --> 00:31:59,220

they're going to do some troubleshooting

358
00:32:02,810 --> 00:32:01,020

on the parts of the structure that gave

359
00:32:05,389 --> 00:32:02,820

them some trouble during the last

360
00:32:07,070 --> 00:32:05,399

installation and finish up their work

361
00:32:09,370 --> 00:32:07,080

then we'll move on to some other tasks

362
00:32:11,690 --> 00:32:09,380

to help our space walkers in the future

363
00:32:13,730 --> 00:32:11,700

Nicole Mann will route some cables

364

00:32:16,190 --> 00:32:13,740

needed when the solar arrays are

365

00:32:18,110 --> 00:32:16,200

installed she won't plug them in but

366

00:32:19,610 --> 00:32:18,120

she'll follow a path to get the cables

367

00:32:21,710 --> 00:32:19,620

to where they need to go

368

00:32:24,769 --> 00:32:21,720

and while Nicole Mann routes these

369

00:32:26,930 --> 00:32:24,779

cables koichiwakata will swap out a

370

00:32:29,210 --> 00:32:26,940

sticky portable foot restraint for a

371

00:32:31,370 --> 00:32:29,220

smoother one and Nicole man will join

372

00:32:33,110 --> 00:32:31,380

him at the end of this task also

373

00:32:34,549 --> 00:32:33,120

relocating a portable foot restraint

374

00:33:14,049 --> 00:32:34,559

just to bring it closer for future

375

00:33:14,059 --> 00:34:00,350

ah pass

376

00:34:00,360 --> 00:34:16,970

foreign

377

00:34:21,710 --> 00:34:19,070

the pressure in the suit lock has

378

00:34:23,869 --> 00:34:21,720

reached 6 PSI slowly going down to five

379

00:34:25,669 --> 00:34:23,879

at which point they'll do a leak check

380

00:35:47,930 --> 00:34:25,679

on these spacesuits and then proceed

381

00:35:52,069 --> 00:35:49,910

all right guys we're coming up on five

382

00:36:09,290 --> 00:35:52,079

PSI koichi the next section will be for

383

00:36:09,300 --> 00:36:21,950

all right okay

384

00:36:26,329 --> 00:36:23,630

okay next you're both going to be

385

00:36:27,890 --> 00:36:26,339

performing a leak check so switch

386

00:36:30,290 --> 00:36:27,900

display you're going to go to status

387

00:36:32,930 --> 00:36:30,300

until you see a leak check question mark

388

00:36:48,349 --> 00:36:32,940

displayed and then you'll have a

389

00:37:49,730 --> 00:36:51,050

apq in the leak check

390

00:37:49,740 --> 00:37:53,540

check

391

00:38:25,370 --> 00:37:55,370

[Music]

392

00:38:25,380 --> 00:38:55,790

foreign

393

00:38:55,800 --> 00:39:01,730

ah

394

00:39:18,950 --> 00:39:08,710

a

395

00:39:23,510 --> 00:39:20,870

copies

396

00:39:36,589 --> 00:39:23,520

and from here we'll be decreasing to two

397

00:39:40,910 --> 00:39:39,349

so the crew lock which is just behind

398

00:39:44,210 --> 00:39:40,920

the door with the window there started

399

00:39:46,250 --> 00:39:44,220

out at 14.7 PSI same as the rest of the

400

00:39:49,609 --> 00:39:46,260

International Space Station it has gone

401
00:39:51,770 --> 00:39:49,619
down to 5 PSI where we went through a

402
00:39:54,290 --> 00:39:51,780
expected pause in the depressurization

403
00:39:55,910 --> 00:39:54,300
to check for leaks seeing none we've

404
00:39:58,430 --> 00:39:55,920
continued on with the depressurization

405
00:40:00,589 --> 00:39:58,440
and the PSI sits at about four going

406
00:40:11,710 --> 00:40:00,599
down to vacuum

407
00:40:16,609 --> 00:40:14,750
we're in live coverage of a spacewalk

408
00:40:18,890 --> 00:40:16,619
they have not made it out the door yet

409
00:40:20,450 --> 00:40:18,900
but are expected to soon what you're

410
00:40:22,670 --> 00:40:20,460
seeing on your screen now is not

411
00:40:24,710 --> 00:40:22,680
actually our space walkers

412
00:40:26,450 --> 00:40:24,720
these are NASA astronauts Frank Rubio on

413
00:40:28,849 --> 00:40:26,460

the right and Josh cassida on the left

414

00:40:30,050 --> 00:40:28,859

looking into the window there just on

415

00:40:32,390 --> 00:40:30,060

the other side of the door are our

416

00:40:34,069 --> 00:40:32,400

spacewalkers donned in their spacesuits

417

00:40:36,230 --> 00:40:34,079

they're getting ready to go out the door

418

00:40:45,770 --> 00:40:36,240

after the pressure has gone down to

419

00:40:50,230 --> 00:40:48,290

the spacewalk has not officially started

420

00:40:52,250 --> 00:40:50,240

yet but after it does and our

421

00:40:54,349 --> 00:40:52,260

spacewalkers have gone out of the hatch

422

00:40:55,910 --> 00:40:54,359

they plan to make their way over to the

423

00:40:57,710 --> 00:40:55,920

1A work site where they're going to

424

00:41:00,050 --> 00:40:57,720

finish up construction of a support

425

00:43:04,790 --> 00:41:00,060

structure that will one day house a

426

00:43:09,829 --> 00:43:07,970

okay guys we're coming up on 2pxi koichi

427

00:43:32,170 --> 00:43:09,839

the next action will be for you

428

00:43:32,180 --> 00:43:41,109

mayonnaise of our clothes

429

00:43:49,490 --> 00:43:44,450

pump power off however

430

00:43:54,829 --> 00:43:52,309

okay and with that I will turn you over

431

00:43:57,170 --> 00:43:54,839

to Xena for your initial antenna config

432

00:43:59,750 --> 00:43:57,180

and Godspeed you guys are gonna crush it

433

00:44:02,690 --> 00:43:59,760

awesome thank you Frank and Josh thank

434

00:44:05,630 --> 00:44:02,700

you thank you Josh you guys are awesome

435

00:44:07,130 --> 00:44:05,640

hello everyone and ev2 your ground IV

436

00:44:22,790 --> 00:44:07,140

and the whole ground team are here ready

437

00:44:29,690 --> 00:44:25,490

back on black

438

00:44:33,170 --> 00:44:31,730

it's connected to my right key ring

439

00:44:36,170 --> 00:44:33,180
extender

440

00:44:42,890 --> 00:44:36,180
Red Hook is closed

441

00:44:48,349 --> 00:44:45,589
yellow hook

442

00:44:51,410 --> 00:44:48,359
because that's the green reel this close

443

00:44:56,630 --> 00:44:51,420
sliders locked black on black

444

00:45:04,430 --> 00:44:59,990
it's closed and it is unlocked

445

00:45:09,829 --> 00:45:04,440
both my reels are unlocked

446

00:45:09,839 --> 00:45:14,390
by RightWay Center

447

00:45:18,770 --> 00:45:16,370
is connected to my right viewing

448

00:45:20,089 --> 00:45:18,780
extender it's the sliders locked is

449

00:45:21,829 --> 00:45:20,099
black on black

450

00:45:23,690 --> 00:45:21,839
and can we see if you have eyes on your

451
00:45:26,569 --> 00:45:23,700
anchor hook to my wave Center

452
00:45:28,309 --> 00:45:26,579
yes you're

453
00:45:31,190 --> 00:45:28,319
all right I'm gonna hook it up let's do

454
00:45:38,390 --> 00:45:31,200
your right way better or both hooks

455
00:45:46,430 --> 00:45:42,230
okay uh ev2

456
00:45:51,530 --> 00:45:46,440
by the best way better is attached to

457
00:45:57,470 --> 00:45:54,230
the small hook of my left weight feather

458
00:46:00,109 --> 00:45:57,480
is recycled to my left even against in

459
00:46:06,050 --> 00:46:03,349
a Red Hook is attached to my left

460
00:46:08,690 --> 00:46:06,060
steering Extended Stay closer blocked

461
00:46:13,130 --> 00:46:08,700
pluck them back

462
00:46:15,050 --> 00:46:13,140
is attached to the green real gate holds

463
00:46:19,670 --> 00:46:15,060

the clock

464

00:46:23,089 --> 00:46:19,680

green Hook is attached to the red

465

00:46:25,250 --> 00:46:23,099

heel Gates closed Hook is unlocked

466

00:46:28,130 --> 00:46:25,260

and then the anger repeater that's true

467

00:46:29,329 --> 00:46:28,140

as I reported to Duke's right way that's

468

00:46:36,710 --> 00:46:29,339

better

469

00:46:39,589 --> 00:46:36,720

because that's to my uh right during the

470

00:46:41,809 --> 00:46:39,599

tender getting closer welcome back

471

00:46:44,030 --> 00:46:41,819

before complete

472

00:46:48,530 --> 00:46:44,040

copy all koichi if I could just check

473

00:46:48,540 --> 00:46:54,710

three

474

00:47:01,970 --> 00:46:57,530

81 ndv2 that's a good config for both of

475

00:47:06,710 --> 00:47:04,130

all right continuing along with our

476

00:47:08,510 --> 00:47:06,720

depress here when the crew lock DP DT is

477

00:47:13,930 --> 00:47:08,520

approximately zero you can both expect

478

00:47:13,940 --> 00:47:26,690

good copies

479

00:47:30,710 --> 00:47:29,150

he just heard the voice of our ground IV

480

00:47:32,329 --> 00:47:30,720

NASA astronaut Xena Cardman

481

00:47:33,770 --> 00:47:32,339

communicating with our spacewalkers

482

00:47:35,569 --> 00:47:33,780

you'll be hearing her voice a lot more

483

00:47:38,690 --> 00:47:35,579

as our spacewalkers get out the door

484

00:47:43,250 --> 00:47:40,190

they just went through the configuration

485

00:47:45,890 --> 00:47:43,260

of their Hooks and tethers

486

00:47:47,510 --> 00:47:45,900

it's very essential to stay attached to

487

00:47:49,130 --> 00:47:47,520

the International Space Station while

488

00:47:50,990 --> 00:47:49,140

they're maneuvering all around to their

489

00:47:52,309 --> 00:47:51,000

different work sites retrieving the

490

00:47:54,829 --> 00:47:52,319

portable foot restraints that are in

491

00:47:56,930 --> 00:47:54,839

their tasks today moving out to the 1A

492

00:47:58,670 --> 00:47:56,940

work site it's important that they get

493

00:48:00,230 --> 00:47:58,680

all of their hooks configured not

494

00:48:03,170 --> 00:48:00,240

Tangled and in a way that they're able

495

00:48:05,450 --> 00:48:03,180

to move freely and so that's what our

496

00:48:06,950 --> 00:48:05,460

ground I've easing a card man was

497

00:48:07,970 --> 00:48:06,960

going through with them and it looks

498

00:48:55,690 --> 00:48:07,980

like everything is in a good

499

00:48:59,809 --> 00:48:58,069

depressurization is still underway in

500

00:49:02,450 --> 00:48:59,819

the crew lock we're sitting at about one

501
00:49:04,849 --> 00:49:02,460
PSI going down to vacuum doesn't exactly

502
00:49:08,270 --> 00:49:04,859
have to be 0.0 but they are going down

503
00:49:10,309 --> 00:49:08,280
maybe around 0.5 or so in the meantime

504
00:49:12,710 --> 00:49:10,319
let's talk let's introduce our space

505
00:49:16,790 --> 00:49:12,720
Walkers today

506
00:49:18,290 --> 00:49:16,800
NASA astronaut Nicole Mann is our ev1 in

507
00:49:20,809 --> 00:49:18,300
the suit with the red stripes you may

508
00:49:24,290 --> 00:49:20,819
hear her referred to as duke

509
00:49:27,650 --> 00:49:24,300
and we have koichi wakata from Japan

510
00:49:30,050 --> 00:49:27,660
this is his second space walks same as

511
00:49:33,650 --> 00:49:30,060
Nicole Mann they both

512
00:49:36,170 --> 00:49:33,660
went on a spacewalk on January 20th to

513
00:49:38,750 --> 00:49:36,180

begin the installation on this mod kit

514

00:49:40,609 --> 00:49:38,760

so to speak it's what the future solar

515

00:49:42,470 --> 00:49:40,619

arrays are going to sit on

516

00:49:44,809 --> 00:49:42,480

so this is their second spacewalk

517

00:49:47,630 --> 00:49:44,819

continuing that tasks their first one

518

00:49:50,109 --> 00:49:47,640

lasted seven hours and 21 minutes

519

00:49:52,670 --> 00:49:50,119

and the spacewalk is the

520

00:49:54,290 --> 00:49:52,680

259th spacewalk in support of space

521

00:49:56,510 --> 00:49:54,300

station assembly maintenance and

522

00:50:01,790 --> 00:49:56,520

upgrades and these six spacewalk of

523

00:50:01,800 --> 00:51:04,430

ah

524

00:51:10,010 --> 00:51:06,890

we expect depressurization to be done in

525

00:51:11,569 --> 00:51:10,020

less than 10 minutes on going from the

526
00:51:15,349 --> 00:51:11,579
original pressure of the International

527
00:51:17,870 --> 00:51:15,359
Space Station 14.7 down to five when

528
00:51:19,910 --> 00:51:17,880
they did their uh soup check make sure

529
00:51:21,650 --> 00:51:19,920
that there's not any leaks in there it

530
00:51:24,410 --> 00:51:21,660
went pretty quickly but when we're going

531
00:51:26,150 --> 00:51:24,420
from five down to vacuum the process is

532
00:51:28,250 --> 00:51:26,160
a little bit more deliberate more

533
00:51:30,890 --> 00:51:28,260
careful we want to make sure our space

534
00:51:33,710 --> 00:51:30,900
Walkers are healthy and ready for their

535
00:51:36,650 --> 00:51:33,720
spacewalk so we do move a little slower

536
00:52:18,890 --> 00:51:36,660
the crew lock is about 0.8 PSI going

537
00:52:23,630 --> 00:52:21,589
we expect NASA astronaut Nicole Mann to

538
00:52:25,809 --> 00:52:23,640

meet the first out the door today

539

00:52:28,430 --> 00:52:25,819

she'll be followed shortly after by

540

00:52:32,030 --> 00:52:28,440

koichiwakata but before koichi wakada

541

00:52:34,250 --> 00:52:32,040

fully egresses or exits the airlock

542

00:52:35,990 --> 00:52:34,260

he'll be handing some equipment to

543

00:52:38,510 --> 00:52:36,000

Nicole man that they'll need on today's

544

00:52:41,690 --> 00:52:38,520

spacewalk this includes the mid-strut

545

00:52:43,130 --> 00:52:41,700

remember that they've already completed

546

00:52:45,170 --> 00:52:43,140

most of the structure that they're

547

00:52:47,210 --> 00:52:45,180

building today but they didn't complete

548

00:52:48,890 --> 00:52:47,220

the mid strut

549

00:52:50,990 --> 00:52:48,900

excuse me they didn't complete the mid

550

00:52:53,809 --> 00:52:51,000

strut so they're taking that out with

551
00:52:56,930 --> 00:52:53,819
them to their work site so wakata will

552
00:52:58,730 --> 00:52:56,940
hand man the mid strut he'll also hand

553
00:53:01,130 --> 00:52:58,740
her over a cable bag that they might

554
00:53:02,930 --> 00:53:01,140
need later in the spacewalk and then he

555
00:54:37,010 --> 00:53:02,940
himself will egress or exit the space

556
00:54:37,020 --> 00:55:51,829
foreign

557
00:55:51,839 --> 00:56:10,970
ah

558
00:56:16,670 --> 00:56:14,630
we're getting close to a PSI of 0.5

559
00:56:18,530 --> 00:56:16,680
which means you'll begin to hear some

560
00:56:20,930 --> 00:56:18,540
chatter from our suit IVs that you see

561
00:56:22,910 --> 00:56:20,940
on screen there NASA astronaut Josh

562
00:56:24,290 --> 00:56:22,920
cassida on the left and that's astronaut

563
00:57:03,410 --> 00:56:24,300

Frank rubia on the right with more

564

00:57:03,420 --> 00:57:11,210

foreign

565

00:57:15,829 --> 00:57:13,430

NASA astronaut Frank Rubio there

566

00:57:18,410 --> 00:57:15,839

patiently waiting as the pressure gets

567

00:58:22,130 --> 00:57:18,420

down to 0.5 PSI demonstrating the

568

00:58:29,690 --> 00:58:25,309

crew we are less than 0.5 PSI you are go

569

00:58:29,700 --> 00:58:51,950

it was

570

00:59:19,390 --> 00:58:54,109

Mission Control has given the go to open

571

00:59:19,400 --> 00:59:24,849

ET that would be great okay

572

00:59:24,859 --> 00:59:39,170

thank you

573

00:59:43,490 --> 00:59:41,329

and with the go from Mission Control our

574

00:59:47,210 --> 00:59:43,500

spacewalkers have released a valve that

575

00:59:47,220 --> 00:59:52,490

yeah I'm also rolled

576

00:59:56,870 --> 00:59:54,470

shortly after this thermal cover is

577

01:00:03,230 --> 00:59:56,880

popped open then the hatch itself the

578

01:00:09,349 --> 01:00:05,510

and I come down so I can get it last

579

01:00:21,890 --> 01:00:10,789

let's see if you can do my little feet

580

01:00:21,900 --> 01:00:29,990

okay the hatch is open and in the happy

581

01:00:34,549 --> 01:00:32,870

okay we copy hatches open and Josh and

582

01:00:44,089 --> 01:00:34,559

Frank you can take the emergency empath

583

01:00:44,099 --> 01:00:51,289

emergency Tampa quote

584

01:00:57,230 --> 01:00:54,589

copy Frank okay crew on your DCM switch

585

01:01:02,030 --> 01:00:57,240

power to bat stagger your switch throws

586

01:01:02,040 --> 01:01:08,210

batteries

587

01:01:08,220 --> 01:01:16,190

okay

588

01:01:16,200 --> 01:01:19,609

One battery

589

01:01:35,569 --> 01:01:22,190

copy both in battery switch your display

590

01:01:44,530 --> 01:01:38,930

great news on the UIA switch power for

591

01:01:52,609 --> 01:01:47,770

38 or eb1

592

01:01:59,750 --> 01:01:52,619

132 both off oil LEDs are off copy four

593

01:01:59,760 --> 01:02:13,730

it

594

01:02:18,109 --> 01:02:16,490

and you heard our ground IV today NASA

595

01:02:20,750 --> 01:02:18,119

astronaut Xena Cardman here in mission

596

01:02:22,190 --> 01:02:20,760

control with us talking to our space

597

01:02:24,170 --> 01:02:22,200

Walkers just on the other side of the

598

01:02:25,849 --> 01:02:24,180

door that you see there with the window

599

01:02:27,589 --> 01:02:25,859

walking them through some of their

600

01:02:29,329 --> 01:02:27,599

procedures before they get out the door

601
01:02:31,309 --> 01:02:29,339
one of them being turning their

602
01:02:32,750 --> 01:02:31,319
spacesuits onto battery power which

603
01:02:35,150 --> 01:02:32,760
marks the official start of the

604
01:02:48,849 --> 01:02:35,160
spacewalk and both spacesuits have been

605
01:02:55,309 --> 01:02:52,069
is disconnected third in the pouch and

606
01:03:01,069 --> 01:02:58,430
copy ev1 you can also install your DCM

607
01:03:22,370 --> 01:03:03,049
these young peppers and salt the easy

608
01:03:30,650 --> 01:03:25,849
82 this is disconnected and explode in

609
01:03:33,710 --> 01:03:30,660
the pouch and the DCM cover is the best

610
01:03:36,410 --> 01:03:33,720
okay copy you both have your su's stowed

611
01:03:38,569 --> 01:03:36,420
with DCM covers installed

612
01:03:42,549 --> 01:03:38,579
check depressed pump man ISO valve

613
01:03:42,559 --> 01:03:47,569

manual as the valve is closed

614

01:03:47,579 --> 01:03:55,390

take your tcv max hot

615

01:03:55,400 --> 01:04:03,710

and work

616

01:04:03,720 --> 01:04:09,370

foreign

617

01:04:13,190 --> 01:04:11,750

and now that our spacewalkers have

618

01:04:15,650 --> 01:04:13,200

turned their suits on to battery power

619

01:04:19,730 --> 01:04:15,660

we have an official spacewalk start time

620

01:04:22,849 --> 01:04:19,740

of 6 45 a.m Central Time 7 45 a.m

621

01:04:27,829 --> 01:04:24,890

this spacewalk is expected to last up to

622

01:04:30,049 --> 01:04:27,839

seven hours to complete installation of

623

01:04:32,990 --> 01:04:30,059

a mounting bracket that will one day

624

01:04:36,770 --> 01:04:33,000

house in irosa or ISS roll out solar

625

01:04:58,069 --> 01:04:36,780

array in support of giving the space

626

01:05:05,270 --> 01:04:59,930

Copy Max hot

627

01:05:12,890 --> 01:05:07,849

water's on for easy one

628

01:05:20,829 --> 01:05:15,410

coffee water on for you both check your

629

01:05:20,839 --> 01:05:25,010

blank by off easy one

630

01:05:25,020 --> 01:05:28,549

and bite off

631

01:05:38,750 --> 01:05:31,370

take your tcv set as desired reminder

632

01:05:38,760 --> 01:05:49,620

you do in work

633

01:05:49,630 --> 01:06:00,770

[Applause]

634

01:06:10,510 --> 01:06:02,870

Coffee five and seven

635

01:06:18,109 --> 01:06:13,430

1 4.2

636

01:06:22,970 --> 01:06:20,510

copy four decimal two and four decimal

637

01:06:26,990 --> 01:06:22,980

three set your visors as required you'll

638

01:06:27,000 --> 01:06:34,910

es down five

639

01:06:39,410 --> 01:06:37,490

as our ground IV NASA astronaut and Xena

640

01:06:41,270 --> 01:06:39,420

carbon just relayed up to our space

641

01:06:49,789 --> 01:06:41,280

Walkers the International Space Station

642

01:06:54,470 --> 01:06:53,089

space station is currently over the

643

01:06:56,029 --> 01:06:54,480

South Pacific Ocean

644

01:07:01,490 --> 01:06:56,039

and it's nice and lit as our

645

01:07:06,289 --> 01:07:04,549

okay with that ev1 you are ready to open

646

01:07:08,210 --> 01:07:06,299

the hatch thermal cover

647

01:07:10,309 --> 01:07:08,220

release the hook from the magnetic plate

648

01:07:11,930 --> 01:07:10,319

d-ring attach the hook to the stowage

649

01:07:28,010 --> 01:07:11,940

tether point and cinch the strap until

650

01:07:33,049 --> 01:07:30,529

our spacewalkers have completed steps

651
01:07:35,569 --> 01:07:33,059
with our ground IV that they have to do

652
01:07:37,730 --> 01:07:35,579
after depressurization

653
01:07:40,309 --> 01:07:37,740
and NASA astronaut Nicole Mann is

654
01:07:42,650 --> 01:07:40,319
opening the thermal hatch cover as part

655
01:07:43,970 --> 01:07:42,660
of her responsibilities as ev1 today you

656
01:08:20,930 --> 01:07:43,980
can see the motion in the dead center of

657
01:08:30,950 --> 01:08:24,410
okay uh the thermal cover book is set

658
01:08:35,990 --> 01:08:33,950
copy Duke you are go to open that

659
01:08:39,229 --> 01:08:36,000
thermal cover egress the airlock and

660
01:08:43,370 --> 01:08:41,450
okay criminal cover is open and I'm

661
01:08:45,110 --> 01:08:43,380
ingressing

662
01:08:47,209 --> 01:08:45,120
the hatch is open and with the go from

663
01:08:51,169 --> 01:08:47,219

Mission Control Houston Ness astronaut

664

01:08:53,269 --> 01:08:51,179

Nicole Manor ev1 is egressing or exiting

665

01:08:55,910 --> 01:08:53,279

the airlock to begin her second

666

01:09:29,030 --> 01:08:55,920

spacewalk that began at 6 45 a.m Central

667

01:09:35,030 --> 01:09:32,630

okay anyone is out of airlock

668

01:09:37,910 --> 01:09:35,040

great work Duke you can turn on your

669

01:09:43,970 --> 01:09:37,920

heka lchi you'll get the midstart ready

670

01:09:51,110 --> 01:09:47,329

it's on for easy one okay do you need to

671

01:09:55,490 --> 01:09:51,120

copies and do can you see the uh

672

01:09:59,270 --> 01:09:57,650

NASA astronaut Nicole man has exited the

673

01:10:01,189 --> 01:09:59,280

airlock you can see her on your screen

674

01:10:03,590 --> 01:10:01,199

in the suit with the red stripes around

675

01:10:06,070 --> 01:10:03,600

her thighs

676

01:10:09,709 --> 01:10:07,910

koichiwakata is going to now hand her

677

01:10:36,830 --> 01:10:09,719

some equipment that they'll need during

678

01:10:40,970 --> 01:10:38,390

you might hear some chatter about

679

01:10:44,030 --> 01:10:40,980

turning on their hekas this is one of

680

01:10:47,149 --> 01:10:44,040

the steps in their procedures

681

01:10:50,390 --> 01:10:47,159

we may occasionally get views from their

682

01:10:52,790 --> 01:10:50,400

point of view Nicole Mann 's helmet

683

01:10:54,530 --> 01:10:52,800

camera would be listed as number 22 you

684

01:10:56,090 --> 01:10:54,540

might see that number burned into some

685

01:10:57,790 --> 01:10:56,100

of the screens that means we're looking

686

01:11:16,729 --> 01:10:57,800

at her point of view

687

01:11:27,830 --> 01:11:22,189

okay

688

01:11:31,189 --> 01:11:29,450

when a brief hand over here in mission

689

01:11:37,430 --> 01:11:31,199

control but we expect to get our live

690

01:11:41,570 --> 01:11:39,110

your next steps once you've got that

691

01:11:41,580 --> 01:11:46,850

will be to transfer the cable bags

692

01:11:46,860 --> 01:11:56,090

okay

693

01:11:59,870 --> 01:11:58,070

so while we were in that Handover NASA

694

01:12:02,030 --> 01:11:59,880

astronaut koichiwakata just handed

695

01:12:03,950 --> 01:12:02,040

Nicole man uh what she's holding there

696

01:12:06,110 --> 01:12:03,960

that's the mid strut that they'll need

697

01:12:08,570 --> 01:12:06,120

to install later today he's in the

698

01:12:09,890 --> 01:12:08,580

process of handing her a cable bag that

699

01:12:19,189 --> 01:12:09,900

they'll be using towards the end of the

700

01:12:24,169 --> 01:12:21,770

she noted that she'll be stowing the mid

701

01:12:25,970 --> 01:12:24,179

strut on her brt that's what she's

702

01:12:28,130 --> 01:12:25,980

working on that refers to the body

703

01:12:30,050 --> 01:12:28,140

restraint tether like we talked about

704

01:12:32,090 --> 01:12:30,060

earlier they've got a number of tethers

705

01:12:33,470 --> 01:12:32,100

and hooks to attach themselves and their

706

01:12:43,610 --> 01:12:33,480

equipment to the space station so it

707

01:12:43,620 --> 01:13:05,630

here

708

01:13:20,209 --> 01:13:08,030

okay please I'm ready for the cable back

709

01:13:20,219 --> 01:13:24,050

and I

710

01:13:29,990 --> 01:13:26,870

okay you had a control hey you still

711

01:13:30,830 --> 01:13:30,000

read it okay uh the uh threat down to

712

01:13:33,770 --> 01:13:30,840

the airlock

713

01:13:33,780 --> 01:13:36,970

um

714

01:13:36,980 --> 01:13:41,209

the cable bag

715

01:13:41,219 --> 01:13:43,960

okay

716

01:13:43,970 --> 01:13:50,570

[Applause]

717

01:13:50,580 --> 01:13:54,709

okay

718

01:14:00,290 --> 01:13:57,669

you need to also

719

01:14:02,930 --> 01:14:00,300

hey from koichi you can egress the

720

01:14:08,830 --> 01:14:02,940

airlock turn on your hekka and receive

721

01:14:13,610 --> 01:14:11,510

has successfully handed both the mid

722

01:14:16,130 --> 01:14:13,620

strut and the cable bag over to Nicole

723

01:14:17,990 --> 01:14:16,140

Mann he's set to egress or exit the

724

01:14:19,850 --> 01:14:18,000

International Space Station and take

725

01:14:27,290 --> 01:14:19,860

that cable bag back from Nicole man as

726

01:14:30,709 --> 01:14:28,669

foreign

727

01:14:33,350 --> 01:14:30,719

we're not actually installing these

728

01:14:34,910 --> 01:14:33,360

cables today on today's space walk but

729

01:14:36,050 --> 01:14:34,920

rather these are some get ahead tasks

730

01:14:38,149 --> 01:14:36,060

that they can do to help future

731

01:14:39,470 --> 01:14:38,159

spacewalkers get the cables where they

732

01:14:41,450 --> 01:14:39,480

need to go without actually plugging

733

01:15:03,229 --> 01:14:41,460

them in making sure they're not Tangled

734

01:15:03,239 --> 01:15:07,030

is

735

01:15:07,040 --> 01:15:10,669

good morning okay

736

01:15:10,679 --> 01:15:27,350

let me check that

737

01:15:27,360 --> 01:15:48,110

looks like umbilical is voted around

738

01:15:52,790 --> 01:15:49,680

together

739

01:15:58,430 --> 01:15:55,430

but let me uh

740

01:16:01,310 --> 01:15:58,440

that's the uh

741

01:16:03,290 --> 01:16:01,320

Festival of the uh

742

01:16:04,810 --> 01:16:03,300

umbilical and then uh heads up for

743

01:16:07,610 --> 01:16:04,820

koichi

744

01:16:24,950 --> 01:16:07,620

there is a small small rat floating free

745

01:16:24,960 --> 01:16:29,950

foreign

746

01:16:29,960 --> 01:16:34,729

if you get eyes on

747

01:16:34,739 --> 01:16:52,790

idea

748

01:16:52,800 --> 01:17:06,709

foreign

749

01:17:06,719 --> 01:17:30,070

checking

750

01:17:34,250 --> 01:17:33,050

looks like I have full video on feathers

751
01:17:39,410 --> 01:17:34,260
with me

752
01:17:41,570 --> 01:17:39,420
okay copy it as long as you both have

753
01:17:43,910 --> 01:17:41,580
your brt reps and all of your expected

754
01:17:46,850 --> 01:17:43,920
rets on your mini workstation koichi you

755
01:17:52,430 --> 01:17:46,860
can secure that in the airlock if you

756
01:17:58,010 --> 01:17:55,430
I uh

757
01:18:01,310 --> 01:17:58,020
unless there's a need for that

758
01:18:09,410 --> 01:18:01,320
I will keep I will throw this in the

759
01:18:13,370 --> 01:18:11,510
Luigi we recommend actually bringing it

760
01:18:16,550 --> 01:18:13,380
with you if you want to attach it to

761
01:18:17,930 --> 01:18:16,560
your mini workstation or to a bag

762
01:18:31,490 --> 01:18:17,940
okay

763
01:18:36,410 --> 01:18:34,370

that's astronaut Nicole Mann is there in

764

01:18:38,450 --> 01:18:36,420

the upper middle of your screen in the

765

01:18:40,370 --> 01:18:38,460

spacesuit with the red stripes she's

766

01:18:43,790 --> 01:18:40,380

carrying some equipment with her

767

01:18:45,950 --> 01:18:43,800

Japanese astronaut koichiwakata is still

768

01:18:47,209 --> 01:18:45,960

in the airlock working his way on

769

01:18:50,030 --> 01:18:47,219

getting all of the equipment that he

770

01:18:54,350 --> 01:18:50,040

needs and working on egressing or

771

01:18:54,360 --> 01:19:02,689

okay umbilical it's now clear

772

01:19:06,770 --> 01:19:05,149

job quiche and just let us know if

773

01:19:10,209 --> 01:19:06,780

you're grabbing that red and taking it

774

01:19:18,169 --> 01:19:12,709

with me

775

01:19:22,250 --> 01:19:20,090

EU

776

01:19:24,550 --> 01:19:22,260

on today a lot

777

01:19:27,950 --> 01:19:24,560

so uh

778

01:19:33,169 --> 01:19:27,960

okay copy and did you just stash the red

779

01:19:33,179 --> 01:19:37,010

perfect thanks so much

780

01:19:37,020 --> 01:19:46,729

okay no problem coming out

781

01:19:56,630 --> 01:19:49,970

okay I'm still good

782

01:19:56,640 --> 01:20:19,870

I got it thank you

783

01:20:24,290 --> 01:20:22,370

we're getting a view of the spacewalk

784

01:20:27,110 --> 01:20:24,300

from NASA astronaut Nicole man's point

785

01:20:32,470 --> 01:20:27,120

of view as koichiwakata exits the

786

01:20:36,830 --> 01:20:34,970

starting to get some Earth views as well

787

01:20:40,970 --> 01:20:36,840

from her point of view the International

788

01:21:07,910 --> 01:20:40,980

Space Station is flying over Chile at

789

01:21:07,920 --> 01:21:12,950

hey I am

790

01:21:12,960 --> 01:21:16,910

out

791

01:21:16,920 --> 01:21:29,090

I'm gonna turn on difficult

792

01:21:29,100 --> 01:21:35,169

I see her green LED on now

793

01:21:35,179 --> 01:21:43,430

so uh yeah I think you can pickle yeah

794

01:21:51,610 --> 01:21:44,510

thank you

795

01:21:55,669 --> 01:21:53,689

kawichiwakada now receiving the cable

796

01:21:57,830 --> 01:21:55,679

bag he had initially handed it to Nicole

797

01:22:00,669 --> 01:21:57,840

man just yeah great is now taking it

798

01:22:03,410 --> 01:22:00,679

back config outside the airlock

799

01:22:05,450 --> 01:22:03,420

koichi will get your haircut turned on I

800

01:22:12,110 --> 01:22:05,460

think you did already and then we'll

801
01:22:21,000 --> 01:22:14,090

okay

802
01:22:34,189 --> 01:22:28,220

[Music]

803
01:22:36,410 --> 01:22:34,199

baseball handle your left one is down

804
01:22:44,090 --> 01:22:36,420

uh your right one can you move your PPT

805
01:22:47,570 --> 01:22:46,189

it's uh that one looks like it's up a

806
01:22:49,250 --> 01:22:47,580

little bit if you push down on your

807
01:22:57,709 --> 01:22:49,260

right paper handle

808
01:22:57,719 --> 01:23:05,209

I'm slowly down yeah

809
01:23:09,850 --> 01:23:07,550

okay both your paper handles are down

810
01:23:12,229 --> 01:23:09,860

okay okay

811
01:23:14,270 --> 01:23:12,239

and I see all of our feathers in front

812
01:23:15,410 --> 01:23:14,280

of us they look good okay I'll check

813
01:23:17,510 --> 01:23:15,420

yours

814

01:23:22,130 --> 01:23:17,520

I see ya

815

01:23:26,570 --> 01:23:22,140

Decker LED it's called wvs LEDs upon

816

01:23:32,570 --> 01:23:29,330

up DLT services

817

01:23:37,570 --> 01:23:32,580

see your left all right safer handle and

818

01:23:43,370 --> 01:23:40,970

I told the paper handles it down and

819

01:23:50,990 --> 01:23:43,380

there is good and they might be the main

820

01:23:59,229 --> 01:23:53,030

copy you both that's a good check we'll

821

01:24:16,250 --> 01:24:01,910

for anyone

822

01:24:22,669 --> 01:24:19,370

and stand by for you both we may have

823

01:24:24,830 --> 01:24:22,679

you just check koichi's safer handled

824

01:24:27,709 --> 01:24:24,840

door check that the door did not

825

01:24:27,719 --> 01:24:31,729

okay

826

01:24:47,330 --> 01:24:33,530

for the door

827

01:24:54,830 --> 01:24:49,310

let me know if you need a uh if you have

828

01:25:00,890 --> 01:24:57,890

okay Duke and Gucci we copy that we

829

01:25:03,169 --> 01:25:00,900

trust your eyes on and with that

830

01:25:05,689 --> 01:25:03,179

Duke you can translate to the Anchor

831

01:25:08,030 --> 01:25:05,699

location that's at the s1s3 interface

832

01:25:09,709 --> 01:25:08,040

just below the starboard seated cart as

833

01:25:11,810 --> 01:25:09,719

you start translating just a couple

834

01:25:13,910 --> 01:25:11,820

cautions avoid contact with radiators

835

01:25:29,090 --> 01:25:13,920

and flex hoses and don't contact the

836

01:25:33,110 --> 01:25:31,310

and after completing their buddy checks

837

01:25:35,750 --> 01:25:33,120

they are off onto their work sites

838

01:25:37,370 --> 01:25:35,760

during these buddy checks kuichiwakada

839

01:25:40,850 --> 01:25:37,380

Nicole man checked out their

840

01:25:43,550 --> 01:25:40,860

counterparts made sure that the green

841

01:25:45,350 --> 01:25:43,560

lights were on on their cameras as well

842

01:25:47,450 --> 01:25:45,360

as some others they also checked out

843

01:25:49,970 --> 01:25:47,460

their safer handles member safer we

844

01:25:52,250 --> 01:25:49,980

talked about earlier in the coverage

845

01:25:54,050 --> 01:25:52,260

safer being the simplified aid for Eva

846

01:25:55,629 --> 01:25:54,060

rescue that's these backpacks they're

847

01:25:57,649 --> 01:25:55,639

wearing on their backs

848

01:26:00,169 --> 01:25:57,659

in the unlikely event that they're

849

01:26:06,590 --> 01:26:00,179

separated from the space station these

850

01:26:10,010 --> 01:26:08,330

in the unlikely event that they do get

851
01:26:11,750 --> 01:26:10,020
separated from the space station there's

852
01:26:13,250 --> 01:26:11,760
a button that deploys handles that

853
01:26:14,930 --> 01:26:13,260
control these safers

854
01:26:17,030 --> 01:26:14,940
and it's easy to accidentally push this

855
01:26:18,470 --> 01:26:17,040
button so they were just discussing and

856
01:26:21,830 --> 01:26:18,480
making sure that these handles are in

857
01:26:23,209 --> 01:26:21,840
fact down on both both spacewalkers and

858
01:26:29,270 --> 01:26:23,219
we confirm that they are and so now

859
01:26:33,110 --> 01:26:31,490
and koichi if you could also attend the

860
01:26:35,990 --> 01:26:33,120
hatch thermal cover clothes that would

861
01:26:36,000 --> 01:26:41,209
yeah it worked

862
01:26:45,890 --> 01:26:43,850
okay I'm putting a format for everything

863
01:27:28,370 --> 01:26:45,900

here at the top of the beautiful fur

864

01:27:32,390 --> 01:27:30,290

you're getting the point of view of

865

01:27:36,010 --> 01:27:32,400

Japanese astronaut koichiwakata as he

866

01:27:38,450 --> 01:27:36,020

works to close the thermal hatch cover

867

01:27:40,550 --> 01:27:38,460

meanwhile Nicole Mann is off to her work

868

01:27:43,669 --> 01:27:40,560

site you may have heard them discuss the

869

01:27:45,110 --> 01:27:43,679

S1 S3 in terms of orientation of the

870

01:27:46,790 --> 01:27:45,120

space station this refers to the

871

01:27:49,250 --> 01:27:46,800

starboard side

872

01:27:50,990 --> 01:27:49,260

of course in space it's It's tricky to

873

01:27:58,790 --> 01:27:51,000

find your way around so they do use

874

01:28:04,310 --> 01:28:01,729

on that mile marker Duke

875

01:28:06,350 --> 01:28:04,320

it'll be right at the S1 S3 interface

876

01:28:15,890 --> 01:28:06,360

I'll get you a mile marker

877

01:28:21,350 --> 01:28:18,830

so S1 is pretty close to the center of

878

01:28:23,390 --> 01:28:21,360

the space station and when you get more

879

01:28:25,850 --> 01:28:23,400

towards the outer edges they refer to

880

01:28:28,669 --> 01:28:25,860

that as the S6

881

01:29:02,510 --> 01:28:28,679

and Duke looks like 50

882

01:29:06,229 --> 01:29:04,430

this is the point of view of NASA

883

01:29:09,050 --> 01:29:06,239

astronaut Nicole Mann

884

01:29:14,450 --> 01:29:09,060

Japanese astronaut kuichiwakata is still

885

01:29:29,629 --> 01:29:18,229

copy Duke you'll attach your ev1 anchor

886

01:29:29,639 --> 01:29:42,350

and that's the smaller diagonal one

887

01:29:42,360 --> 01:30:15,470

okay

888

01:30:22,790 --> 01:30:18,110

copy Duke you can now attach kuichi's

889

01:30:24,590 --> 01:30:22,800

ev2 anchor hook to F3 handrail 3011

890

01:30:45,890 --> 01:30:24,600

that's the slightly longer vertical

891

01:30:50,149 --> 01:30:48,350

now that both suppose now that both

892

01:30:52,189 --> 01:30:50,159

spacewalkers are outside of the hatch

893

01:30:54,830 --> 01:30:52,199

they're working on setting up their work

894

01:30:56,870 --> 01:30:54,840

sites Nicole man making her way over and

895

01:30:58,550 --> 01:30:56,880

setting up some anchor hooks you may

896

01:31:00,410 --> 01:30:58,560

hear about these anchor hooks throughout

897

01:31:02,450 --> 01:31:00,420

our coverage

898

01:31:04,010 --> 01:31:02,460

it has to do with moving around the

899

01:31:06,530 --> 01:31:04,020

space station and configuring your

900

01:31:08,149 --> 01:31:06,540

tethers

901
01:31:09,530 --> 01:31:08,159
you could kind of think of it sort of

902
01:31:11,810 --> 01:31:09,540
like rock wall climbing if you're

903
01:31:13,610 --> 01:31:11,820
familiar you have to you have your

904
01:31:15,890 --> 01:31:13,620
anchor right at the top and you have

905
01:31:18,050 --> 01:31:15,900
your rope supporting you you're free to

906
01:31:20,149 --> 01:31:18,060
move left right up and down but your

907
01:31:22,310 --> 01:31:20,159
anchor hook stays the same

908
01:31:23,570 --> 01:31:22,320
part of their task today is to relocate

909
01:31:24,709 --> 01:31:23,580
some of these anchor hooks a little

910
01:31:33,410 --> 01:31:24,719
later

911
01:31:33,420 --> 01:31:50,810
copy Duke

912
01:31:55,910 --> 01:31:53,209
and standby grew koichi we're seeing

913
01:32:02,750 --> 01:31:55,920

your safer door is actually popping open

914

01:32:02,760 --> 01:32:50,290

foreign

915

01:32:54,950 --> 01:32:52,850

we actually recommend that Duke head

916

01:32:56,689 --> 01:32:54,960

back to the airlock to help koichi with

917

01:32:59,209 --> 01:32:56,699

that safer door

918

01:33:00,709 --> 01:32:59,219

you can leave the anchor hooks where

919

01:33:12,169 --> 01:33:00,719

they are

920

01:33:16,729 --> 01:33:15,110

Japanese astronaut koichiwakada here at

921

01:33:21,590 --> 01:33:16,739

the airlock Center of your screen

922

01:33:26,450 --> 01:33:24,649

just the door is partially open and so I

923

01:33:28,070 --> 01:33:26,460

think if we have Duke translate back to

924

01:33:30,250 --> 01:33:28,080

you to help get that door closed again

925

01:33:33,410 --> 01:33:30,260

that'll be better than uh having us

926

01:33:36,649 --> 01:33:33,420

possibly have that become even more open

927

01:33:38,990 --> 01:33:36,659

and actually deploy the safer

928

01:33:42,890 --> 01:33:39,000

okay that sounds good

929

01:33:48,530 --> 01:33:44,870

it looks like the uh

930

01:33:53,870 --> 01:33:51,770

like a house right right yeah right

931

01:33:59,149 --> 01:33:53,880

let's see let's start on the piano score

932

01:34:03,110 --> 01:34:00,709

come back to the point of view of NASA's

933

01:34:05,209 --> 01:34:03,120

astronaut Nicole man she's heading back

934

01:34:12,189 --> 01:34:05,219

to koichiwakata who is at the airlock

935

01:34:17,629 --> 01:34:15,649

part of koichiwakata's safer unit that

936

01:34:19,729 --> 01:34:17,639

backpack that he wears on his back is

937

01:34:21,649 --> 01:34:19,739

popped open it's really difficult to

938

01:34:23,810 --> 01:34:21,659

reach behind you in these spacesuits so

939

01:34:58,490 --> 01:34:23,820

Nicole man is making her way back to

940

01:35:02,330 --> 01:35:00,649

and koichi while you're there you can

941

01:35:04,910 --> 01:35:02,340

release your waste tether from the

942

01:35:07,729 --> 01:35:04,920

airlock d-ring extender and close that

943

01:35:07,739 --> 01:35:41,870

these asking work

944

01:35:41,880 --> 01:35:48,370

okay

945

01:35:57,530 --> 01:35:50,990

is now closed

946

01:36:01,430 --> 01:35:59,330

I think he said it did not hold at the

947

01:36:03,110 --> 01:36:01,440

top of the feet of spur but it's clear

948

01:36:23,689 --> 01:36:03,120

of me now though it is stationed forward

949

01:36:46,129 --> 01:36:25,430

coming down to see this Mercury team

950

01:36:46,139 --> 01:36:50,870

ass

951
01:36:55,129 --> 01:36:53,750
Nicole man now re-entering your frame on

952
01:36:58,490 --> 01:36:55,139
the left side of the screen she is now

953
01:37:01,850 --> 01:36:58,500
with koichiwakata at the airlock

954
01:37:01,860 --> 01:37:13,070
um

955
01:37:17,689 --> 01:37:15,470
hey Duke your feet are caught on

956
01:37:19,310 --> 01:37:17,699
koichi's safety tether just watch out

957
01:37:25,010 --> 01:37:19,320
there they're currently behind your

958
01:37:29,629 --> 01:37:27,950
okay now it's clear

959
01:37:36,050 --> 01:37:29,639
okay

960
01:37:38,870 --> 01:37:37,790
let me get a local bounce we see and

961
01:37:47,750 --> 01:37:38,880
then I'll have you get in a good

962
01:37:51,649 --> 01:37:49,970
I'm gonna go over here and just some

963
01:37:54,590 --> 01:37:51,659

words for you guys as you're getting set

964

01:37:57,470 --> 01:37:54,600

up a reminder there's a pin for that

965

01:37:59,870 --> 01:37:57,480

safer handle door the safer door that's

966

01:38:02,629 --> 01:37:59,880

going to have to go back into a hole

967

01:38:05,090 --> 01:38:02,639

and so I would recommend that do you

968

01:38:07,430 --> 01:38:05,100

hold the door closed

969

01:38:09,709 --> 01:38:07,440

pull up slightly on that safer handle

970

01:38:11,570 --> 01:38:09,719

and then fully close the door and try to

971

01:38:14,750 --> 01:38:11,580

reset the handle in order to get that

972

01:38:14,760 --> 01:38:17,410

of course

973

01:38:24,709 --> 01:38:20,750

this is a little more close to me

974

01:38:29,149 --> 01:38:26,689

the safer unit is in the center of your

975

01:38:33,830 --> 01:38:29,159

screen there so you see the American

976
01:38:36,410 --> 01:38:33,840
flag NASA logo behind it we have the

977
01:38:38,149 --> 01:38:36,420
safer unit that's not designed for use

978
01:38:40,250 --> 01:38:38,159
during the spacewalk but in the unlikely

979
01:38:42,110 --> 01:38:40,260
event that they get untethered they can

980
01:38:44,169 --> 01:38:42,120
use this device to get them back to the

981
01:38:46,669 --> 01:38:44,179
space station

982
01:38:49,250 --> 01:38:46,679
wakatas is being a little sticky so

983
01:38:52,610 --> 01:38:49,260
Nicole man is assisting get it into the

984
01:38:58,729 --> 01:38:55,189
okay yeah it was like the tiniest bit

985
01:39:05,149 --> 01:38:58,739
out you pushed it pulled up and down and

986
01:39:09,470 --> 01:39:07,430
Nicole man's point of view now if we're

987
01:39:23,930 --> 01:39:09,480
checking in your heck of views sounds

988
01:39:30,950 --> 01:39:28,010

okay your safety feather is a good

989

01:39:37,510 --> 01:39:30,960

concerning money is going in front of my

990

01:39:45,350 --> 01:39:39,530

head back out

991

01:39:47,090 --> 01:39:45,360

then koichi since your uh anchor hooks

992

01:39:49,189 --> 01:39:47,100

are all set up out there you can follow

993

01:40:01,430 --> 01:39:49,199

Duke just keep a little bit of distance

994

01:40:01,440 --> 01:40:25,610

see that

995

01:40:25,620 --> 01:40:33,970

yes

996

01:40:42,950 --> 01:40:36,709

I'm going up the theater first okay I'll

997

01:40:42,960 --> 01:41:03,890

pass

998

01:41:03,900 --> 01:41:07,610

Ed

999

01:41:11,090 --> 01:41:09,410

and with that both of our spacewalkers

1000

01:41:14,270 --> 01:41:11,100

are out on their way to the work site

1001
01:41:16,669 --> 01:41:14,280
this worksite being the 1A power channel

1002
01:41:18,649 --> 01:41:16,679
on the International Space Station where

1003
01:41:21,530 --> 01:41:18,659
they're completing their work installing

1004
01:41:22,450 --> 01:41:21,540
a support structure a mod kit if you

1005
01:41:24,890 --> 01:41:22,460
will

1006
01:41:40,100 --> 01:41:24,900
okay I'm coming up on your feet right

1007
01:41:40,110 --> 01:41:51,109
[Applause]

1008
01:41:56,030 --> 01:41:53,149
this work site that they're heading out

1009
01:42:01,310 --> 01:41:56,040
to they'll find that you're clear okay

1010
01:42:01,320 --> 01:42:33,950
us

1011
01:42:37,970 --> 01:42:36,290
out at their work site at the 1A power

1012
01:42:41,629 --> 01:42:37,980
Channel they'll find a structure kind of

1013
01:42:44,930 --> 01:42:41,639

similar to a pyramid that one day the

1014

01:42:47,750 --> 01:42:44,940

irosis rollout solar arrays will rest on

1015

01:42:49,790 --> 01:42:47,760

they're almost completed with it

1016

01:42:52,129 --> 01:42:49,800

but not quite done uh what you're seeing

1017

01:42:53,510 --> 01:42:52,139

on your screen now is a visual of the

1018

01:42:55,970 --> 01:42:53,520

mod kit that they're finishing up today

1019

01:42:57,590 --> 01:42:55,980

it's made up of six struts and one

1020

01:42:59,870 --> 01:42:57,600

mounting bracket where the solar array

1021

01:43:01,430 --> 01:42:59,880

will go that's in the blue

1022

01:43:03,169 --> 01:43:01,440

of course the real thing's not colorful

1023

01:43:05,689 --> 01:43:03,179

like our graphic here but for the sake

1024

01:43:07,850 --> 01:43:05,699

sake of explaining uh check out the pink

1025

01:43:10,129 --> 01:43:07,860

upper triangle and the blue mounting

1026
01:43:13,070 --> 01:43:10,139
brackets these are already complete your

1027
01:43:14,990 --> 01:43:13,080
S4 work site before on the bottom in the

1028
01:43:17,030 --> 01:43:15,000
gray you'll see the lower strut it's

1029
01:43:19,790 --> 01:43:17,040
installed but it needs the lower bolt on

1030
01:43:21,890 --> 01:43:19,800
the left lower strut to be checked out

1031
01:43:24,109 --> 01:43:21,900
they'll need to troubleshoot on that

1032
01:43:26,149 --> 01:43:24,119
bottom bolt to finish the job and then

1033
01:43:28,189 --> 01:43:26,159
the Orange Line in the center of the

1034
01:43:29,629 --> 01:43:28,199
graphic is the mid strut and today

1035
01:43:31,250 --> 01:43:29,639
they'll need to completely install the

1036
01:43:45,770 --> 01:43:31,260
mid strut and that's what Nicole man is

1037
01:43:48,890 --> 01:43:47,750
while troubleshooting this lower strut

1038
01:43:50,629 --> 01:43:48,900

they'll need to make sure that there's

1039

01:43:52,070 --> 01:43:50,639

no gap between the strut and the

1040

01:43:53,810 --> 01:43:52,080

physical bearing

1041

01:43:55,669 --> 01:43:53,820

they'll essentially want to confirm that

1042

01:43:58,550 --> 01:43:55,679

the two pieces they've connected are

1043

01:44:00,470 --> 01:43:58,560

flush and not angled with an uneven Gap

1044

01:44:02,090 --> 01:44:00,480

they'll also do a wiggle test on the

1045

01:44:04,129 --> 01:44:02,100

same piece of Hardware to make sure that

1046

01:44:05,629 --> 01:44:04,139

the bearing moves with the strut they

1047

01:44:07,609 --> 01:44:05,639

want to see that the bolt and the bolt

1048

01:44:08,750 --> 01:44:07,619

canister can move together that the

1049

01:44:11,030 --> 01:44:08,760

bearing and the strut move together

1050

01:44:16,129 --> 01:44:11,040

outboard on the non-radiator side of the

1051

01:44:28,870 --> 01:44:22,729

okay

1052

01:44:36,530 --> 01:44:31,790

I see your face together so it's clear

1053

01:44:40,850 --> 01:44:38,930

because a little bit I've seen it like a

1054

01:44:43,910 --> 01:44:40,860

little above your head so just keep an

1055

01:44:46,189 --> 01:44:43,920

eye on it I see that

1056

01:44:48,729 --> 01:44:46,199

great deconfliction guys and I've seen

1057

01:44:51,649 --> 01:44:48,739

on my calculator

1058

01:44:54,169 --> 01:44:51,659

in place and as you translate outboard

1059

01:45:01,490 --> 01:44:54,179

also please don't translate on the

1060

01:45:01,500 --> 01:45:05,870

s

1061

01:45:11,209 --> 01:45:08,570

copy Duke you'll be looking for S4

1062

01:45:20,890 --> 01:45:11,219

handrail two two three one

1063

01:45:28,870 --> 01:45:24,470

we recommend fairleading at S4 handrail

1064

01:45:34,970 --> 01:45:32,570

13 copy and that's after you cross over

1065

01:45:36,290 --> 01:45:34,980

to the radiator side and then once

1066

01:45:39,530 --> 01:45:36,300

you're on the radiator side you'll be

1067

01:45:42,470 --> 01:45:39,540

heading outboard to the Q pin

1068

01:45:54,900 --> 01:45:42,480

okay

1069

01:45:54,910 --> 01:46:09,770

[Applause]

1070

01:46:09,780 --> 01:46:20,990

[Music]

1071

01:46:21,000 --> 01:46:24,050

right

1072

01:46:30,050 --> 01:46:26,410

yeah and that's correct

1073

01:46:34,930 --> 01:46:32,330

president

1074

01:46:52,609 --> 01:46:34,940

over to the radiator side

1075

01:47:00,229 --> 01:46:54,910

foreign

1076

01:47:03,830 --> 01:47:02,149

so I want to take a minute to go over

1077

01:47:06,020 --> 01:47:03,840

some of the directional cues that you

1078

01:47:08,510 --> 01:47:06,030

might be hearing yeah

1079

01:47:10,729 --> 01:47:08,520

[Music]

1080

01:47:12,290 --> 01:47:10,739

copy fair lead on two two one four

1081

01:47:25,010 --> 01:47:12,300

that's looking good we've got a great

1082

01:47:28,729 --> 01:47:27,530

so if you hear an s or a p we're going

1083

01:47:30,410 --> 01:47:28,739

to be talking a lot about the S today

1084

01:47:33,129 --> 01:47:30,420

whether it's the starboard side of the

1085

01:47:36,169 --> 01:47:33,139

space station it's paired with a number

1086

01:47:38,689 --> 01:47:36,179

S1 being very close to the center of the

1087

01:47:40,910 --> 01:47:38,699

space station S6 being as far out as you

1088

01:47:44,330 --> 01:47:40,920

can go we're also hearing the words like

1089

01:47:45,830 --> 01:47:44,340

in inboard and outboard inboard means

1090

01:47:47,870 --> 01:47:45,840

you're moving towards the center of the

1091

01:47:49,729 --> 01:47:47,880

space station and our ground Division

1092

01:47:51,770 --> 01:47:49,739

and Cardman has told them to go outboard

1093

01:48:07,810 --> 01:47:51,780

meaning more towards the outer edge of

1094

01:48:13,790 --> 01:48:10,669

two two three five

1095

01:48:20,450 --> 01:48:13,800

okay copy 2235 is exactly where you'll

1096

01:48:25,729 --> 01:48:21,950

reminder you'll want that handrail

1097

01:48:29,930 --> 01:48:26,990

okay

1098

01:48:32,030 --> 01:48:29,940

yeah and adjustable down the handrail

1099

01:48:35,149 --> 01:48:32,040

two two three one

1100

01:48:39,050 --> 01:48:37,010

copy and once you're done with that

1101
01:48:56,870 --> 01:48:39,060
we'll have you get in position near the

1102
01:49:39,229 --> 01:48:58,850
s

1103
01:49:39,239 --> 01:49:43,930
foreign

1104
01:49:47,689 --> 01:49:46,129
once you're happy with that mid strap

1105
01:49:49,729 --> 01:49:47,699
we'll have you head over to the lower

1106
01:49:51,770 --> 01:49:49,739
strut and actually get your eyes on

1107
01:49:53,209 --> 01:49:51,780
we'll take a wiggle and GAP check from

1108
01:49:58,149 --> 01:49:53,219
you we've got a couple seconds do a hand

1109
01:50:02,930 --> 01:50:01,189
on the right though right

1110
01:50:04,850 --> 01:50:02,940
so we'd actually like you to just head

1111
01:50:08,030 --> 01:50:04,860
to the left side

1112
01:50:13,550 --> 01:50:08,040
um since we've got kuichi sewing that uh

1113
01:50:13,560 --> 01:50:17,810

yeah we're coming up on the sunset

1114

01:50:17,820 --> 01:50:27,169

okay

1115

01:50:33,229 --> 01:50:31,010

we're in a brief Handover period now the

1116

01:50:35,270 --> 01:50:33,239

space station and orbital daytime as it

1117

01:50:38,870 --> 01:50:35,280

flies over Ukraine nearing an orbital

1118

01:50:41,810 --> 01:50:38,880

night time so for this reason our ground

1119

01:50:43,129 --> 01:50:41,820

IV and spacewalking group here on the

1120

01:50:45,530 --> 01:50:43,139

ground in mission control that you're

1121

01:50:47,330 --> 01:50:45,540

seeing now have asked Nicole Mann to

1122

01:50:48,709 --> 01:50:47,340

take a look at the lower strut remember

1123

01:50:50,090 --> 01:50:48,719

we're talking about two different

1124

01:50:52,010 --> 01:50:50,100

components

1125

01:50:54,350 --> 01:50:52,020

that they have left to install of this

1126

01:50:56,570 --> 01:50:54,360

structure they want to check out the

1127

01:50:58,310 --> 01:50:56,580

lower stripe that cable bag and totally

1128

01:51:00,530 --> 01:50:58,320

install the midstret so head out to the

1129

01:51:02,629 --> 01:51:00,540

left lower strut NASA astronaut Nicole

1130

01:51:04,490 --> 01:51:02,639

man has stowed the Midstream and now

1131

01:51:06,109 --> 01:51:04,500

she's working on inspecting the lower

1132

01:51:07,669 --> 01:51:06,119

straw to get both of your eyes on and

1133

01:51:17,470 --> 01:51:07,679

get those wiggling Gap checks done as

1134

01:51:23,209 --> 01:51:19,970

puppy Duke I like that plan we'll leave

1135

01:51:32,510 --> 01:51:25,430

okay

1136

01:51:37,729 --> 01:51:34,970

you've got a view of the the ladies in

1137

01:51:39,770 --> 01:51:37,739

charge of the room here um in the middle

1138

01:51:41,870 --> 01:51:39,780

of your screen in the black blazer and

1139

01:51:43,910 --> 01:51:41,880

the darker hair is Chloe Maring our

1140

01:51:48,709 --> 01:51:43,920

flight director today

1141

01:51:50,149 --> 01:51:48,719

and the woman just to her right is with

1142

01:51:52,070 --> 01:51:50,159

the blonde hair and the black blazer

1143

01:51:54,050 --> 01:51:52,080

that is NASA astronaut Xena Cardman and

1144

01:51:56,629 --> 01:51:54,060

you are hearing her voice communicating

1145

01:51:58,430 --> 01:51:56,639

the plans of our space walking team here

1146

01:52:11,149 --> 01:51:58,440

in Mission Control relayed to the crew

1147

01:52:11,159 --> 01:52:13,970

foreign

1148

01:52:18,649 --> 01:52:17,090

we're back with our live views now NASA

1149

01:52:21,290 --> 01:52:18,659

astronaut Nicole man is going to get

1150

01:52:22,669 --> 01:52:21,300

started checking out the lower strut

1151
01:52:25,189 --> 01:52:22,679
that they're working on doing a couple

1152
01:52:40,070 --> 01:52:25,199
of tests while we're in an orbital

1153
01:52:40,080 --> 01:52:45,609
except in 21 area

1154
01:52:49,189 --> 01:52:47,870
as well hopefully you have a good happy

1155
01:52:50,930 --> 01:52:49,199
here

1156
01:52:52,729 --> 01:52:50,940
that's perfect we'll be following along

1157
01:52:54,590 --> 01:52:52,739
in your heckers just a couple quick

1158
01:52:58,250 --> 01:52:54,600
cautions no sudden movements on the mass

1159
01:53:00,830 --> 01:52:58,260
canister and uh no big lateral loads

1160
01:53:02,750 --> 01:53:00,840
maximum load is 50 pounds avoid cyclic

1161
01:53:04,430 --> 01:53:02,760
loading and don't Import Parts don't

1162
01:53:09,950 --> 01:53:04,440
impart forces into the mod kit until

1163
01:53:13,250 --> 01:53:11,810

up hold on Emily that's a little more

1164

01:53:15,649 --> 01:53:13,260

crucial I can get fertilized on the

1165

01:53:15,659 --> 01:53:19,790

okay I see uh

1166

01:53:23,689 --> 01:53:22,250

about that

1167

01:53:26,870 --> 01:53:23,699

okay

1168

01:53:31,010 --> 01:53:26,880

do you have a good have you been a

1169

01:53:36,410 --> 01:53:31,020

I don't see a gap between the uh

1170

01:53:42,590 --> 01:53:37,430

but

1171

01:53:48,770 --> 01:53:46,070

okay we copy a good Gap check

1172

01:53:51,470 --> 01:53:48,780

you have a good heck of you

1173

01:53:53,930 --> 01:53:51,480

wait okay you're taking a look now yeah

1174

01:54:06,350 --> 01:53:53,940

give us just a couple of moments to

1175

01:54:10,070 --> 01:54:08,149

all right Gucci we are definitely happy

1176
01:54:14,990 --> 01:54:10,080
with that Gap check we'll have you also

1177
01:54:20,030 --> 01:54:17,810
ing work

1178
01:54:22,609 --> 01:54:20,040
perfect and just a reminder we're

1179
01:54:24,830 --> 01:54:22,619
looking for if they move that the bolt

1180
01:54:26,510 --> 01:54:24,840
and bolt canister move together and if

1181
01:54:31,370 --> 01:54:26,520
they move that the bearing and strut

1182
01:54:35,450 --> 01:54:32,390
okay

1183
01:54:48,649 --> 01:54:35,460
I didn't see any movement from here I

1184
01:54:48,659 --> 01:54:56,050
okay okay

1185
01:55:00,550 --> 01:54:58,310
the move together

1186
01:55:02,990 --> 01:55:00,560
and then

1187
01:55:04,310 --> 01:55:03,000
shuts in the circle bearing that move

1188
01:55:09,490 --> 01:55:04,320

together

1189

01:55:14,090 --> 01:55:12,290

we do see that that sounds like a good

1190

01:55:19,550 --> 01:55:14,100

check for us we're just verifying with

1191

01:55:19,560 --> 01:55:23,330

okay

1192

01:55:27,169 --> 01:55:24,890

so some good news here in Mission

1193

01:55:29,870 --> 01:55:27,179

Control our space Walkers performs both

1194

01:55:31,669 --> 01:55:29,880

a gout check and a wiggle check okay Gap

1195

01:55:33,830 --> 01:55:31,679

check making sure that the items that

1196

01:55:37,430 --> 01:55:33,840

they've installed lay flushed are not

1197

01:55:39,050 --> 01:55:37,440

angled in any way misaligned they've

1198

01:55:40,970 --> 01:55:39,060

also done the wiggle test to confirm

1199

01:55:45,590 --> 01:55:40,980

that the bolt in the bolt canister and

1200

01:55:49,790 --> 01:55:47,870

we had troubleshooting options that the

1201

01:55:51,709 --> 01:55:49,800

team has worked on this week in the

1202

01:55:53,090 --> 01:55:51,719

event that either the gap or the wiggle

1203

01:55:55,010 --> 01:55:53,100

check

1204

01:55:58,010 --> 01:55:55,020

one or the other didn't work but

1205

01:56:00,649 --> 01:55:58,020

according to our space Walkers both the

1206

01:56:04,070 --> 01:56:00,659

Gap and the wiggle tests are good the

1207

01:56:04,080 --> 01:56:12,010

copy Duke

1208

01:56:35,270 --> 01:56:15,950

energy board

1209

01:56:47,930 --> 01:56:37,490

and Duke a firm you can get the midstret

1210

01:56:51,830 --> 01:56:49,970

so this is some good news the lower

1211

01:56:54,310 --> 01:56:51,840

strut is installed and installed

1212

01:56:59,270 --> 01:56:57,229

however the work is not entirely done on

1213

01:57:01,189 --> 01:56:59,280

it in order to get to this bolt that

1214

01:57:04,609 --> 01:57:01,199

they had the questions on they had to

1215

01:57:05,689 --> 01:57:04,619

take off some multi-layer insulation and

1216

01:57:08,209 --> 01:57:05,699

now they're just going to work to put

1217

01:57:12,109 --> 01:57:10,129

this of course protects the hardware

1218

01:57:14,270 --> 01:57:12,119

From the Rough environment of space the

1219

01:57:16,790 --> 01:57:14,280

big picture update for you both for your

1220

01:57:18,410 --> 01:57:16,800

essay we are currently 30 minutes ahead

1221

01:57:20,990 --> 01:57:18,420

of the timeline so amazing work there

1222

01:57:23,629 --> 01:57:21,000

and our limiting consumables

1223

01:57:35,350 --> 01:57:23,639

with medox put us at a pet of about

1224

01:57:42,729 --> 01:57:37,550

from this side it looks like it's gonna

1225

01:57:46,550 --> 01:57:44,570

I don't know

1226

01:57:51,109 --> 01:57:46,560

um

1227

01:57:55,910 --> 01:57:52,910

just that corner that your fingers on

1228

01:58:00,350 --> 01:57:55,920

now okay there you go yeah okay

1229

01:58:03,350 --> 01:58:01,310

okay

1230

01:58:05,990 --> 01:58:03,360

and see now you're happy with the uh am

1231

01:58:07,490 --> 01:58:06,000

I right here on the lower shot at the

1232

01:58:09,770 --> 01:58:07,500

end 21.

1233

01:58:12,410 --> 01:58:09,780

we are indeed we're happy with that mli

1234

01:58:17,930 --> 01:58:12,420

on M21 and we'll take a glove half and

1235

01:58:25,450 --> 01:58:22,370

okay uh Bob is good yeah the happiest

1236

01:58:35,629 --> 01:58:27,589

and check that your gauntlets are down

1237

01:58:40,490 --> 01:58:37,490

and the first task of the day is now

1238

01:58:43,669 --> 01:58:40,500

complete already they the spacewalk

1239

01:58:45,830 --> 01:58:43,679

began at 6 45 a.m central time they

1240

01:58:48,530 --> 01:58:45,840

headed out to their work site on the 1A

1241

01:58:50,390 --> 01:58:48,540

power Channel where they found this

1242

01:58:52,370 --> 01:58:50,400

support structure they had built it

1243

01:58:54,290 --> 01:58:52,380

during their previous Eva earlier this

1244

01:58:56,510 --> 01:58:54,300

month but they still had a couple of

1245

01:58:58,310 --> 01:58:56,520

items left on their to-do list including

1246

01:59:01,010 --> 01:58:58,320

checking out one of the bolts on this

1247

01:59:03,350 --> 01:59:01,020

lower strut they did two tests on it a

1248

01:59:05,270 --> 01:59:03,360

gap checked and a wiggle check and right

1249

01:59:07,129 --> 01:59:05,280

on the first try both of them were

1250

01:59:09,229 --> 01:59:07,139

successful so now they're moving on to

1251
01:59:11,209 --> 01:59:09,239
their next task which is completely

1252
01:59:12,709 --> 01:59:11,219
installing the mid strut

1253
01:59:14,450 --> 01:59:12,719
so if you'll remember they had already

1254
01:59:16,430 --> 01:59:14,460
begun work on the lower strut and they

1255
01:59:18,649 --> 01:59:16,440
just needed to do one more evaluation

1256
01:59:20,689 --> 01:59:18,659
but they do need to completely install

1257
01:59:25,629 --> 01:59:20,699
the mid strut that's what they're

1258
01:59:31,430 --> 01:59:29,030
perfect Duke you can head to the apfr

1259
01:59:41,030 --> 01:59:31,440
and you'll extend this Aid and Ingress

1260
01:59:46,609 --> 01:59:43,550
so you just heard Xena Cardman let our

1261
01:59:48,229 --> 01:59:46,619
spacewalker here in the red suit excuse

1262
01:59:51,950 --> 01:59:48,239
me the suit with the red stripes Nicole

1263
01:59:54,109 --> 01:59:51,960

Manson Ingress the apfr good news ev2

1264

01:59:56,390 --> 01:59:54,119

you can head to the cable bag and you'll

1265

01:59:58,669 --> 01:59:56,400

grab the TBA bag from that cable bag

1266

02:00:00,530 --> 01:59:58,679

stow it on your mini Workstation

1267

02:00:04,010 --> 02:00:00,540

and then translate to the left side pad

1268

02:00:06,229 --> 02:00:04,020

install so what exactly is this apfr

1269

02:00:08,570 --> 02:00:06,239

well it stands for articulating portable

1270

02:00:10,189 --> 02:00:08,580

foot restraint it's essentially a

1271

02:00:12,410 --> 02:00:10,199

foothold that can be installed at a

1272

02:00:14,629 --> 02:00:12,420

workstation you can imagine that working

1273

02:00:16,129 --> 02:00:14,639

in microgravity can be difficult not to

1274

02:00:18,970 --> 02:00:16,139

float around while you're working with

1275

02:00:22,310 --> 02:00:18,980

your tools and the foot restraint holds

1276
02:00:27,310 --> 02:00:22,320
keep the spacewalker in place it really

1277
02:00:31,490 --> 02:00:29,689
sometimes a foot restraint is installed

1278
02:00:32,930 --> 02:00:31,500
to the end of the robotic arm and the

1279
02:00:34,729 --> 02:00:32,940
astronaut can be driven around to

1280
02:00:37,490 --> 02:00:34,739
different work sites sometimes carrying

1281
02:00:39,290 --> 02:00:37,500
bulky items the robotic arm won't be

1282
02:00:41,870 --> 02:00:39,300
used in today's spacewalk but they'll

1283
02:00:43,250 --> 02:00:41,880
use foot restraints in this area that

1284
02:01:36,169 --> 02:00:43,260
were already set up for them at their

1285
02:01:36,179 --> 02:01:39,470
interesting

1286
02:01:39,480 --> 02:01:49,430
copy Duke

1287
02:01:49,440 --> 02:01:57,530
Pro

1288
02:02:00,970 --> 02:01:58,729

um if you if you want to put on the

1289

02:02:04,790 --> 02:02:00,980

Handler

1290

02:02:07,550 --> 02:02:04,800

okay I'll put it in there we are now one

1291

02:02:09,950 --> 02:02:07,560

hour into our spacewalk today

1292

02:02:11,750 --> 02:02:09,960

we are now in an orbital night time here

1293

02:02:14,570 --> 02:02:11,760

aboard the International Space Station

1294

02:02:16,550 --> 02:02:14,580

you see that glowing line there that's

1295

02:02:19,129 --> 02:02:16,560

actually the Earth

1296

02:02:21,709 --> 02:02:19,139

and what are spacewalkers up to well our

1297

02:02:24,229 --> 02:02:21,719

ev1 NASA astronaut Nicole Mann is

1298

02:02:26,570 --> 02:02:24,239

getting into her apfr or portable foot

1299

02:02:28,070 --> 02:02:26,580

restraint kind of holds her in place at

1300

02:02:31,310 --> 02:02:28,080

her workstation so she can begin

1301
02:02:33,709 --> 02:02:31,320
installation on the mid strut meanwhile

1302
02:02:35,750 --> 02:02:33,719
NASA excuse me Japanese astronaut

1303
02:02:44,890 --> 02:02:35,760
kuichiwakata is stowing the cable bag

1304
02:02:44,900 --> 02:02:52,070
next to the cable beds

1305
02:02:52,080 --> 02:02:57,770
don't be Gucci

1306
02:02:57,780 --> 02:03:02,629
Christina

1307
02:03:02,639 --> 02:03:06,830
before we had left so um

1308
02:03:06,840 --> 02:03:10,370
a role of hotels

1309
02:03:10,380 --> 02:03:20,530
checking Dukes

1310
02:03:20,540 --> 02:03:28,850
Duke that's a roll of hotels yaw 12.

1311
02:03:28,860 --> 02:03:45,890
probably

1312
02:04:07,310 --> 02:03:48,649
okay that's a rule of hotel in the yacht

1313
02:04:25,550 --> 02:04:09,350

that's a quick Handover in about 10

1314

02:04:30,950 --> 02:04:28,609

we're in a brief Handover period as we

1315

02:04:32,990 --> 02:04:30,960

work to regain

1316

02:04:35,089 --> 02:04:33,000

communication with our satellites both

1317

02:04:37,010 --> 02:04:35,099

video and audio

1318

02:04:39,109 --> 02:04:37,020

for now you have live views of Mission

1319

02:04:42,229 --> 02:04:39,119

Control Houston where teams are

1320

02:04:43,609 --> 02:04:42,239

supporting the a spacewalk outside of

1321

02:04:45,470 --> 02:04:43,619

the International Space Station with

1322

02:04:48,109 --> 02:04:45,480

NASA astronaut Nicole Mann and Japanese

1323

02:04:50,209 --> 02:04:48,119

astronaut kuichiwakata they're finishing

1324

02:04:53,450 --> 02:04:50,219

up work that they started on during a

1325

02:04:55,910 --> 02:04:53,460

previous Eva back in January

1326

02:04:57,530 --> 02:04:55,920

they're installing a modification kit or

1327

02:05:04,850 --> 02:04:57,540

a support structure that will one day

1328

02:05:08,570 --> 02:05:06,589

they've already completed their first

1329

02:05:10,669 --> 02:05:08,580

task of the day and are slightly ahead

1330

02:05:13,850 --> 02:05:10,679

of schedule

1331

02:05:16,250 --> 02:05:13,860

we're gonna fight that area

1332

02:05:19,790 --> 02:05:16,260

okay copy and you've got the GoPro set

1333

02:05:24,109 --> 02:05:21,830

yes

1334

02:05:26,149 --> 02:05:24,119

copy that's great okay on your way out

1335

02:05:30,530 --> 02:05:26,159

to the side pad location reminder it's a

1336

02:05:33,890 --> 02:05:30,540

fairlead on S5 handrail 2108

1337

02:05:35,990 --> 02:05:33,900

that's a long horizontal handrail

1338

02:05:52,370 --> 02:05:36,000

just below the mass canister basically

1339

02:05:52,380 --> 02:06:02,629

foreign

1340

02:06:05,930 --> 02:06:04,250

this mod kit launched on Northrop

1341

02:06:07,729 --> 02:06:05,940

grumman's 18th Commercial resupply

1342

02:06:10,380 --> 02:06:07,739

Services Mission and cygnus delivered

1343

02:06:17,689 --> 02:06:10,390

them back in November

1344

02:06:17,699 --> 02:06:34,660

foreign

1345

02:06:34,670 --> 02:07:01,010

[Applause]

1346

02:07:01,020 --> 02:07:34,669

all right

1347

02:07:39,290 --> 02:07:36,890

okay so I

1348

02:07:44,149 --> 02:07:39,300

yeah

1349

02:07:45,350 --> 02:07:44,159

down left side is Luke Knight's coming

1350

02:08:04,729 --> 02:07:45,360

off

1351
02:08:09,410 --> 02:08:06,950
well our spacewalkers are getting ready

1352
02:08:11,810 --> 02:08:09,420
to start work installing the mid-stripe

1353
02:08:13,729 --> 02:08:11,820
portion the last piece of the puzzle for

1354
02:08:15,709 --> 02:08:13,739
this support structure that they're

1355
02:08:17,270 --> 02:08:15,719
building today in this part two of a

1356
02:08:19,490 --> 02:08:17,280
spacewalk if you have any questions

1357
02:08:22,490 --> 02:08:19,500
about today's operation be sure to

1358
02:08:27,609 --> 02:08:22,500
submit them using ask NASA and we'll try

1359
02:08:27,619 --> 02:08:44,830
now you're in and it looks like uh

1360
02:08:44,840 --> 02:09:08,589
you go there

1361
02:09:12,649 --> 02:09:10,490
Nicole Mann is now in position

1362
02:09:18,970 --> 02:09:12,659
successfully inside of her portable foot

1363
02:09:23,450 --> 02:09:21,589

is configuring his tethers and equipment

1364

02:09:25,189 --> 02:09:23,460

that he brought out making sure it's out

1365

02:09:41,149 --> 02:09:25,199

of the way but still Within Reach and

1366

02:09:41,159 --> 02:09:44,290

okay

1367

02:09:57,169 --> 02:09:46,669

that's totally fast

1368

02:09:57,179 --> 02:10:15,410

they didn't let me go behind the apfr

1369

02:10:15,420 --> 02:10:41,030

all right

1370

02:10:41,040 --> 02:10:46,030

feel down okay

1371

02:10:50,990 --> 02:10:49,189

students this view that we're looking at

1372

02:10:53,209 --> 02:10:51,000

now is what they're working on this is

1373

02:10:54,490 --> 02:10:53,219

the mod kit or support structure that

1374

02:10:57,550 --> 02:10:54,500

will one day house

1375

02:11:00,470 --> 02:10:57,560

irises or ISS to roll out solar arrays

1376

02:11:09,530 --> 02:11:00,480

pull in further

1377

02:11:14,149 --> 02:11:11,990

the round part that you're seeing there

1378

02:11:23,990 --> 02:11:14,159

is the Mast canister and that's what

1379

02:11:31,370 --> 02:11:26,209

okay

1380

02:11:38,830 --> 02:11:32,990

ah

1381

02:11:43,310 --> 02:11:41,689

during part one of this spacewalk one of

1382

02:11:45,169 --> 02:11:43,320

the plates that's at the end of The Mask

1383

02:11:47,990 --> 02:11:45,179

excuse me that's at the end of the mid

1384

02:11:50,209 --> 02:11:48,000

shred didn't quite sit flush against the

1385

02:11:51,890 --> 02:11:50,219

mask canister there were um some

1386

02:11:55,430 --> 02:11:51,900

components in the way maybe perhaps some

1387

02:11:56,870 --> 02:11:55,440

insulation so the ground team has worked

1388

02:11:59,750 --> 02:11:56,880

all week on some troubleshooting

1389

02:12:04,070 --> 02:11:59,760

measures and koichiwakata and Nicole man

1390

02:12:04,080 --> 02:12:34,600

foreign

1391

02:12:34,610 --> 02:12:37,790

[Applause]

1392

02:12:37,800 --> 02:13:14,330

foreign

1393

02:13:19,550 --> 02:13:17,089

pass

1394

02:13:21,830 --> 02:13:19,560

the white covering that you see on these

1395

02:13:23,990 --> 02:13:21,840

struts that's the mli the multi-layer

1396

02:13:25,669 --> 02:13:24,000

insulation they're working to peel that

1397

02:13:31,910 --> 02:13:25,679

back so they have a good view of the

1398

02:13:36,169 --> 02:13:33,890

it's all great work

1399

02:13:38,149 --> 02:13:36,179

okay

1400

02:13:50,330 --> 02:13:38,159

we'll also have you remove the Locking

1401

02:13:57,530 --> 02:13:54,850

okay that's the pedia bag at the uh

1402

02:13:58,850 --> 02:13:57,540

commit the position of the white glass

1403

02:14:02,689 --> 02:13:58,860

of

1404

02:14:04,669 --> 02:14:02,699

the head Veil the vertical head rail

1405

02:14:05,990 --> 02:14:04,679

that'd be Gucci that's a great spot for

1406

02:14:08,450 --> 02:14:06,000

that TBA bag

1407

02:14:11,149 --> 02:14:08,460

we can get to work on that side pad

1408

02:14:13,010 --> 02:14:11,159

interface you'll clear the mli from the

1409

02:14:17,930 --> 02:14:13,020

GSE fixtures

1410

02:14:21,410 --> 02:14:19,790

and Duke for that tip pin once you've

1411

02:14:24,370 --> 02:14:21,420

got that removed check that the washer

1412

02:14:26,030 --> 02:14:24,380

is behind the detent

1413

02:14:29,149 --> 02:14:26,040

[Applause]

1414

02:14:31,850 --> 02:14:29,159

okay the washer is behind the defense

1415

02:14:33,649 --> 02:14:31,860

perfect you can extend the mid strut and

1416

02:14:39,649 --> 02:14:33,659

once Ouija is in place you'll work with

1417

02:14:44,390 --> 02:14:41,810

you just heard NASA astronaut and Xena

1418

02:14:49,370 --> 02:14:44,400

Cardman give Nicole man the okay to

1419

02:14:54,709 --> 02:14:51,350

yeah we'll have kuichi working on the

1420

02:14:56,689 --> 02:14:54,719

mli Duke you can help him by reporting

1421

02:15:00,890 --> 02:14:56,699

when the mli is clear of the side pad

1422

02:15:00,900 --> 02:15:04,149

foreign

1423

02:15:09,109 --> 02:15:07,069

so this mid strut is telescopic meaning

1424

02:15:10,970 --> 02:15:09,119

it can be extended out like a telescope

1425

02:15:13,250 --> 02:15:10,980

so it does have some tolerance during

1426

02:15:15,649 --> 02:15:13,260

installation mid strap reminder you can

1427

02:15:19,910 --> 02:15:15,659

also lock out your rep with slack in

1428

02:15:19,920 --> 02:15:27,530

okay

1429

02:15:32,149 --> 02:15:29,169

I think uh

1430

02:15:34,370 --> 02:15:32,159

it's kind of difficult to sail these

1431

02:15:38,089 --> 02:15:34,380

down along the unrail but I think that

1432

02:15:40,310 --> 02:15:38,099

now it's not the way for Duke so I'm

1433

02:15:43,930 --> 02:15:40,320

going to continue with the safety data

1434

02:15:48,470 --> 02:15:46,250

I'll uh

1435

02:15:50,689 --> 02:15:48,480

remind me when I had John Cena I'm gonna

1436

02:16:02,750 --> 02:15:50,699

have to move his Safety Center

1437

02:16:07,609 --> 02:16:05,089

kuichi will be watching in your heck of

1438

02:16:10,250 --> 02:16:07,619

you and just give us words once you've

1439

02:16:12,470 --> 02:16:10,260

got the right side and the left side GSC

1440

02:16:13,790 --> 02:16:12,480

pad clear of the mli and the velcro

1441

02:16:15,109 --> 02:16:13,800

re-engaged

1442

02:16:24,950 --> 02:16:15,119

okay

1443

02:16:30,649 --> 02:16:27,890

I'm gonna stop to the right side

1444

02:16:34,669 --> 02:16:30,659

following the decks of the video that

1445

02:16:34,679 --> 02:16:39,110

we'll all be uh humming a song

1446

02:16:39,120 --> 02:16:47,110

oh yeah

1447

02:16:50,690 --> 02:16:49,070

analyze some

1448

02:17:20,450 --> 02:16:50,700

because of the

1449

02:17:25,610 --> 02:17:23,330

so to recap where we're at now

1450

02:17:27,709 --> 02:17:25,620

our space Walkers kuishi wakata and

1451

02:17:29,570 --> 02:17:27,719

Nicole Mann are starting to install the

1452

02:17:32,509 --> 02:17:29,580

midstra at the last piece that they need

1453

02:17:35,929 --> 02:17:32,519

to install to complete the support

1454

02:17:37,549 --> 02:17:35,939

structure needed for a a future solar

1455

02:17:40,129 --> 02:17:37,559

array right now they're working on

1456

02:17:41,750 --> 02:17:40,139

peeling back the layers of multi-layer

1457

02:17:48,290 --> 02:17:41,760

insulation so that they have a good view

1458

02:17:52,370 --> 02:17:50,270

great work we'll have you work on the

1459

02:17:56,270 --> 02:17:52,380

left side as well and just a reminder

1460

02:18:00,230 --> 02:17:57,410

yeah

1461

02:18:03,790 --> 02:18:00,240

update has enough

1462

02:18:06,709 --> 02:18:03,800

is uh as well as the distance from the

1463

02:18:08,150 --> 02:18:06,719

receptacle bracket but the as you

1464

02:18:10,490 --> 02:18:08,160

mentioned that they need to have some

1465

02:18:12,770 --> 02:18:10,500

flag at the top of this area so I'm

1466

02:18:15,650 --> 02:18:12,780

gonna relocate a little bit

1467

02:18:24,950 --> 02:18:18,589

and yeah as long as that mli just fully

1468

02:18:29,690 --> 02:18:27,589

makata has successfully removed the

1469

02:18:41,389 --> 02:18:29,700

multi-layer insulation on the right side

1470

02:18:46,490 --> 02:18:44,469

okay it looks like uh

1471

02:18:48,950 --> 02:18:46,500

perfectly clearance I think they're

1472

02:18:53,150 --> 02:18:48,960

happy about players

1473

02:18:57,349 --> 02:18:55,310

do you think Duke I think it looks good

1474

02:19:00,830 --> 02:18:57,359

okay okay all right with that then I

1475

02:19:07,490 --> 02:19:04,250

that's the site pad you agree Tina

1476

02:19:09,830 --> 02:19:07,500

I do agree we are ready for that side

1477

02:19:11,150 --> 02:19:09,840

pad right

1478

02:19:13,750 --> 02:19:11,160

great

1479

02:19:16,490 --> 02:19:13,760

and once you receive it from duke

1480

02:19:19,370 --> 02:19:16,500

has her rat locked out we'll take some

1481

02:19:30,910 --> 02:19:19,380

inspections of the tape side deep tape

1482

02:19:36,349 --> 02:19:33,770

but I'm going to put those uh Partners

1483

02:19:40,490 --> 02:19:36,359

once again

1484

02:19:47,570 --> 02:19:42,830

now with that multi-layer insulation out

1485

02:19:50,870 --> 02:19:49,670

with the multi-layer insulation now out

1486

02:19:52,670 --> 02:19:50,880

of the way they're going to move on to

1487

02:19:55,490 --> 02:19:52,680

the troubleshooting measures they had

1488

02:19:57,410 --> 02:19:55,500

attempted to install this mid-strut

1489

02:19:59,690 --> 02:19:57,420

during their previous spacewalk but ran

1490

02:20:02,090 --> 02:19:59,700

into some issues getting it flush up

1491

02:20:03,290 --> 02:20:02,100

against that mass canister so now

1492

02:20:07,730 --> 02:20:03,300

they're going to try some of the fixes

1493

02:20:24,530 --> 02:20:16,310

right

1494

02:20:29,690 --> 02:20:24,540

have enough slack in that rep before you

1495

02:20:29,700 --> 02:20:36,349

Perfect all right here we go

1496

02:20:40,309 --> 02:20:37,790

they're getting ready to install the

1497

02:20:41,990 --> 02:20:40,319

first side that's the far side or the

1498

02:20:49,130 --> 02:20:42,000

topmost part of your screen to the mass

1499

02:20:52,790 --> 02:20:51,230

the mass canister is that big

1500

02:21:22,030 --> 02:20:52,800

cylindrical bit that you see on your

1501
02:21:26,750 --> 02:21:24,950
koichi what koichiwakata is taking lean

1502
02:21:33,290 --> 02:21:26,760
on the install of this side of the Mast

1503
02:21:40,250 --> 02:21:36,110
and hey koichi from our view it looks

1504
02:21:42,050 --> 02:21:40,260
like maybe it is pitched toward you a

1505
02:21:44,389 --> 02:21:42,060
little bit so that the bottom detent is

1506
02:21:46,190 --> 02:21:44,399
engaged with the top detent is not quite

1507
02:21:49,610 --> 02:21:46,200
engaged

1508
02:21:51,590 --> 02:21:49,620
we can also install that adjustable

1509
02:21:52,510 --> 02:21:51,600
and just give it a little

1510
02:21:54,770 --> 02:21:52,520
um

1511
02:21:56,809 --> 02:21:54,780
okay yeah it looks like it's coming off

1512
02:21:59,990 --> 02:21:56,819
now all right

1513
02:22:03,050 --> 02:22:00,000

okay you recommend that using digestible

1514

02:22:22,969 --> 02:22:03,060

on this side I do yes

1515

02:22:27,349 --> 02:22:25,429

they're in the process of installing one

1516

02:22:30,530 --> 02:22:27,359

side of the mid strut to the Mast

1517

02:22:32,809 --> 02:22:30,540

canister it's laying flush and is good

1518

02:22:35,270 --> 02:22:32,819

and now they're working on soft docking

1519

02:22:37,610 --> 02:22:35,280

it which appears to be successful so in

1520

02:22:39,950 --> 02:22:37,620

a soft dock you get everything lined up

1521

02:22:42,110 --> 02:22:39,960

and flush before they're able to hard

1522

02:22:44,690 --> 02:22:42,120

knock or drive the bolts into it your

1523

02:22:46,610 --> 02:22:44,700

brt on that vertical handrail there and

1524

02:22:49,370 --> 02:22:46,620

that way you can get two hands on the

1525

02:22:51,830 --> 02:22:49,380

side pad if need let's see

1526

02:22:53,750 --> 02:22:51,840

see I already have your key

1527

02:23:04,309 --> 02:22:53,760

s

1528

02:23:04,319 --> 02:23:34,250

people enough condition but don't try

1529

02:23:34,260 --> 02:23:39,110

detail

1530

02:23:43,670 --> 02:23:41,330

copy and then you'll need the right side

1531

02:23:46,910 --> 02:23:43,680

to be engaged as you're cinching the

1532

02:23:46,920 --> 02:24:00,889

copy that

1533

02:24:00,899 --> 02:24:05,870

hey

1534

02:24:05,880 --> 02:24:13,550

okay

1535

02:24:24,230 --> 02:24:18,410

it looks like it's possibly engaged

1536

02:24:29,929 --> 02:24:27,170

okay copy the right side is engaged and

1537

02:24:32,210 --> 02:24:29,939

that adjustable is cinched looks like

1538

02:24:35,510 --> 02:24:32,220

the right side is not engaged if it's

1539

02:24:39,050 --> 02:24:37,190

and from The View that I have it does

1540

02:24:41,330 --> 02:24:39,060

still look like

1541

02:24:44,690 --> 02:24:41,340

the top detent

1542

02:24:49,070 --> 02:24:46,610

you've got a view now of the Mast

1543

02:24:50,750 --> 02:24:49,080

canister and in the middle of the screen

1544

02:24:52,910 --> 02:24:50,760

that poll that you see there is the mid

1545

02:24:54,889 --> 02:24:52,920

shot that they're trying to install you

1546

02:24:57,410 --> 02:24:54,899

see the plate at the very end of the mid

1547

02:25:00,849 --> 02:24:57,420

strand that's what they're trying to lay

1548

02:25:07,250 --> 02:25:03,349

uh adjustable

1549

02:25:24,130 --> 02:25:07,260

well this side is free and uh okay yeah

1550

02:25:24,140 --> 02:25:30,050

it's good

1551

02:25:32,870 --> 02:25:31,190

they're doing a number of

1552

02:25:34,910 --> 02:25:32,880

troubleshooting measures now here in

1553

02:25:37,250 --> 02:25:34,920

Mission Control relaying them to the

1554

02:25:38,929 --> 02:25:37,260

crew one is to move around the

1555

02:25:41,150 --> 02:25:38,939

multi-layer insulation which you just

1556

02:25:44,570 --> 02:25:41,160

saw the Pair of Hands doing there

1557

02:25:52,850 --> 02:25:44,580

okay copy koichi

1558

02:25:52,860 --> 02:26:45,530

[Music]

1559

02:26:56,950 --> 02:26:47,870

okay

1560

02:27:02,210 --> 02:26:59,450

there were no

1561

02:27:06,590 --> 02:27:04,250

that we've not attached yet the

1562

02:27:08,870 --> 02:27:06,600

adjustable is on the handrail but not on

1563

02:27:11,870 --> 02:27:08,880

the side pad yet right

1564

02:27:14,150 --> 02:27:11,880

there Luigi once you do reattach it we

1565

02:27:16,250 --> 02:27:14,160

recommend putting that adjustable with

1566

02:27:18,530 --> 02:27:16,260

both hooks to the tether loop on the

1567

02:27:20,870 --> 02:27:18,540

side pad otherwise you won't get enough

1568

02:27:23,349 --> 02:27:20,880

slack out of that adjustable in order to

1569

02:27:25,790 --> 02:27:23,359

really cinch it tight

1570

02:27:31,670 --> 02:27:25,800

after that

1571

02:27:45,530 --> 02:27:35,450

I'll uh right side is engaged looks like

1572

02:27:49,550 --> 02:27:47,330

and we're doing really well on time so

1573

02:27:51,889 --> 02:27:49,560

if you want to take any moments to

1574

02:27:54,469 --> 02:27:51,899

readjust your brt or anything I wonder

1575

02:27:56,210 --> 02:27:54,479

if you take your brt and come at that

1576

02:27:58,429 --> 02:27:56,220

handrail from the left side instead of

1577

02:28:01,429 --> 02:27:58,439

the right side it'll help you get in a

1578

02:28:08,090 --> 02:28:05,750

that effect or from the right side uh

1579

02:28:11,150 --> 02:28:08,100

yeah see how your uh the jaws of your

1580

02:28:13,429 --> 02:28:11,160

brt are coming from the right to the

1581

02:28:15,290 --> 02:28:13,439

left to that handrail if you come from

1582

02:28:16,730 --> 02:28:15,300

the opposite direction it may get you in

1583

02:28:19,309 --> 02:28:16,740

a better position for the left side

1584

02:28:23,450 --> 02:28:19,319

detents

1585

02:28:27,170 --> 02:28:25,550

yeah correct

1586

02:28:29,090 --> 02:28:27,180

but I'll leave it to your head on

1587

02:28:31,429 --> 02:28:29,100

expertise since you are actually there

1588

02:28:42,670 --> 02:28:31,439

okay okay

1589

02:28:54,110 --> 02:28:46,429

that's not work so I'm Gonna Change

1590

02:28:54,120 --> 02:29:00,950

all right

1591

02:29:05,090 --> 02:29:03,170

I will relocate the adjustable with my

1592

02:29:07,070 --> 02:29:05,100

thread

1593

02:29:09,950 --> 02:29:07,080

following the part one of the spacewalk

1594

02:29:11,389 --> 02:29:09,960

on January 20th ground teams here in

1595

02:29:13,010 --> 02:29:11,399

Mission Control were able to come up

1596

02:29:16,849 --> 02:29:13,020

with a number of troubleshooting items

1597

02:29:19,070 --> 02:29:16,859

for this mid-strut this includes using

1598

02:29:21,170 --> 02:29:19,080

tethers or various tools at their

1599

02:29:22,849 --> 02:29:21,180

disposal to help get this mid strut

1600

02:29:24,410 --> 02:29:22,859

installed they've got a checklist of

1601
02:29:26,929 --> 02:29:24,420
things that they can move down trying

1602
02:29:29,630 --> 02:29:26,939
one after the other if necessary until

1603
02:29:31,550 --> 02:29:29,640
the soft dock is complete and pulling on

1604
02:29:33,469 --> 02:29:31,560
it in order to get kind of an up and

1605
02:29:37,730 --> 02:29:33,479
down wiggle motion on the left side

1606
02:29:41,690 --> 02:29:39,830
without taking it around the handrail

1607
02:29:47,210 --> 02:29:41,700
yeah

1608
02:29:47,220 --> 02:29:52,670
like it doesn't go in

1609
02:29:52,680 --> 02:30:04,730
copy

1610
02:30:09,110 --> 02:30:07,190
well it looks like it's the right side

1611
02:30:11,330 --> 02:30:09,120
seems to be

1612
02:30:16,670 --> 02:30:11,340
actually engage the work of living days

1613
02:30:16,680 --> 02:30:25,610

the father doesn't go in

1614

02:30:29,570 --> 02:30:27,170

okay Gucci

1615

02:30:31,309 --> 02:30:29,580

let's have you take the adjustable the

1616

02:30:35,870 --> 02:30:31,319

other end of that hook

1617

02:30:38,090 --> 02:30:35,880

bring it back to the side Pad cover Loop

1618

02:30:40,610 --> 02:30:38,100

okay get it cinched so that the right

1619

02:30:44,570 --> 02:30:40,620

side stays engaged and then we'll try

1620

02:30:44,580 --> 02:30:51,469

see that

1621

02:30:51,479 --> 02:31:09,910

hey yes that's the adjustable

1622

02:31:14,510 --> 02:31:13,429

moving on to the next tool at their

1623

02:31:15,830 --> 02:31:14,520

disposal

1624

02:31:19,070 --> 02:31:15,840

um some of the troubleshooting items

1625

02:31:21,349 --> 02:31:19,080

here they used a adjustable equipment

1626
02:31:22,790 --> 02:31:21,359
tether on the handrails try to get that

1627
02:31:25,010 --> 02:31:22,800
into place

1628
02:31:26,809 --> 02:31:25,020
um now we're moving on to using one of

1629
02:31:27,950 --> 02:31:26,819
the Hammers that they have in their

1630
02:31:49,190 --> 02:31:27,960
toolbox

1631
02:31:53,690 --> 02:31:50,770
I was going to

1632
02:31:55,910 --> 02:31:53,700
all right let me know if I if I need the

1633
02:31:58,250 --> 02:31:55,920
position that's better but it looks like

1634
02:32:00,710 --> 02:31:58,260
it's pretty solid yeah yeah it looks

1635
02:32:02,210 --> 02:32:00,720
like it's the right side is engaged the

1636
02:32:03,469 --> 02:32:02,220
left side doesn't go away so let me you

1637
02:32:07,130 --> 02:32:03,479
can see what Connor reaching for his

1638
02:32:11,150 --> 02:32:09,230

yeah that's good words for me both and

1639

02:32:13,490 --> 02:32:11,160

it's really looking like that top detent

1640

02:32:15,650 --> 02:32:13,500

is just not going in so I think that's a

1641

02:32:17,750 --> 02:32:15,660

good place to start would you once

1642

02:32:19,370 --> 02:32:17,760

you've got that hammer okay and you're

1643

02:32:22,370 --> 02:32:19,380

Tethered to the Hammer just a reminder

1644

02:32:25,370 --> 02:32:22,380

we'll start with some gentle taps

1645

02:32:28,550 --> 02:32:25,380

the maximum load on the BGA is 50 pounds

1646

02:32:30,530 --> 02:32:28,560

and wait 30 seconds between the 10. copy

1647

02:32:33,349 --> 02:32:30,540

copy you'll also avoid the both as you

1648

02:32:37,370 --> 02:32:35,450

okay so I'm not gonna release the ribs

1649

02:32:39,110 --> 02:32:37,380

from the hammer just to keep it in the

1650

02:32:42,230 --> 02:32:39,120

TV a bag

1651
02:32:47,270 --> 02:32:45,230
they've been uh

1652
02:32:59,510 --> 02:32:47,280
every 30 seconds

1653
02:33:03,309 --> 02:33:01,250
at flight one

1654
02:33:17,630 --> 02:33:03,319
right

1655
02:33:23,030 --> 02:33:20,990
about 30 seconds and just a reminder

1656
02:33:25,190 --> 02:33:23,040
you'll want to hammer kind of right

1657
02:33:29,630 --> 02:33:25,200
where the tip of that arrow is you're

1658
02:33:29,640 --> 02:33:35,090
okay copy that

1659
02:33:39,469 --> 02:33:36,770
you're seeing the point of view of

1660
02:33:41,510 --> 02:33:39,479
Japanese astronaut koichiwakata on a

1661
02:33:45,170 --> 02:33:41,520
spacewalk to install a support structure

1662
02:33:47,330 --> 02:33:45,180
to hold solar arrays one day

1663
02:33:48,889 --> 02:33:47,340

he's working on the mid strut it's the

1664

02:33:50,929 --> 02:33:48,899

thing you see on your upper right most

1665

02:33:53,330 --> 02:33:50,939

corner of your screen that's the insulin

1666

02:33:54,650 --> 02:33:53,340

insulation there as well sometimes

1667

02:33:57,770 --> 02:33:54,660

underneath his hammer you'll see

1668

02:33:59,389 --> 02:33:57,780

something with an arrow that is what

1669

02:34:01,490 --> 02:33:59,399

he's trying to soft dock with the mass

1670

02:34:03,230 --> 02:34:01,500

canister you can see he's tried a number

1671

02:34:05,030 --> 02:34:03,240

of troubleshooting items there's a

1672

02:34:07,130 --> 02:34:05,040

tether in place there kind of pulling it

1673

02:34:13,130 --> 02:34:07,140

into place and now he's using his hammer

1674

02:34:13,140 --> 02:34:21,170

like it it went in a little bit

1675

02:34:26,690 --> 02:34:24,290

the goal here is for the mid strut to

1676
02:34:28,250 --> 02:34:26,700
lay flush and soft dock so that the

1677
02:34:36,130 --> 02:34:28,260
bolts can be driven and it can stay

1678
02:34:42,410 --> 02:34:39,349
did not go in

1679
02:34:45,349 --> 02:34:42,420
did I hit the Lower Side again or should

1680
02:34:46,910 --> 02:34:45,359
I hit the upper side of the arrow

1681
02:34:49,010 --> 02:34:46,920
sounds like we're making some good

1682
02:34:51,050 --> 02:34:49,020
progress we might try alternating

1683
02:34:54,230 --> 02:34:51,060
between the two see if you can get any

1684
02:34:54,240 --> 02:35:00,730
okay puppy you work

1685
02:35:06,349 --> 02:35:03,770
wakata is relaying what he's seeing down

1686
02:35:08,270 --> 02:35:06,359
to the crew here in Mission Control

1687
02:35:10,429 --> 02:35:08,280
Eva teams and Mission Control are

1688
02:35:12,170 --> 02:35:10,439

Consulting on what to do next and how

1689

02:35:15,050 --> 02:35:12,180

best to soft dock the piece of equipment

1690

02:35:18,230 --> 02:35:15,060

that he's working to get into place once

1691

02:35:27,590 --> 02:35:21,530

after that doesn't go in it seems to me

1692

02:35:33,170 --> 02:35:29,809

okay coffee koichi will have you try the

1693

02:35:39,410 --> 02:35:36,349

and yeah big picture we want as you're

1694

02:35:41,750 --> 02:35:39,420

looking at the side pad a little bit of

1695

02:35:44,210 --> 02:35:41,760

gentle rolling motion as you're trying

1696

02:35:46,490 --> 02:35:44,220

to wiggle it on to see if you can kind

1697

02:35:49,130 --> 02:35:46,500

of walk those detents in place

1698

02:35:52,969 --> 02:35:49,140

and so if needed we can have Duke from

1699

02:35:55,190 --> 02:35:52,979

her end do a pitch so body up and down

1700

02:35:58,070 --> 02:35:55,200

from her end as you're trying to work

1701

02:35:58,080 --> 02:36:02,950

okay yeah that will be helpful

1702

02:36:08,389 --> 02:36:04,910

that must be that

1703

02:36:10,670 --> 02:36:08,399

better I would say

1704

02:36:12,110 --> 02:36:10,680

so make this uh

1705

02:36:16,450 --> 02:36:12,120

bite that

1706

02:36:18,950 --> 02:36:16,460

goes this way you know what I mean

1707

02:36:22,990 --> 02:36:18,960

from my perspective

1708

02:36:27,110 --> 02:36:23,000

uh so your body is better

1709

02:36:33,170 --> 02:36:30,469

that's not the adorian Edition uh

1710

02:36:38,090 --> 02:36:33,180

yeah uh the robot in this orientation

1711

02:36:42,590 --> 02:36:40,309

koichiwakada trying a number of items to

1712

02:36:44,809 --> 02:36:42,600

get this mid strut installed and soft

1713

02:36:47,630 --> 02:36:44,819

dock to the mass canister

1714

02:36:50,030 --> 02:36:47,640

he's used some tethers to help help kind

1715

02:36:52,849 --> 02:36:50,040

of pull it into place he's used his

1716

02:36:54,710 --> 02:36:52,859

hammer to also try to to get it flush

1717

02:36:57,110 --> 02:36:54,720

there as well which made some progress

1718

02:36:59,270 --> 02:36:57,120

but now he's going to move on to using

1719

02:37:01,429 --> 02:36:59,280

some pliers that he has out there at his

1720

02:37:19,990 --> 02:37:01,439

disposal you can see them on your screen

1721

02:37:24,469 --> 02:37:22,429

do you see the gap

1722

02:37:27,530 --> 02:37:24,479

on my right side here

1723

02:37:33,230 --> 02:37:27,540

it's in Shadow right now I'm opening up

1724

02:37:38,510 --> 02:37:35,389

fire and

1725

02:37:41,090 --> 02:37:38,520

because of this gap on this side the

1726
02:37:43,309 --> 02:37:41,100
left side doesn't have any gaps so it's

1727
02:37:44,690 --> 02:37:43,319
really tight on the left side where I'm

1728
02:37:47,630 --> 02:37:44,700
pointing at now

1729
02:37:51,770 --> 02:37:47,640
it seems to me that somehow the right

1730
02:37:55,010 --> 02:37:51,780
side needs to engage further to the left

1731
02:38:00,469 --> 02:37:55,020
because there's some gaps here

1732
02:38:00,479 --> 02:38:06,590
checking koichi

1733
02:38:12,889 --> 02:38:09,469
it seems to me that we may need to use a

1734
02:38:18,230 --> 02:38:12,899
hammer to hit on this right side so that

1735
02:38:22,969 --> 02:38:20,809
copy kuichi let's think on that for just

1736
02:38:27,410 --> 02:38:22,979
a second is it

1737
02:38:29,450 --> 02:38:27,420
vertically oriented uh in the middle

1738
02:38:31,550 --> 02:38:29,460

of that GSE pad

1739

02:38:35,630 --> 02:38:31,560

like is it able to slide down at all

1740

02:38:49,429 --> 02:38:37,790

the top of the slot where the tongue is

1741

02:38:49,439 --> 02:39:07,849

foreign

1742

02:39:16,670 --> 02:39:09,770

so if it doesn't slide up and down

1743

02:39:22,010 --> 02:39:18,950

yeah it looks like it

1744

02:39:25,309 --> 02:39:22,020

okay copy we like your idea of using the

1745

02:39:26,990 --> 02:39:25,319

hammer to gently tap on that upper right

1746

02:39:30,290 --> 02:39:27,000

corner

1747

02:39:30,300 --> 02:39:34,070

this area

1748

02:39:47,530 --> 02:39:36,469

that I'm pointing up with my right hand

1749

02:39:51,530 --> 02:39:49,790

yeah can we see what you're pointing at

1750

02:39:54,170 --> 02:39:51,540

is where you will want to tap gently

1751

02:39:56,210 --> 02:39:54,180

with the hammer

1752

02:39:59,150 --> 02:39:56,220

okay

1753

02:40:02,570 --> 02:39:59,160

and Duke we can have you let go of your

1754

02:40:05,630 --> 02:40:02,580

end as well to alleviate any side loads

1755

02:40:07,490 --> 02:40:05,640

that may be imparted

1756

02:40:08,570 --> 02:40:07,500

koichi while you're tapping with the

1757

02:40:10,849 --> 02:40:08,580

hammer

1758

02:40:14,150 --> 02:40:10,859

you'll try to push in on the left side

1759

02:40:18,469 --> 02:40:16,550

you can see that silver box there at the

1760

02:40:19,730 --> 02:40:18,479

center of your screen that's a piece of

1761

02:40:21,830 --> 02:40:19,740

equipment that they're trying to lay

1762

02:40:23,690 --> 02:40:21,840

flush against the mass cancer he is

1763

02:40:25,550 --> 02:40:23,700

tightened down as you can you could use

1764

02:40:27,590 --> 02:40:25,560

your mini workstation end effector maybe

1765

02:40:29,570 --> 02:40:27,600

if that helps you but you'll need

1766

02:40:35,110 --> 02:40:29,580

something to react against so that you

1767

02:40:35,120 --> 02:40:39,410

and then

1768

02:41:23,690 --> 02:40:41,630

whatever fits and intersections attached

1769

02:41:34,190 --> 02:41:25,510

okay I will

1770

02:41:41,090 --> 02:41:36,710

yeah and it may be just ever so slightly

1771

02:41:43,429 --> 02:41:41,100

too high vertically on the GSE pad so as

1772

02:41:50,450 --> 02:41:43,439

you're pushing in also try to push a

1773

02:42:01,250 --> 02:41:52,190

and we've got a Handover coming up in

1774

02:42:01,260 --> 02:42:05,450

foreign

1775

02:42:05,460 --> 02:42:10,429

[Music]

1776
02:42:15,830 --> 02:42:13,010
so we've got live views here of Mission

1777
02:42:18,530 --> 02:42:15,840
Control you can see towards the left

1778
02:42:20,510 --> 02:42:18,540
side of the aisle the gentleman standing

1779
02:42:22,730 --> 02:42:20,520
in the vest that's Keith Johnson he's

1780
02:42:25,130 --> 02:42:22,740
our lead spacewalk officer for this

1781
02:42:27,710 --> 02:42:25,140
operation he's Consulting with that team

1782
02:42:29,450 --> 02:42:27,720
of experts there on what they're seeing

1783
02:42:31,010 --> 02:42:29,460
on the equipment while also hearing what

1784
02:42:33,050 --> 02:42:31,020
koichi is relaying that he can see

1785
02:42:37,070 --> 02:42:33,060
through his eyes and trying to determine

1786
02:42:44,750 --> 02:42:39,050
you can see this group in a bit of a

1787
02:42:49,010 --> 02:42:47,090
because relaying what he's trying and

1788
02:42:51,170 --> 02:42:49,020

what he's seeing to this team here and

1789

02:42:53,510 --> 02:42:51,180

they're giving recommendations on on the

1790

02:42:56,450 --> 02:42:53,520

next moves all right

1791

02:43:00,770 --> 02:42:56,460

yeah I hit the uh on the right side but

1792

02:43:06,830 --> 02:43:02,690

let me

1793

02:43:21,170 --> 02:43:09,530

they're playing it too again

1794

02:43:25,010 --> 02:43:23,330

we're back with live views now at the

1795

02:43:27,349 --> 02:43:25,020

International Space Station

1796

02:43:28,790 --> 02:43:27,359

okay we've got your heck of you back

1797

02:43:30,469 --> 02:43:28,800

koichi

1798

02:43:32,990 --> 02:43:30,479

and I know it's going to be tricky

1799

02:43:35,510 --> 02:43:33,000

needing to use your left hand to react

1800

02:43:38,330 --> 02:43:35,520

to the forces but as you're pushing that

1801
02:43:40,790 --> 02:43:38,340
detent you also need to push in on the

1802
02:43:45,110 --> 02:43:40,800
side pad so that it's going into the GSE

1803
02:43:45,120 --> 02:43:47,929
okay

1804
02:43:52,670 --> 02:43:50,210
so what you mean and I have BFG and then

1805
02:43:54,290 --> 02:43:52,680
I mean we're expensive end effector

1806
02:43:56,690 --> 02:43:54,300
really difficult because that's the

1807
02:44:01,550 --> 02:43:56,700
fourth of pushing this in in the

1808
02:44:08,290 --> 02:44:04,309
yeah definitely understand you need a

1809
02:44:17,510 --> 02:44:10,910
you're hammering from the right side did

1810
02:44:23,630 --> 02:44:19,220
is

1811
02:44:23,640 --> 02:44:27,050
first so

1812
02:44:42,349 --> 02:44:28,550
preventing this

1813
02:44:54,230 --> 02:44:45,170

I'm gonna try to detangle the bottom

1814

02:44:54,240 --> 02:45:17,420

every person that Erp

1815

02:45:17,430 --> 02:45:22,790

[Applause]

1816

02:45:22,800 --> 02:46:03,889

foreign

1817

02:46:03,899 --> 02:46:12,980

thank you

1818

02:46:18,650 --> 02:46:14,170

[Applause]

1819

02:46:23,929 --> 02:46:18,660

the right side is probably engaged in

1820

02:46:23,939 --> 02:46:27,950

standby

1821

02:46:27,960 --> 02:47:25,910

okay

1822

02:47:30,710 --> 02:47:28,190

all right koichi we are talking it down

1823

02:47:33,469 --> 02:47:30,720

here if we could get your best big

1824

02:47:36,170 --> 02:47:33,479

picture summary of what you think is

1825

02:47:38,570 --> 02:47:36,180

going on what might be interfering

1826

02:47:40,730 --> 02:47:38,580

whether it's the side pad itself if it's

1827

02:47:44,450 --> 02:47:40,740

the detents

1828

02:47:48,290 --> 02:47:44,460

and I think you got that bottom detent

1829

02:47:50,450 --> 02:47:48,300

engaged before

1830

02:47:51,530 --> 02:47:50,460

is that correct

1831

02:47:54,110 --> 02:47:51,540

all right

1832

02:47:55,250 --> 02:47:54,120

no it's not very positive I don't think

1833

02:47:57,889 --> 02:47:55,260

it was

1834

02:48:01,190 --> 02:47:57,899

engaged there's simply that the

1835

02:48:04,610 --> 02:48:01,200

detectives about the interference

1836

02:48:07,550 --> 02:48:04,620

just the uh the width of the uh the

1837

02:48:10,070 --> 02:48:07,560

widths of the society test

1838

02:48:19,990 --> 02:48:10,080

uh may not be

1839

02:48:23,950 --> 02:48:22,370

or not

1840

02:48:26,690 --> 02:48:23,960

okay

1841

02:48:29,330 --> 02:48:26,700

do you think the lip of this iPad is

1842

02:48:34,240 --> 02:48:29,340

actually hitting the GSE

1843

02:48:37,910 --> 02:48:35,809

[Applause]

1844

02:48:39,290 --> 02:48:37,920

see that's also a negative

1845

02:48:41,090 --> 02:48:39,300

I think it's uh

1846

02:48:45,710 --> 02:48:41,100

you know uh

1847

02:48:48,309 --> 02:48:45,720

this website the lip is already engaged

1848

02:48:50,330 --> 02:48:48,319

on the right on the left side of this uh

1849

02:48:50,590 --> 02:48:50,340

structure so

1850

02:49:01,270 --> 02:48:50,600

um

1851
02:49:06,590 --> 02:49:03,410
it does not

1852
02:49:12,950 --> 02:49:06,600
but if I push down the detect Phil

1853
02:49:12,960 --> 02:49:20,750
is it the possible to type in N1 and M4

1854
02:49:27,290 --> 02:49:24,770
checking guiji but they uh I make him

1855
02:49:38,929 --> 02:49:27,300
spend more room for in one of them free

1856
02:49:43,849 --> 02:49:41,630
but this time can I engage in one of

1857
02:49:46,070 --> 02:49:43,859
them three with the at night

1858
02:49:49,370 --> 02:49:46,080
awareness to

1859
02:49:51,710 --> 02:49:49,380
yeah Gucci we do not recommend that will

1860
02:49:54,830 --> 02:49:51,720
not start engaging anymore until we have

1861
02:49:56,630 --> 02:49:54,840
those detents in place

1862
02:50:01,730 --> 02:49:56,640
copy that

1863
02:50:27,309 --> 02:50:03,590

any other

1864

02:50:32,630 --> 02:50:30,469

reporting what he can see what he has

1865

02:50:34,429 --> 02:50:32,640

tried as well as giving his own

1866

02:50:36,290 --> 02:50:34,439

recommendations to the crew here in

1867

02:50:38,690 --> 02:50:36,300

Mission Control they're weighing their

1868

02:50:41,330 --> 02:50:38,700

options and talking as a group and

1869

02:50:45,050 --> 02:50:41,340

sending some recommendations up up his

1870

02:50:45,060 --> 02:50:54,860

foreign

1871

02:50:54,870 --> 02:51:02,349

[Music]

1872

02:51:05,870 --> 02:51:04,490

let's have you do that and we'll be

1873

02:51:07,910 --> 02:51:05,880

talking some solutions here on the

1874

02:51:09,590 --> 02:51:07,920

ground

1875

02:51:14,990 --> 02:51:09,600

okay copy that

1876
02:51:18,230 --> 02:51:15,000
I'm gonna uh closer adjustable and then

1877
02:51:22,969 --> 02:51:18,240
you got the site tabs if you for kind of

1878
02:51:28,330 --> 02:51:26,990
an energy is one adjustable from the

1879
02:51:35,330 --> 02:51:28,340
beginning

1880
02:51:38,630 --> 02:51:37,010
The View you're getting now is the

1881
02:51:40,670 --> 02:51:38,640
spacesuit with the red stripes is now

1882
02:51:42,710 --> 02:51:40,680
it's astronaut Nicole man she's holding

1883
02:51:44,929 --> 02:51:42,720
the other end of the midstret while

1884
02:51:47,090 --> 02:51:44,939
koichi's working on that that gray

1885
02:51:50,630 --> 02:51:47,100
Square working it to get flush against

1886
02:51:55,309 --> 02:51:50,640
the mass canister it just goes in

1887
02:52:01,309 --> 02:51:55,319
God uh scratch this let the details go

1888
02:52:06,290 --> 02:52:03,790

so it seems to be that big and uh

1889

02:52:14,929 --> 02:52:06,300

releasing the defense approaching the

1890

02:52:21,050 --> 02:52:18,590

and then looking at them aside fat side

1891

02:52:22,010 --> 02:52:21,060

I don't see any interference on this

1892

02:52:25,969 --> 02:52:22,020

side

1893

02:52:29,030 --> 02:52:25,979

so thank you it is the

1894

02:52:33,650 --> 02:52:31,250

and then uh

1895

02:52:36,530 --> 02:52:33,660

I guess

1896

02:52:38,809 --> 02:52:36,540

I need to stabilize my body position and

1897

02:52:40,190 --> 02:52:38,819

then apply

1898

02:52:43,490 --> 02:52:40,200

stable

1899

02:52:45,410 --> 02:52:43,500

support for the plunger

1900

02:52:47,690 --> 02:52:45,420

and then say that that you have

1901

02:52:49,370 --> 02:52:47,700

different

1902

02:52:55,309 --> 02:52:49,380

uh

1903

02:53:00,050 --> 02:52:57,950

can you send it now the mixture yeah

1904

02:53:30,450 --> 02:53:00,060

give me a second okay

1905

02:53:30,460 --> 02:53:43,190

[Applause]

1906

02:54:33,170 --> 02:53:46,490

that's it left side doesn't go in

1907

02:54:33,180 --> 02:54:50,170

foreign

1908

02:54:57,050 --> 02:54:53,990

to astronauts are out on a spacewalk to

1909

02:54:59,269 --> 02:54:57,060

complete installation of a mod kit or

1910

02:55:02,389 --> 02:54:59,279

mounting bracket for future solar arrays

1911

02:55:05,210 --> 02:55:02,399

they completed they started work on this

1912

02:55:06,950 --> 02:55:05,220

back on January 20th and they're back

1913

02:55:08,990 --> 02:55:06,960

out for their second spacewalk to

1914

02:55:11,090 --> 02:55:09,000

complete their work

1915

02:55:12,769 --> 02:55:11,100

um the first time around this mid strut

1916

02:55:14,570 --> 02:55:12,779

that they're working on now gave them a

1917

02:55:16,429 --> 02:55:14,580

little bit of trouble so now they're

1918

02:55:19,030 --> 02:55:16,439

back for a part two to try to get that

1919

02:55:21,650 --> 02:55:19,040

into place teams here in Mission Control

1920

02:55:24,790 --> 02:55:21,660

are looking at the hardware now they

1921

02:55:28,370 --> 02:55:24,800

have an exact model of the hardware

1922

02:55:30,830 --> 02:55:28,380

taking what kuichiwakata is saying and

1923

02:55:36,070 --> 02:55:30,840

seeing and feeling with his hands to try

1924

02:55:40,610 --> 02:55:38,450

here's a number of tools at his disposal

1925

02:55:43,610 --> 02:55:40,620

that he may be able to use he may also

1926

02:55:45,050 --> 02:55:43,620

be able to elicit the help of NASA

1927

02:55:47,030 --> 02:55:45,060

astronaut Nicole Mann who's holding on

1928

02:55:49,309 --> 02:55:47,040

to the other side it is a pretty tight

1929

02:55:52,849 --> 02:55:49,319

work space so Mission Control teams are

1930

02:55:56,450 --> 02:55:52,859

still determining the next steps

1931

02:56:00,290 --> 02:55:56,460

because uh I think I I need the the

1932

02:56:04,309 --> 02:56:00,300

three hands to do that yeah so uh being

1933

02:56:06,710 --> 02:56:04,319

a degree if the dude comes in here

1934

02:56:09,410 --> 02:56:06,720

and you know on the lower side on the

1935

02:56:17,809 --> 02:56:09,420

long handrail and then she she can

1936

02:56:17,819 --> 02:57:01,690

yeah checking on that koichi

1937

02:57:08,150 --> 02:57:04,790

okay before we have Duke come over we do

1938

02:57:11,269 --> 02:57:08,160

like the suggestion to have Duke do a

1939

02:57:14,570 --> 02:57:11,279

yawing motion from her perspective

1940

02:57:23,030 --> 02:57:14,580

as koichi is ideally depressing both of

1941

02:57:27,469 --> 02:57:26,030

I think a steady gentle pressure from

1942

02:57:40,250 --> 02:57:27,479

you

1943

02:57:41,389 --> 02:57:40,260

strut will hit a pin on the side pad and

1944

02:57:44,330 --> 02:57:41,399

that way you'll be able to actually

1945

02:57:50,769 --> 02:57:44,340

apply pressure as opposed to before you

1946

02:57:55,490 --> 02:57:53,210

out there

1947

02:57:56,990 --> 02:57:55,500

indeed a difficult

1948

02:57:59,929 --> 02:57:57,000

just used to

1949

02:58:02,750 --> 02:57:59,939

that fires at the same time

1950

02:58:05,570 --> 02:58:02,760

the coffee we could have used depress

1951

02:58:08,990 --> 02:58:05,580

both with your fingers and try to get

1952

02:58:10,910 --> 02:58:09,000

them depressed as much as possible and

1953

02:58:14,269 --> 02:58:10,920

then see if we can get it installed

1954

02:58:17,690 --> 02:58:14,279

before the defense pop back out

1955

02:58:20,230 --> 02:58:17,700

and stretching the tape okay

1956

02:58:23,090 --> 02:58:20,240

okay

1957

02:58:25,730 --> 02:58:23,100

just like that

1958

02:58:28,309 --> 02:58:25,740

we're in a split screen view now both

1959

02:58:30,889 --> 02:58:28,319

spacewalkers working together so you can

1960

02:58:34,849 --> 02:58:30,899

visualize this mid-strat as this long

1961

02:58:36,950 --> 02:58:34,859

telescoping pole so it can extend or

1962

02:58:39,590 --> 02:58:36,960

retract as needed

1963

02:58:42,050 --> 02:58:39,600

um NASA astronaut Nicole Mann is holding

1964

02:58:44,330 --> 02:58:42,060

one end of this pole while koichiwakata

1965

02:58:46,450 --> 02:58:44,340

is holding the other his view on the

1966

02:58:48,889 --> 02:58:46,460

right side there wakada trying to get

1967

02:58:50,570 --> 02:58:48,899

that piece that he's holding in his

1968

02:58:53,150 --> 02:58:50,580

hands flush up against with that

1969

02:58:55,250 --> 02:58:53,160

rectangle out on the masked canister

1970

02:58:58,490 --> 02:58:55,260

Nicole man is now going to work with him

1971

02:59:00,950 --> 02:58:58,500

kind of twisting and wiggling from her

1972

02:59:02,750 --> 02:59:00,960

end to try to snap it into place as well

1973

02:59:04,849 --> 02:59:02,760

meanwhile here in Mission Control we've

1974

02:59:06,349 --> 02:59:04,859

got models of the exact equipment that

1975

02:59:08,330 --> 02:59:06,359

they're using here in Mission Control

1976

02:59:11,750 --> 02:59:08,340

being looked at for possible solutions

1977

02:59:11,760 --> 02:59:21,910

okay

1978

02:59:27,170 --> 02:59:24,410

but the other one is not the thing that

1979

02:59:29,510 --> 02:59:27,180

they just cut it off

1980

02:59:31,610 --> 02:59:29,520

copy

1981

02:59:38,450 --> 02:59:31,620

which one is staying and which one is

1982

02:59:41,929 --> 02:59:39,969

and

1983

02:59:44,510 --> 02:59:41,939

if you flip it's going to be your

1984

02:59:47,450 --> 02:59:44,520

appetite appetite will stay in the Lower

1985

02:59:50,929 --> 02:59:47,460

Side just take this uh almost damaged so

1986

02:59:55,010 --> 02:59:50,939

it doesn't stay okay coffee thanks

1987

02:59:55,020 --> 03:00:53,090

okay

1988

03:00:58,370 --> 03:00:55,849

for now about two hours into this

1989

03:01:00,410 --> 03:00:58,380

spacewalk estimated to last about seven

1990

03:01:02,330 --> 03:01:00,420

hours

1991

03:01:04,250 --> 03:01:02,340

they've already completed their first

1992

03:01:07,010 --> 03:01:04,260

task of the day of doing some

1993

03:01:08,450 --> 03:01:07,020

inspections on the uh on the lower strut

1994

03:01:10,370 --> 03:01:08,460

and now they're working on installation

1995

03:01:11,809 --> 03:01:10,380

of the mid strap to get those detents

1996

03:01:15,050 --> 03:01:11,819

more depressed

1997

03:01:16,790 --> 03:01:15,060

do you think you're able to hold one end

1998

03:01:19,490 --> 03:01:16,800

of the tape

1999

03:01:21,050 --> 03:01:19,500

so the non-loop end right

2000

03:01:22,670 --> 03:01:21,060

kind of keep some pressure on it with

2001

03:01:26,150 --> 03:01:22,680

your thumb

2002

03:01:28,429 --> 03:01:26,160

and then peel up the other end slightly

2003

03:01:31,610 --> 03:01:28,439

add a little more depression to that

2004

03:01:44,330 --> 03:01:31,620

detent and then reinstall the tape with

2005

03:01:44,340 --> 03:01:48,530

can I you ever go to do that

2006

03:01:54,230 --> 03:01:51,590

hey firm kuichi

2007

03:01:56,809 --> 03:01:54,240

okay in work

2008

03:01:59,330 --> 03:01:56,819

and you may want to pinch the other end

2009

03:02:00,710 --> 03:01:59,340

with your some uh

2010

03:02:02,150 --> 03:02:00,720

coming at it from a slightly different

2011

03:02:04,450 --> 03:02:02,160

direction oh

2012

03:02:07,010 --> 03:02:04,460

oh but you see the tape broken

2013

03:02:10,550 --> 03:02:07,020

yeah so you can get that in your uh

2014

03:02:10,560 --> 03:02:15,290

yes I can

2015

03:02:20,500 --> 03:02:16,849

oh you don't want to use this date

2016

03:02:37,550 --> 03:02:25,930

[Music]

2017

03:02:42,290 --> 03:02:39,469

Gucci if you think there might still be

2018

03:02:43,849 --> 03:02:42,300

enough sticky on that length of tape

2019

03:02:47,150 --> 03:02:43,859

that you pulled off

2020

03:02:49,309 --> 03:02:47,160

in order to reapply with a little more

2021

03:02:52,849 --> 03:02:49,319

tension over that detent

2022

03:02:52,859 --> 03:03:06,690

that

2023

03:03:11,330 --> 03:03:08,330

[Music]

2024

03:03:14,510 --> 03:03:11,340

astronaut kobichiwakata working with

2025

03:03:17,690 --> 03:03:14,520

tape in an effort to get that piece in

2026

03:03:19,309 --> 03:03:17,700

his hands flush with the rectangle on

2027

03:03:21,050 --> 03:03:19,319

the mask canister there she's trying to

2028

03:03:22,910 --> 03:03:21,060

soft dock them and tape is just one of

2029

03:03:25,990 --> 03:03:22,920

the many tools he's using to get that

2030

03:03:30,830 --> 03:03:28,190

unfortunately a bit of the tape has come

2031

03:03:33,349 --> 03:03:30,840

off but he has an additional roll of

2032

03:03:34,790 --> 03:03:33,359

tape there in his tool bag if needed but

2033

03:03:37,070 --> 03:03:34,800

if he thinks he can use the existing

2034

03:03:38,880 --> 03:03:37,080

piece Mission Control has relayed that's

2035

03:03:49,370 --> 03:03:38,890

okay too

2036

03:03:58,070 --> 03:03:49,380

[Music]

2037

03:03:58,080 --> 03:04:02,070

foreign

2038

03:04:33,309 --> 03:04:10,360

[Music]

2039

03:04:35,030 --> 03:04:33,319

while this installation is giving

2040

03:04:36,889 --> 03:04:35,040

koichiwakata a little bit of trouble

2041

03:04:38,630 --> 03:04:36,899

teams here in Mission Control just

2042

03:04:40,550 --> 03:04:38,640

relayed that even though we're at the

2043

03:04:42,110 --> 03:04:40,560

two hour mark there's still plenty of

2044

03:04:43,969 --> 03:04:42,120

time left in this spacewalk to

2045

03:04:47,450 --> 03:04:43,979

troubleshoot and plenty of ideas still

2046

03:05:20,570 --> 03:04:49,250

they remain optimistic about this

2047

03:05:24,769 --> 03:05:22,910

or you can you see on the left side the

2048

03:05:27,290 --> 03:05:24,779

holes that the details go into

2049

03:05:29,090 --> 03:05:27,300

that's very good can you see on the left

2050

03:05:33,950 --> 03:05:29,100

side so um

2051
03:05:53,360 --> 03:05:37,969
yeah there's a yeah it's clear

2052
03:06:05,630 --> 03:06:02,260
[Music]

2053
03:06:09,170 --> 03:06:05,640
fire

2054
03:06:16,969 --> 03:06:09,180
while I put the right tab

2055
03:06:21,710 --> 03:06:18,610
and it takes

2056
03:06:28,790 --> 03:06:21,720
they're not keeping the plungers in

2057
03:06:35,510 --> 03:06:31,910
I cannot think any better option than

2058
03:06:40,849 --> 03:06:37,670
we're following along guys and talking

2059
03:07:01,120 --> 03:06:40,859
it on the ground here standby

2060
03:07:01,130 --> 03:07:25,309
[Applause]

2061
03:07:30,110 --> 03:07:27,590
teams here in Mission Control are

2062
03:07:32,570 --> 03:07:30,120
troubleshooting this mid-strut debating

2063
03:07:34,309 --> 03:07:32,580

on bringing Nicole Mann over to the work

2064

03:07:36,710 --> 03:07:34,319

site

2065

03:07:39,050 --> 03:07:36,720

or perhaps suggesting koichi will cause

2066

03:07:41,750 --> 03:07:39,060

you some of the tools a plier or some

2067

03:07:43,370 --> 03:07:41,760

hammers or the tape at his disposal to

2068

03:08:11,450 --> 03:07:43,380

try a couple of things before she comes

2069

03:08:15,060 --> 03:08:12,820

foreign

2070

03:08:32,230 --> 03:08:15,070

[Applause]

2071

03:08:36,530 --> 03:08:34,910

to have Duke come over to you in the

2072

03:08:38,929 --> 03:08:36,540

meantime we'll have you do one more try

2073

03:08:41,929 --> 03:08:38,939

with koichi just in place there

2074

03:08:43,730 --> 03:08:41,939

well we'll have you do kuichi is get in

2075

03:08:46,849 --> 03:08:43,740

a as good a body position as you can

2076

03:08:54,170 --> 03:08:46,859

you'll engage the right side of the side

2077

03:08:59,929 --> 03:08:57,530

you'll install the adjustable

2078

03:09:02,870 --> 03:08:59,939

on that handrail just to keep the side

2079

03:09:04,670 --> 03:09:02,880

pad in place as best you can

2080

03:09:07,550 --> 03:09:04,680

and then we're going to use the pliers

2081

03:09:08,929 --> 03:09:07,560

handle as kind of a pry bar and I'll be

2082

03:09:12,590 --> 03:09:08,939

talking you through that in just a

2083

03:09:16,490 --> 03:09:13,849

okay

2084

03:09:19,450 --> 03:09:16,500

the the last portion uh you're not

2085

03:09:22,010 --> 03:09:19,460

mentioned in you're gonna use the um

2086

03:09:24,110 --> 03:09:22,020

basically get it installed as best you

2087

03:09:26,090 --> 03:09:24,120

can you'll take that adjustable around

2088

03:09:27,469 --> 03:09:26,100

the handrail and back to the tether

2089

03:09:30,230 --> 03:09:27,479

point and then I'll have some more work

2090

03:10:42,170 --> 03:09:30,240

for you in a moment

2091

03:10:42,180 --> 03:10:59,630

the president United

2092

03:11:20,870 --> 03:11:01,610

okay stand by kuichi we're talking one

2093

03:11:58,330 --> 03:11:48,110

foreign

2094

03:11:58,340 --> 03:12:04,429

we're going to have you grab the pliers

2095

03:12:10,610 --> 03:12:07,490

okay and insert

2096

03:12:10,620 --> 03:12:14,750

into the tether point

2097

03:12:20,870 --> 03:12:17,510

toward the mass canister yeah exactly

2098

03:12:22,849 --> 03:12:20,880

yeah so gently go through the hole of

2099

03:12:25,910 --> 03:12:22,859

the tether Point yeah kind of aiming

2100

03:12:29,450 --> 03:12:25,920

between okay yeah not too far you want

2101
03:12:32,690 --> 03:12:29,460
the bottom end of the pliers to just be

2102
03:12:34,849 --> 03:12:32,700
touching the metal of the side pad

2103
03:12:37,849 --> 03:12:34,859
and now you're going to yarn to your

2104
03:12:42,349 --> 03:12:40,250
bringing the pliers toward the handrail

2105
03:12:45,110 --> 03:12:42,359
that your left hand is on and use it as

2106
03:12:48,830 --> 03:12:45,120
a pry bar you may want to take the

2107
03:12:50,929 --> 03:12:48,840
pliers and go 90 degrees off from where

2108
03:12:52,130 --> 03:12:50,939
you are rotate them ready yeah exactly

2109
03:12:54,290 --> 03:12:52,140
so that you're not using the bent

2110
03:12:57,349 --> 03:12:54,300
portion of the pliers have a straight

2111
03:12:59,269 --> 03:12:57,359
face going there and apply a gentle

2112
03:13:04,250 --> 03:12:59,279
steady

2113
03:13:10,010 --> 03:13:07,429

and I'm seeing a much bigger Gap than

2114

03:13:12,290 --> 03:13:10,020

before up top so I think that detent is

2115

03:13:22,550 --> 03:13:12,300

not even starting to engage on the top

2116

03:13:32,050 --> 03:13:25,370

I think it is it's a

2117

03:13:38,269 --> 03:13:34,790

oh this

2118

03:13:40,070 --> 03:13:38,279

I use it but now this

2119

03:13:46,550 --> 03:13:40,080

uh

2120

03:13:51,769 --> 03:13:49,490

give me it

2121

03:13:53,400 --> 03:13:51,779

was not a lot of force but they're just

2122

03:13:56,389 --> 03:13:53,410

a tiny bit of a

2123

03:13:59,269 --> 03:13:56,399

[Music]

2124

03:14:02,750 --> 03:14:01,070

okay okay

2125

03:14:06,410 --> 03:14:02,760

and you can put them in your trash bag

2126
03:14:09,530 --> 03:14:08,450
okay uh

2127
03:14:11,929 --> 03:14:09,540
so this

2128
03:14:13,490 --> 03:14:11,939
is Xena Carbon on your screen she's the

2129
03:14:16,429 --> 03:14:13,500
voice that you hear communicating with

2130
03:14:24,910 --> 03:14:17,950
you agree

2131
03:14:31,190 --> 03:14:27,230
kuichiwakata just attempted to use his

2132
03:14:32,750 --> 03:14:31,200
pliers kind of repurposing it as a as a

2133
03:14:35,330 --> 03:14:32,760
way to

2134
03:14:38,150 --> 03:14:35,340
plow the other side of it back into

2135
03:14:40,070 --> 03:14:38,160
place unfortunately the force was a

2136
03:14:43,070 --> 03:14:40,080
little too much for the pliers and they

2137
03:14:45,290 --> 03:14:43,080
snapped so kuichi fortunately has a

2138
03:14:46,790 --> 03:14:45,300

trash bag up there with him and the crew

2139

03:14:48,950 --> 03:14:46,800

is just making sure that he doesn't

2140

03:14:50,330 --> 03:14:48,960

touch any of the sharp edges as we don't

2141

03:14:52,190 --> 03:14:50,340

want to cause any damage to the

2142

03:14:53,990 --> 03:14:52,200

spacesuits and now we're working on

2143

03:14:58,350 --> 03:14:54,000

another solution

2144

03:14:58,360 --> 03:15:13,269

[Applause]

2145

03:15:29,750 --> 03:15:15,469

we're talking a plan down here guys

2146

03:15:59,530 --> 03:15:33,230

one more

2147

03:16:05,809 --> 03:16:02,510

but that did you see any progress when

2148

03:16:09,889 --> 03:16:05,819

you did that or not no no no progress at

2149

03:16:09,899 --> 03:16:47,349

foreign

2150

03:16:51,349 --> 03:16:49,309

moving on now to the next

2151
03:16:53,690 --> 03:16:51,359
troubleshooting option having NASA

2152
03:16:56,389 --> 03:16:53,700
astronaut Nicole man move over one more

2153
03:16:58,130 --> 03:16:56,399
try before we have Duke come over to

2154
03:17:01,070 --> 03:16:58,140
where koichi is

2155
03:17:03,830 --> 03:17:01,080
we'll have her do that yawing motion so

2156
03:17:06,889 --> 03:17:03,840
going to her body left with her end of

2157
03:17:11,750 --> 03:17:09,830
and then koichi on your end

2158
03:17:13,969 --> 03:17:11,760
if you can get in as good a body

2159
03:17:15,469 --> 03:17:13,979
position as possible

2160
03:17:17,570 --> 03:17:15,479
stay stable

2161
03:17:19,429 --> 03:17:17,580
and use the pliers

2162
03:17:23,389 --> 03:17:19,439
you'll need both the needle nose pliers

2163
03:17:26,330 --> 03:17:23,399

and the taped pliers

2164

03:17:28,250 --> 03:17:26,340

and we want you to be depressing both of

2165

03:17:33,230 --> 03:17:28,260

those detents at the same time while

2166

03:17:33,240 --> 03:17:36,290

okay

2167

03:17:44,030 --> 03:17:40,490

and data for ev1 PCD is at once

2168

03:17:55,250 --> 03:17:46,070

the needle notes are below your right

2169

03:17:55,260 --> 03:18:00,230

okay

2170

03:18:04,190 --> 03:18:02,450

looks like NASA astronaut Nicole man is

2171

03:18:05,870 --> 03:18:04,200

going to stay put as they try one more

2172

03:18:07,849 --> 03:18:05,880

thing she's holding the other end of

2173

03:18:09,349 --> 03:18:07,859

this mid strut if you look towards the

2174

03:18:11,150 --> 03:18:09,359

top of your screen you can see that one

2175

03:18:13,070 --> 03:18:11,160

of her feet is inside of her portable

2176

03:18:14,630 --> 03:18:13,080

foot restraint so if she were to come

2177

03:18:17,330 --> 03:18:14,640

over to kuichi she would need to egress

2178

03:18:18,830 --> 03:18:17,340

that and then Mission Control has the

2179

03:18:23,340 --> 03:18:18,840

path forward that they would like her to

2180

03:18:23,350 --> 03:18:27,309

[Music]

2181

03:18:27,319 --> 03:18:32,330

one of the fires right exactly

2182

03:18:32,340 --> 03:18:39,910

okay

2183

03:18:48,349 --> 03:18:42,769

VRT and I may work system and this

2184

03:18:48,359 --> 03:19:05,929

copy quiche

2185

03:19:11,030 --> 03:19:08,450

it's a blood operation on one side I can

2186

03:19:13,429 --> 03:19:11,040

see one side clearly but the uh

2187

03:19:17,450 --> 03:19:13,439

that doesn't allow me to look at the

2188

03:19:20,929 --> 03:19:17,460

bottom side but I think I can feel the

2189

03:19:22,910 --> 03:19:20,939

plunger with the needle nose Okay copy

2190

03:19:25,190 --> 03:19:22,920

if you're getting some good tactile

2191

03:19:31,730 --> 03:19:25,200

feedback as best you can

2192

03:19:31,740 --> 03:19:34,010

it

2193

03:19:34,020 --> 03:19:36,290

yeah

2194

03:19:36,300 --> 03:19:42,530

what tools

2195

03:20:08,750 --> 03:19:46,610

and let me know and I can yaw some more

2196

03:20:17,469 --> 03:20:10,670

Duke for you if we could have you hold

2197

03:20:17,479 --> 03:20:28,550

thank you

2198

03:20:28,560 --> 03:20:37,370

so I can do the uh

2199

03:20:40,370 --> 03:20:39,469

I can feel the defense on the upper side

2200

03:20:42,230 --> 03:20:40,380

but

2201
03:20:51,950 --> 03:20:42,240
that you see the depends on the left

2202
03:20:59,450 --> 03:20:54,530
okay let me uh

2203
03:21:01,190 --> 03:20:59,460
first let me handle the broken pliers

2204
03:21:11,150 --> 03:21:01,200
that I don't

2205
03:21:17,150 --> 03:21:14,570
uh what's the uh plans with the uh the

2206
03:21:19,849 --> 03:21:17,160
damaged fires

2207
03:21:22,610 --> 03:21:19,859
can I just leave it outside it's still

2208
03:21:25,010 --> 03:21:22,620
tight it's connected so it doesn't go

2209
03:21:27,650 --> 03:21:25,020
anywhere but copy yeah we're concerned

2210
03:21:29,929 --> 03:21:27,660
about a sharp edge there so we just want

2211
03:21:33,050 --> 03:21:29,939
it to be out of the way and be careful

2212
03:21:34,370 --> 03:21:33,060
not to grab that end of the pliers but

2213
03:21:36,830 --> 03:21:34,380

understand it won't fit in your trash

2214

03:21:40,370 --> 03:21:38,330

right

2215

03:21:41,870 --> 03:21:40,380

I'm gonna put it in possibly and if

2216

03:21:43,309 --> 03:21:41,880

that's that so I don't accidentally

2217

03:21:45,530 --> 03:21:43,319

touch it

2218

03:21:49,070 --> 03:21:45,540

that'd be something I'm gonna grab the

2219

03:21:57,950 --> 03:21:49,080

other plier okay good plan I grab the

2220

03:22:02,870 --> 03:22:00,710

recap a little bit of what's going on uh

2221

03:22:06,170 --> 03:22:02,880

we're doing a lot of troubleshooting on

2222

03:22:08,150 --> 03:22:06,180

how to get that mid strut installed it's

2223

03:22:10,670 --> 03:22:08,160

part of this greater installation for

2224

03:22:12,830 --> 03:22:10,680

this mod kit or support structure that

2225

03:22:14,710 --> 03:22:12,840

they've started building back in January

2226
03:22:16,790 --> 03:22:14,720
20th to the outside of the space station

2227
03:22:19,429 --> 03:22:16,800
one of the Maneuvers that they had

2228
03:22:21,469 --> 03:22:19,439
attempted was to use his pliers kind of

2229
03:22:24,410 --> 03:22:21,479
like a crowbar sort of to just kind of

2230
03:22:27,590 --> 03:22:24,420
nudge that rectangle that he's working

2231
03:22:29,750 --> 03:22:27,600
on into place unfortunately it resulted

2232
03:22:32,389 --> 03:22:29,760
in some broken pliers

2233
03:22:34,309 --> 03:22:32,399
it's very critical that our spacewalker

2234
03:22:36,110 --> 03:22:34,319
kawichiwakata does not touch any kind of

2235
03:22:37,910 --> 03:22:36,120
sharp edge so he has been working with

2236
03:22:41,170 --> 03:22:37,920
mission control on how to properly Stow

2237
03:22:44,330 --> 03:22:41,180
that away into safety

2238
03:22:47,929 --> 03:22:44,340

the blind operation okay understand

2239

03:22:50,090 --> 03:22:47,939

koichi I think that's okay no problem if

2240

03:22:52,250 --> 03:22:50,100

you don't have both eyes on but if you

2241

03:22:53,750 --> 03:22:52,260

feel that the Pliers are in the right

2242

03:22:57,550 --> 03:22:53,760

spot

2243

03:23:03,290 --> 03:23:00,650

Duke for you will have you continue that

2244

03:23:08,389 --> 03:23:03,300

slow steady yawing motion

2245

03:23:11,090 --> 03:23:08,399

you may also do a gentle jostle in the

2246

03:23:14,990 --> 03:23:11,100

pitch direction as you're continuing to

2247

03:23:21,830 --> 03:23:16,870

probably

2248

03:23:26,389 --> 03:23:23,750

you heard our ground IVs in a Cartman

2249

03:23:35,030 --> 03:23:26,399

talking to Duke Focus the call sign for

2250

03:23:35,040 --> 03:23:50,160

foreign

2251
03:23:50,170 --> 03:24:06,769
[Music]

2252
03:24:06,779 --> 03:24:13,150
okay

2253
03:24:17,090 --> 03:24:14,809
you know

2254
03:24:21,349 --> 03:24:17,100
can I use the uh

2255
03:24:21,359 --> 03:24:26,030
I think those M1 and three

2256
03:24:26,040 --> 03:24:32,269
stay Mike Luigi

2257
03:24:36,410 --> 03:24:34,309
so you can think of this mid strut that

2258
03:24:38,750 --> 03:24:36,420
they're working on it's a bit of a pole

2259
03:24:41,150 --> 03:24:38,760
shaped item this is Nicole man on one

2260
03:24:43,190 --> 03:24:41,160
side and koichiwakata on the other and

2261
03:24:45,650 --> 03:24:43,200
you are going to start with M1 and M3

2262
03:24:48,290 --> 03:24:45,660
you'll want to be very gentle as you do

2263
03:24:50,870 --> 03:24:48,300

this minimizing any side loads because

2264

03:24:52,670 --> 03:24:50,880

it is liable to pop off again

2265

03:24:55,550 --> 03:24:52,680

you'll be driving M1 and M3

2266

03:24:59,750 --> 03:24:55,560

approximately two turns being extra

2267

03:25:07,250 --> 03:25:01,790

copy that

2268

03:25:07,260 --> 03:25:11,389

copy quiche

2269

03:25:15,590 --> 03:25:13,250

the solution that seemed to do the trick

2270

03:25:17,870 --> 03:25:15,600

as I was explaining this is a a

2271

03:25:20,090 --> 03:25:17,880

cylindrical shaped item with an

2272

03:25:22,130 --> 03:25:20,100

astronaut on either side of it you're

2273

03:25:24,830 --> 03:25:22,140

seeing the view of kuichiwakata now

2274

03:25:26,210 --> 03:25:24,840

working with that silver box that he's

2275

03:25:28,370 --> 03:25:26,220

been trying to lay flush against the

2276

03:25:29,990 --> 03:25:28,380

mass canister Nicole man was on the

2277

03:25:32,210 --> 03:25:30,000

other side and with their teamwork she

2278

03:25:34,849 --> 03:25:32,220

was able to take her side and kind of

2279

03:25:37,849 --> 03:25:34,859

nudge it wiggle it into place from her

2280

03:25:39,469 --> 03:25:37,859

perspective while kuichi laid it flat

2281

03:25:49,309 --> 03:25:39,479

and that was a solution that seemed to

2282

03:25:49,319 --> 03:25:53,450

complete

2283

03:26:07,910 --> 03:25:55,130

M3

2284

03:26:12,349 --> 03:26:09,950

and hey Duke for you a heads up we're

2285

03:26:14,210 --> 03:26:12,359

getting ready for a night pass and I

2286

03:26:16,130 --> 03:26:14,220

know you have your tcv in one but if you

2287

03:26:20,210 --> 03:26:16,140

want to do some wiggling and get warm

2288

03:26:20,220 --> 03:26:23,570

everybody

2289

03:26:29,030 --> 03:26:25,429

I think it's two-thirds I think so I'm

2290

03:26:29,040 --> 03:26:31,910

hey from Duke

2291

03:26:37,670 --> 03:26:34,330

yes

2292

03:26:39,710 --> 03:26:37,680

complete this is great news two turns on

2293

03:26:40,910 --> 03:26:39,720

M1 and M3 we've got lots of happy people

2294

03:26:44,450 --> 03:26:40,920

down here

2295

03:26:47,710 --> 03:26:44,460

okay you'll be getting your PGT now

2296

03:26:50,150 --> 03:26:47,720

setting Alpha One clockwise one

2297

03:26:51,769 --> 03:26:50,160

koichiwakata successfully soft dock the

2298

03:26:54,050 --> 03:26:51,779

mechanism that he's been working on that

2299

03:26:55,610 --> 03:26:54,060

mid strut the thing that you see going

2300

03:26:57,650 --> 03:26:55,620

from the center of your screen all the

2301
03:27:16,250 --> 03:26:57,660
way out to the right side he's now

2302
03:27:16,260 --> 03:27:37,450
ah

2303
03:27:37,460 --> 03:27:41,630
clockwise one set

2304
03:27:46,070 --> 03:27:44,450
copy of one clockwise one

2305
03:27:47,750 --> 03:27:46,080
the device that you see in

2306
03:27:49,130 --> 03:27:47,760
koichiwakata's hand we're looking at his

2307
03:27:53,389 --> 03:27:49,140
point of view now the thing with the

2308
03:27:55,910 --> 03:27:53,399
number five on it that's the PGG PGT or

2309
03:27:58,790 --> 03:27:55,920
the pistol grip tool it's a battery

2310
03:28:01,490 --> 03:27:58,800
powered handheld tool kind of similar to

2311
03:28:23,690 --> 03:28:01,500
to a drill getting those bolts into

2312
03:28:23,700 --> 03:28:27,530
M4

2313
03:28:27,540 --> 03:28:46,670

puppy and standby koichi

2314

03:28:50,510 --> 03:28:48,229

all right kuchi and we'll have you go

2315

03:28:55,010 --> 03:28:50,520

back to M1 and M3

2316

03:28:55,020 --> 03:29:04,910

okay and then an M3 two additional terms

2317

03:29:09,229 --> 03:29:07,250

the numbers that koichiwakata and

2318

03:29:11,929 --> 03:29:09,239

xenocarben are communicating from space

2319

03:29:13,849 --> 03:29:11,939

in here on the ground are the torque and

2320

03:29:21,710 --> 03:29:13,859

speed settings of this pistol grip tool

2321

03:29:38,150 --> 03:29:24,710

two additional stands complete on M1

2322

03:29:38,160 --> 03:29:53,510

traditional terms complete on M3

2323

03:30:01,670 --> 03:29:55,250

and we're coming up on a Handover in

2324

03:30:05,389 --> 03:30:03,830

or in a Handover period here you're

2325

03:30:07,610 --> 03:30:05,399

getting live views of Mission Control

2326

03:30:09,710 --> 03:30:07,620

Houston where teams just work to

2327

03:30:12,410 --> 03:30:09,720

troubleshoot some issues that they were

2328

03:30:14,210 --> 03:30:12,420

having installing the mid strut the last

2329

03:30:16,790 --> 03:30:14,220

piece of the support structure that

2330

03:30:20,630 --> 03:30:16,800

they've been building for two Evas now

2331

03:30:25,429 --> 03:30:22,790

they got the part right into place and

2332

03:30:28,070 --> 03:30:25,439

now kuichiwakata is working on drilling

2333

03:30:29,650 --> 03:30:28,080

them all into place

2334

03:30:32,269 --> 03:30:29,660

even though we worked on a number of

2335

03:31:06,710 --> 03:30:32,279

troubleshooting Solutions here today we

2336

03:31:11,150 --> 03:31:08,750

and we're back with our live views as we

2337

03:31:12,610 --> 03:31:11,160

approach the two hour 30 minute Mark of

2338

03:31:15,290 --> 03:31:12,620

our spacewalk

2339

03:31:18,349 --> 03:31:15,300

complete on M4

2340

03:31:20,090 --> 03:31:18,359

W4 turns on M4 and I may have missed it

2341

03:31:26,210 --> 03:31:20,100

in the Handover did you get two

2342

03:31:31,670 --> 03:31:28,790

that's complete and then I'm two M1 and

2343

03:31:33,469 --> 03:31:31,680

MC two additional guns complete copy

2344

03:31:34,969 --> 03:31:33,479

okay we have four turns on all four of

2345

03:31:36,650 --> 03:31:34,979

those volts

2346

03:31:39,950 --> 03:31:36,660

okay

2347

03:31:41,929 --> 03:31:39,960

Duke for you you can get L8 to Upper

2348

03:31:42,950 --> 03:31:41,939

stretch the midstret for the upper strut

2349

03:31:45,050 --> 03:31:42,960

L8

2350

03:31:49,190 --> 03:31:45,060

and you'll be setting your PGT to Bravo

2351
03:31:49,200 --> 03:31:56,750
foreign

2352
03:32:02,150 --> 03:32:00,050
perfect you'll be driving m28 about six

2353
03:32:06,830 --> 03:32:02,160
and a half to nine turns looking for a

2354
03:32:11,269 --> 03:32:09,469
koichi for you you'll be driving M1 to

2355
03:32:13,250 --> 03:32:11,279
M4 to torque

2356
03:32:15,050 --> 03:32:13,260
an additional three to eight and a half

2357
03:32:16,969 --> 03:32:15,060
turns or so

2358
03:32:22,250 --> 03:32:16,979
this is to torque so you're looking for

2359
03:32:28,190 --> 03:32:25,670
okay uh three two eight turns on all the

2360
03:32:30,530 --> 03:32:28,200
footballs in the this bgd setting the

2361
03:32:30,540 --> 03:32:39,530
PGT settings are alpha 2 clockwise two

2362
03:32:39,540 --> 03:32:43,490
look like two

2363
03:32:48,410 --> 03:32:46,070

these directions again being the speed

2364

03:32:50,510 --> 03:32:48,420

and torque settings of this pistol grip

2365

03:32:52,490 --> 03:32:50,520

tool as well as the direction clockwise

2366

03:32:54,710 --> 03:32:52,500

or counterclockwise in this case it will

2367

03:33:06,950 --> 03:32:54,720

be clockwise

2368

03:33:10,969 --> 03:33:09,410

and then one I got a green light and

2369

03:33:14,450 --> 03:33:10,979

torqued out

2370

03:33:18,290 --> 03:33:14,460

2.8 pounds and uh it's a two and a half

2371

03:33:22,969 --> 03:33:21,110

probably two and a half turns additional

2372

03:33:24,950 --> 03:33:22,979

on M1

2373

03:33:38,630 --> 03:33:24,960

and two foot pounds

2374

03:33:43,729 --> 03:33:41,229

three copies

2375

03:33:47,630 --> 03:33:43,739

okay thanks Luigi

2376

03:33:56,210 --> 03:33:49,790

okay we're good to have you continue

2377

03:33:56,220 --> 03:33:59,870

okay any order

2378

03:33:59,880 --> 03:34:15,170

a from

2379

03:34:21,830 --> 03:34:17,210

M3 you got a green light it talks about

2380

03:34:24,769 --> 03:34:21,840

3.7 turns 3.7 foot pounds three turns

2381

03:34:41,210 --> 03:34:24,779

copy three turns and 3.7 foot pounds on

2382

03:34:46,250 --> 03:34:43,250

well empty I got a green light starts

2383

03:34:48,110 --> 03:34:46,260

out 3.7 pounds and then two and a three

2384

03:34:50,110 --> 03:34:48,120

quarter turns

2385

03:34:53,269 --> 03:34:50,120

probably two and three quarters turns

2386

03:34:58,370 --> 03:34:53,279

3.7 foot pounds on M2 we're checking on

2387

03:34:58,380 --> 03:35:00,790

s

2388

03:35:09,650 --> 03:35:05,330

green light 11.9 on the torque copy nine

2389

03:35:11,809 --> 03:35:09,660

turns 11.9 and green light for you duke

2390

03:35:16,309 --> 03:35:11,819

that's a good bolt squeegee you can

2391

03:35:16,319 --> 03:35:22,070

okay copy that working on M4

2392

03:35:30,830 --> 03:35:24,050

Duke can you verify also that you've got

2393

03:35:30,840 --> 03:35:34,729

goodbye

2394

03:35:34,739 --> 03:35:46,070

great news okay you can install them

2395

03:35:50,210 --> 03:35:47,990

before I get a green light and talk

2396

03:35:55,370 --> 03:35:50,220

about the 3.6

2397

03:35:56,990 --> 03:35:55,380

I found three terms copy 3.6 torque and

2398

03:36:02,990 --> 03:35:57,000

three foot pounds

2399

03:36:07,130 --> 03:36:04,849

and it's so far so good on the

2400

03:36:18,610 --> 03:36:07,140

installation of this mid strut where it

2401

03:36:18,620 --> 03:36:22,429

so I'm fixing that

2402

03:36:22,439 --> 03:36:35,870

copy Dukes okay they're good now

2403

03:36:42,530 --> 03:36:38,570

everybody yeah verified as grounding

2404

03:36:45,410 --> 03:36:42,540

victim is installed firmly on L1

2405

03:36:50,750 --> 03:36:48,469

copy that Duke koichi you can release

2406

03:36:56,389 --> 03:36:50,760

ev1's rep from the mid strut handrail

2407

03:37:00,530 --> 03:36:58,010

copy that

2408

03:37:02,929 --> 03:37:00,540

before that

2409

03:37:06,120 --> 03:37:02,939

unlock the rest

2410

03:37:08,690 --> 03:37:06,130

yeah that's a good plan

2411

03:37:11,210 --> 03:37:08,700

[Applause]

2412

03:37:16,510 --> 03:37:11,220

okay can I give it to you now yes sir

2413

03:37:16,520 --> 03:37:31,370

sorry maybe he was locked again

2414

03:37:31,380 --> 03:37:38,210

but

2415

03:37:43,610 --> 03:37:41,570

okay what's better for me

2416

03:37:45,410 --> 03:37:43,620

next for you Gucci you can release the

2417

03:37:46,429 --> 03:37:45,420

adjustable from the side pad tether

2418

03:37:48,710 --> 03:37:46,439

point and sew it on your mini

2419

03:37:55,130 --> 03:37:48,720

workstation and then we'll be doing the

2420

03:38:10,910 --> 03:37:57,710

do once you're good we'll take a glove

2421

03:38:15,530 --> 03:38:13,429

so if you remember earlier during our

2422

03:38:17,389 --> 03:38:15,540

space walk our spacewalkers had worked

2423

03:38:19,370 --> 03:38:17,399

to remove some of the mli the

2424

03:38:22,330 --> 03:38:19,380

multi-layer insulation it's that white

2425

03:38:25,429 --> 03:38:22,340

covering that you see there and now

2426

03:38:36,010 --> 03:38:25,439

koichiwakata is working to install a

2427

03:38:40,849 --> 03:38:38,269

meanwhile here on the ground they've

2428

03:38:43,969 --> 03:38:40,859

asked our spacewalker Nicole Mann to

2429

03:38:45,290 --> 03:38:43,979

perform a happy Gauntlet check

2430

03:38:47,870 --> 03:38:45,300

being

2431

03:38:50,389 --> 03:38:47,880

the pads that they wear in their helmets

2432

03:38:52,429 --> 03:38:50,399

to avoid excess moisture she's going to

2433

03:38:54,650 --> 03:38:52,439

make sure that that's good and dry as

2434

03:38:56,210 --> 03:38:54,660

well as take a look at her gloves check

2435

03:38:58,910 --> 03:38:56,220

it out make sure that there's no notable

2436

03:39:01,790 --> 03:38:58,920

damage

2437

03:39:03,710 --> 03:39:01,800

okay everyone's life is good cop is dry

2438

03:39:09,530 --> 03:39:03,720

some of us are down

2439

03:39:14,870 --> 03:39:12,950

and Tina I just double is removed from

2440

03:39:16,250 --> 03:39:14,880

the side pad installed on my Amino

2441

03:39:18,050 --> 03:39:16,260

workspace

2442

03:39:27,590 --> 03:39:18,060

copy kuchi will take a glove half and

2443

03:39:31,849 --> 03:39:29,990

the happiest dry and complex are in

2444

03:40:01,429 --> 03:39:31,859

place

2445

03:40:15,229 --> 03:40:05,210

play ahead of the additional one at that

2446

03:40:18,830 --> 03:40:17,510

now that the mid strut installation is

2447

03:40:21,110 --> 03:40:18,840

complete they're going to move on to

2448

03:40:23,030 --> 03:40:21,120

tightening the collar bolts at the

2449

03:40:25,429 --> 03:40:23,040

midpoint of the mid strut they're driven

2450

03:40:27,590 --> 03:40:25,439

to rigidize the hole structure and when

2451

03:40:29,809 --> 03:40:27,600

the collar bolts are driven they clamp

2452

03:40:31,429 --> 03:40:29,819

down on this locking feature

2453

03:41:01,550 --> 03:40:31,439

and that has to be done before neighbor

2454

03:41:06,710 --> 03:41:04,550

all right koichi we weren't tracking any

2455

03:41:13,190 --> 03:41:06,720

wire tie removal but we see you in a

2456

03:41:13,200 --> 03:41:18,530

okay yeah

2457

03:41:18,540 --> 03:41:54,110

okay

2458

03:41:59,630 --> 03:41:57,170

now I'm just tidying it up because of

2459

03:42:02,570 --> 03:41:59,640

the tools that you need just for the

2460

03:42:06,050 --> 03:42:02,580

fact that and putting them back in the

2461

03:42:07,610 --> 03:42:06,060

GTA Kathy we see that in your hacker I

2462

03:42:08,990 --> 03:42:07,620

think that's a great plan once you're

2463

03:42:10,790 --> 03:42:09,000

done with that we'll have you work on

2464

03:42:14,690 --> 03:42:10,800

the mli on your end

2465

03:43:05,269 --> 03:42:14,700

and then we'll be working on the collar

2466

03:43:05,279 --> 03:43:11,150

podcasts

2467

03:43:15,290 --> 03:43:13,610

we're on an orbital night time here on

2468

03:43:17,990 --> 03:43:15,300

the international space stations where I

2469

03:43:19,910 --> 03:43:18,000

get kind of a dark look with the these

2470

03:43:22,190 --> 03:43:19,920

headlamps that they've got on there as

2471

03:43:24,110 --> 03:43:22,200

they continue their tasks to kind of

2472

03:43:27,229 --> 03:43:24,120

recap what's been done so far they began

2473

03:43:29,690 --> 03:43:27,239

their spacewalk at 6 45 a.m Central

2474

03:43:31,870 --> 03:43:29,700

that's cool whose point of view you're

2475

03:43:34,910 --> 03:43:31,880

seeing on the right and Nicole man

2476

03:43:37,849 --> 03:43:34,920

callsigned Duke on the left side After

2477

03:43:40,670 --> 03:43:37,859

exiting the hatch they went over to

2478

03:43:43,490 --> 03:43:40,680

their work sites and began work on the

2479

03:43:45,889 --> 03:43:43,500

lower strut part of the support

2480

03:43:49,070 --> 03:43:45,899

structure that could one day hold on

2481

03:43:51,830 --> 03:43:49,080

irosa a rollout solar array this

2482

03:43:54,769 --> 03:43:51,840

structure is needed to be built before

2483

03:43:56,929 --> 03:43:54,779

these solar arrays can be installed

2484

03:43:59,150 --> 03:43:56,939

they began work on it back in January

2485

03:44:02,450 --> 03:43:59,160

and are finishing up so they began their

2486

03:44:03,950 --> 03:44:02,460

work on the left strut but one of the

2487

03:44:06,050 --> 03:44:03,960

components that they needed to look at

2488

03:44:07,670 --> 03:44:06,060

and then they completely installed the

2489

03:44:10,309 --> 03:44:07,680

mid strut they did a couple of

2490

03:44:11,750 --> 03:44:10,319

troubleshooting items to get them into

2491

03:44:13,490 --> 03:44:11,760

the proper configuration that they

2492

03:44:15,950 --> 03:44:13,500

needed tried a couple of things and

2493

03:44:17,750 --> 03:44:15,960

finally got success and now they're

2494

03:44:19,729 --> 03:44:17,760

tightening the collar bolts all around

2495

03:44:22,070 --> 03:44:19,739

the structure rigidizing the whole thing

2496

03:45:19,750 --> 03:44:22,080

so it can be load bearing essentially

2497

03:45:19,760 --> 03:45:25,849

copy three on your tcv

2498

03:45:32,150 --> 03:45:27,229

now

2499

03:45:35,630 --> 03:45:32,160

okay Tina the tools in the TDA bag

2500

03:45:39,650 --> 03:45:35,640

uh I return them in the GBA bags and

2501
03:45:46,790 --> 03:45:39,660
it's still attached to the long handrail

2502
03:45:46,800 --> 03:45:52,849
Queen around that Bolt

2503
03:45:52,859 --> 03:45:57,530
okay

2504
03:45:57,540 --> 03:46:10,190
it's uh over the vault

2505
03:46:10,200 --> 03:46:17,750
and secured with the integrated wire tie

2506
03:46:17,760 --> 03:46:47,510
happy Gucci that looks good to us

2507
03:46:51,710 --> 03:46:49,849
discoverable

2508
03:46:54,229 --> 03:46:51,720
for easy two

2509
03:46:55,969 --> 03:46:54,239
that'll be the next steps exactly okay

2510
03:46:58,910 --> 03:46:55,979
we'll have you adjust your body position

2511
03:47:00,950 --> 03:46:58,920
to reach the mid strut collar

2512
03:47:03,410 --> 03:47:00,960
and while you're brt to the mid strut

2513
03:47:05,570 --> 03:47:03,420

handrail remember to avoid any torsional

2514

03:47:07,190 --> 03:47:05,580

loads into the strut

2515

03:47:24,790 --> 03:47:07,200

and we'll have PGT settings when you're

2516

03:48:10,010 --> 03:47:26,570

kawichiwakata now getting into the

2517

03:48:10,020 --> 03:48:13,250

foreign

2518

03:48:13,260 --> 03:48:25,490

ass

2519

03:48:31,330 --> 03:48:28,370

okay ready for the PCT settings for m29

2520

03:48:43,429 --> 03:48:31,340

and m30 okay Gucci that's Bravo 7

2521

03:48:50,389 --> 03:48:47,330

level seven said clockwise to set

2522

03:48:53,630 --> 03:48:50,399

happy Gucci you'll be driving m30 and

2523

03:49:00,110 --> 03:48:53,640

m29 those are the color bolts to torque

2524

03:49:00,120 --> 03:49:07,010

okay

2525

03:49:11,269 --> 03:49:09,070

and the grounds just communicated up to

2526

03:49:13,309 --> 03:49:11,279

kuichiwakata what his pistol grip tool

2527

03:49:15,050 --> 03:49:13,319

settings should be the torque and speed

2528

03:49:24,469 --> 03:49:15,060

that he needs to drive these collar

2529

03:49:28,309 --> 03:49:26,570

you can get a good view of what we were

2530

03:49:30,110 --> 03:49:28,319

talking about here on your screen now if

2531

03:49:31,429 --> 03:49:30,120

you want to take a look kind kind of in

2532

03:49:34,610 --> 03:49:31,439

the middle of the screen you'll see this

2533

03:49:38,510 --> 03:49:34,620

gray cylindrical shape the one closest

2534

03:49:40,910 --> 03:49:38,520

to the view is NASA astronaut Nicole man

2535

03:49:43,090 --> 03:49:40,920

holding everything steady right in the

2536

03:49:45,110 --> 03:49:43,100

middle we have our astronaut

2537

03:49:47,090 --> 03:49:45,120

konichiwakata he's working in the middle

2538

03:49:49,490 --> 03:49:47,100

point of this mid strut that's where

2539

03:49:51,229 --> 03:49:49,500

these collar bolts are

2540

03:49:53,990 --> 03:49:51,239

he needs to drive these in order to

2541

03:49:56,450 --> 03:49:54,000

rigidize the whole structure so that one

2542

03:50:13,429 --> 03:49:56,460

day these this structure can hold solar

2543

03:50:17,570 --> 03:50:15,710

this mod kit that he's working on

2544

03:50:19,130 --> 03:50:17,580

launched with Northrop grumman's 18th

2545

03:50:21,410 --> 03:50:19,140

Commercial resupply Services Mission

2546

03:50:22,969 --> 03:50:21,420

delivered by the cygnus cargo spacecraft

2547

03:50:25,309 --> 03:50:22,979

back in November

2548

03:50:27,229 --> 03:50:25,319

and the irosis that will be attached to

2549

03:50:30,110 --> 03:50:27,239

this mounting bracket will launch in a

2550

03:50:31,849 --> 03:50:30,120

SpaceX cargo Dragon cargo spacecraft

2551
03:50:36,849 --> 03:50:31,859
during the company's 28th Commercial

2552
03:50:45,490 --> 03:50:40,370
on 29 I got a green lighted poked out

2553
03:50:45,500 --> 03:50:57,290
and a half turns 25.3 on m29

2554
03:50:57,300 --> 03:50:59,750
be

2555
03:50:59,760 --> 03:51:09,590
stand by kuichi

2556
03:51:09,600 --> 03:51:49,429
okay Gucci yes you can continue with m30

2557
03:51:54,170 --> 03:51:51,170
now

2558
03:51:58,309 --> 03:51:54,180
okay I'm sorry got a green light and top

2559
03:52:01,670 --> 03:51:58,319
down 25.6 shut down one half turns

2560
03:52:10,969 --> 03:52:01,680
copy four and a half turns 25.6 on m30

2561
03:52:18,349 --> 03:52:14,809
okay koichi you can drive m29 to torque

2562
03:52:20,510 --> 03:52:18,359
about four to six turns until the MTL

2563
03:52:25,910 --> 03:52:20,520

pops over you'll be setting your PGT to

2564

03:52:32,809 --> 03:52:29,870

okay so uh find your records and uh two

2565

03:52:56,870 --> 03:52:32,819

Tops on the m29

2566

03:53:01,610 --> 03:52:58,610

just as a reminder since we have the

2567

03:53:04,070 --> 03:53:01,620

wobble socket try to keep the PGT as in

2568

03:53:09,110 --> 03:53:04,080

line as possible and minimize the wobble

2569

03:53:09,120 --> 03:53:19,250

copy that

2570

03:53:29,510 --> 03:53:22,190

and Duke are you all set with the cable

2571

03:53:34,790 --> 03:53:31,790

got it uh I got squishies I'm still

2572

03:53:36,290 --> 03:53:34,800

undone and I've got it uh routed for the

2573

03:53:44,870 --> 03:53:36,300

lower

2574

03:53:44,880 --> 03:53:56,290

foreign

2575

03:54:01,190 --> 03:53:58,750

continues on this mid strut as

2576

03:54:02,990 --> 03:54:01,200

koichiwakata on your screen Now is

2577

03:54:04,729 --> 03:54:03,000

working towards the middle of the mid

2578

03:54:06,950 --> 03:54:04,739

strut tightening these collars to

2579

03:54:09,229 --> 03:54:06,960

rigidize the structure

2580

03:54:10,969 --> 03:54:09,239

the ground just asked Nicole man if

2581

03:54:13,070 --> 03:54:10,979

she's ready to move on to her next step

2582

03:54:14,630 --> 03:54:13,080

she's not quite done here over at the

2583

03:54:17,210 --> 03:54:14,640

mid-stretch she still has some work to

2584

03:54:20,570 --> 03:54:17,220

do helping kuichi out with the

2585

03:54:22,670 --> 03:54:20,580

insulation it needs to go back on before

2586

03:54:24,710 --> 03:54:22,680

they're ready to step away from it but

2587

03:54:26,330 --> 03:54:24,720

after this task she'll move on to Route

2588

03:54:30,950 --> 03:54:26,340

some cables

2589

03:54:34,670 --> 03:54:32,450

you know you think it would help if I

2590

03:54:38,809 --> 03:54:34,680

hold your foot

2591

03:54:56,870 --> 03:54:40,510

I think this is

2592

03:55:02,330 --> 03:54:59,769

let me reorient my body

2593

03:55:10,070 --> 03:55:02,340

towards there with my feet towards you

2594

03:55:10,080 --> 03:55:21,670

we like that suggestion koichi

2595

03:55:27,229 --> 03:55:24,469

there's no way my

2596

03:55:38,090 --> 03:55:27,239

okay yeah that's good

2597

03:55:38,100 --> 03:55:44,030

okay

2598

03:55:44,040 --> 03:55:54,710

I need to cut down a little bit more

2599

03:56:01,490 --> 03:55:57,670

that's good

2600

03:56:04,370 --> 03:56:01,500

okay all right that's okay okay I'll try

2601
03:56:06,729 --> 03:56:04,380
that which you can also switch to the

2602
03:56:10,790 --> 03:56:06,739
two inch rigid

2603
03:56:16,969 --> 03:56:13,130
I'm interested

2604
03:56:22,189 --> 03:56:18,590
extender if you want to get that one

2605
03:56:33,550 --> 03:56:23,590
okay

2606
03:56:49,610 --> 03:56:35,630
just so I can grab a hold of that

2607
03:57:13,030 --> 03:57:06,370
okay

2608
03:57:19,189 --> 03:57:15,349
how many additional turns were you able

2609
03:57:24,650 --> 03:57:22,429
I think it's about the

2610
03:57:27,410 --> 03:57:24,660
about at one time

2611
03:57:30,950 --> 03:57:27,420
roughly one additional turn on m29 Okay

2612
03:57:30,960 --> 03:57:35,269
[Applause]

2613
03:57:35,279 --> 03:57:40,910

7 clockwise

2614

03:57:47,870 --> 03:57:43,250

and this will still be in manual ratchet

2615

03:57:53,630 --> 03:57:50,809

when you're hearing words like m29 m30

2616

03:57:55,610 --> 03:57:53,640

these are these refer to the bolts

2617

03:57:58,370 --> 03:57:55,620

exactly that koichiwakata is working on

2618

03:58:00,830 --> 03:57:58,380

tightening and the numbers have to do

2619

03:58:02,630 --> 03:58:00,840

with his tool settings on just exactly

2620

03:58:05,809 --> 03:58:02,640

how much he's tightening it correct

2621

03:58:08,030 --> 03:58:05,819

looking for two parts okay

2622

03:58:12,429 --> 03:58:08,040

okay

2623

03:58:16,610 --> 03:58:15,010

pop up

2624

03:58:21,050 --> 03:58:16,620

from

2625

03:58:24,410 --> 03:58:21,060

m30 it's probably about half down

2626

03:58:28,250 --> 03:58:24,420

okay too Pops in about

2627

03:58:30,530 --> 03:58:28,260

um and 30. is awesome happy Gucci

2628

03:58:35,110 --> 03:58:30,540

you can set your PGT back to motor and

2629

03:58:40,729 --> 03:58:38,389

thank you duke for your help all right I

2630

03:58:45,229 --> 03:58:40,739

appreciate it

2631

03:58:45,239 --> 03:58:59,530

Duke once could we cheat his PGT Stone

2632

03:59:04,070 --> 03:59:01,510

yeah

2633

03:59:11,269 --> 03:59:04,080

you see how your Local's gonna go across

2634

03:59:17,929 --> 03:59:15,469

my uh comfy that night together but it's

2635

03:59:19,670 --> 03:59:17,939

still my best friend each other

2636

03:59:22,010 --> 03:59:19,680

yeah like right now but once you move

2637

03:59:26,269 --> 03:59:24,830

I don't even know my right side

2638

03:59:35,349 --> 03:59:26,279

so

2639

03:59:41,090 --> 03:59:39,349

okay great perfect yeah thank you but

2640

03:59:42,469 --> 03:59:41,100

your your logo coming from your right

2641

03:59:46,610 --> 03:59:42,479

way Center

2642

03:59:48,769 --> 03:59:46,620

it's now wrapped inside of your

2643

03:59:49,790 --> 03:59:48,779

arm so you just need to rotate to your

2644

03:59:52,550 --> 03:59:49,800

left

2645

04:00:01,670 --> 03:59:52,560

get your logo out of that way okay just

2646

04:00:01,680 --> 04:00:12,590

so local in this one right yeah

2647

04:00:12,600 --> 04:00:19,849

so you're saying that you did

2648

04:00:26,450 --> 04:00:23,410

where is this going through he's just uh

2649

04:00:27,830 --> 04:00:26,460

when you close your

2650

04:00:40,969 --> 04:00:27,840

your team

2651
04:00:45,650 --> 04:00:43,610
we're now about three hours into our

2652
04:00:47,870 --> 04:00:45,660
space walk today moving right down the

2653
04:00:50,689 --> 04:00:47,880
checklist right out of the gate they

2654
04:00:52,250 --> 04:00:50,699
moved to work on the lower strut of the

2655
04:00:54,410 --> 04:00:52,260
structure that they're building and

2656
04:00:56,450 --> 04:00:54,420
completely installed the mid strut after

2657
04:00:59,330 --> 04:00:56,460
a lot of troubleshooting back and forth

2658
04:01:01,309 --> 04:00:59,340
here in mission control and up outside

2659
04:01:03,469 --> 04:01:01,319
the International Space Station they

2660
04:01:06,590 --> 04:01:03,479
were able to successfully install that

2661
04:01:09,290 --> 04:01:06,600
and they moved on to rigidize the

2662
04:01:10,969 --> 04:01:09,300
structure or tighten the collar bolts in

2663
04:01:12,590 --> 04:01:10,979

the middle of the mid strut that they

2664

04:01:14,210 --> 04:01:12,600

just built so they're still at it there

2665

04:01:20,349 --> 04:01:14,220

you can see it on the right side of your

2666

04:01:24,469 --> 04:01:23,030

next up on their checklist that's what

2667

04:01:27,110 --> 04:01:24,479

they're working on now they're working

2668

04:01:28,670 --> 04:01:27,120

on the multi-layer insulation it was

2669

04:01:30,590 --> 04:01:28,680

peeled back for installation and now

2670

04:01:32,389 --> 04:01:30,600

they just need to put it back this

2671

04:01:34,670 --> 04:01:32,399

instantly this installation helps

2672

04:01:36,530 --> 04:01:34,680

protect it from the vacuo space

2673

04:01:37,790 --> 04:01:36,540

we're in a brief Handover period now so

2674

04:01:46,130 --> 04:01:37,800

we're getting live views of Mission

2675

04:01:51,830 --> 04:01:49,250

no okay okay a firm and install that pip

2676
04:01:55,790 --> 04:01:51,840
pin on the telescoping side of the strut

2677
04:01:55,800 --> 04:01:59,229
okay

2678
04:01:59,239 --> 04:02:04,450
I don't see it baby

2679
04:02:13,670 --> 04:02:08,269
I just come from later and look up

2680
04:02:17,870 --> 04:02:16,429
it's on the other side

2681
04:02:23,330 --> 04:02:17,880
we can't over here we'll be back with

2682
04:02:27,889 --> 04:02:25,670
we expect to get our live views back

2683
04:02:30,349 --> 04:02:27,899
shortly meanwhile our space Walkers

2684
04:02:32,630 --> 04:02:30,359
continue working diligently on getting

2685
04:02:47,570 --> 04:02:32,640
the insulation back over the mid strut

2686
04:02:52,370 --> 04:02:50,330
next up in their tasks Nicole Mann is

2687
04:02:53,929 --> 04:02:52,380
going to Rick it's going to Route some

2688
04:02:56,090 --> 04:02:53,939

cables

2689

04:02:58,870 --> 04:02:56,100

um she's going to send them on a path

2690

04:03:01,729 --> 04:02:58,880

making her way around the space station

2691

04:03:03,290 --> 04:03:01,739

not necessarily installing the cables

2692

04:03:05,090 --> 04:03:03,300

but kind of setting them up for success

2693

04:03:07,969 --> 04:03:05,100

for a future spacewalk and I'm gonna

2694

04:03:11,750 --> 04:03:07,979

wrap around here on the color vault back

2695

04:03:16,490 --> 04:03:13,309

and Gucci were you able to get that

2696

04:03:18,469 --> 04:03:16,500

pipin installed right here I got the MRI

2697

04:03:21,450 --> 04:03:18,479

now system is being sold and that we

2698

04:03:23,929 --> 04:03:21,460

were working on the mli ers

2699

04:03:26,750 --> 04:03:23,939

[Music]

2700

04:03:28,309 --> 04:03:26,760

perfect that sounds great you'll be

2701
04:03:30,170 --> 04:03:28,319
fully closing it around the telescoping

2702
04:03:32,330 --> 04:03:30,180
end of the strut

2703
04:03:38,809 --> 04:03:32,340
and then installing the short wire ties

2704
04:03:43,550 --> 04:03:41,570
Ichi for you you'll translate to the

2705
04:03:46,370 --> 04:03:43,560
right mid strip

2706
04:03:50,630 --> 04:03:46,380
going outboard around the mass canister

2707
04:03:53,990 --> 04:03:52,790
okay copy that faster after I cover the

2708
04:03:58,429 --> 04:03:54,000
uh

2709
04:04:03,290 --> 04:04:00,729
oh can you work on that yeah

2710
04:04:05,330 --> 04:04:03,300
I think I'm gonna get that go through

2711
04:04:07,610 --> 04:04:05,340
this wire size but I'm allowed to

2712
04:04:15,410 --> 04:04:09,290
to be able to get to that mli a little

2713
04:04:15,420 --> 04:04:18,590

hey from Duke

2714

04:04:29,170 --> 04:04:20,929

okay so I believe I'm gonna pop out and

2715

04:04:33,830 --> 04:04:31,130

koichiwakata has been working on the

2716

04:04:35,630 --> 04:04:33,840

left mid strut collar work is complete

2717

04:04:38,090 --> 04:04:35,640

on that and now he's making his way over

2718

04:04:42,290 --> 04:04:38,100

to the right mid strut to do similar

2719

04:04:42,300 --> 04:04:44,950

well

2720

04:04:49,849 --> 04:04:47,050

you better go outside

2721

04:04:52,429 --> 04:04:49,859

right I'm gonna go around here are you

2722

04:04:55,490 --> 04:04:52,439

going outside the triangle I am going to

2723

04:04:58,670 --> 04:04:55,500

stay in the on the other side of the BGA

2724

04:04:58,680 --> 04:05:02,750

I think I have to go around

2725

04:05:05,630 --> 04:05:04,070

we'll take care of your safety seven

2726
04:05:13,610 --> 04:05:05,640
once you go down and around right right

2727
04:05:13,620 --> 04:05:38,150
okay I'm going wrong

2728
04:05:42,290 --> 04:05:40,550
can you confirm that I can egress the

2729
04:06:41,990 --> 04:05:42,300
apfr

2730
04:06:48,349 --> 04:06:44,809
and there we have NASA astronaut Nicole

2731
04:06:51,950 --> 04:06:48,359
Mann in view nicely lit as we enter an

2732
04:06:56,450 --> 04:06:54,530
you can see by looking at her feet that

2733
04:06:58,070 --> 04:06:56,460
she's ingresssed or gotten off of her

2734
04:06:59,710 --> 04:06:58,080
portable foot restraint that was keeping

2735
04:07:02,030 --> 04:06:59,720
her in place as she assisted

2736
04:07:04,309 --> 04:07:02,040
koichiwakata when he was working on the

2737
04:07:06,469 --> 04:07:04,319
installation of the mid strut

2738
04:07:08,809 --> 04:07:06,479

she is now moving on to other tasks

2739

04:07:11,630 --> 04:07:08,819

she's making her way over to the cable

2740

04:07:13,370 --> 04:07:11,640

bag it was originally taken out of the

2741

04:07:16,490 --> 04:07:13,380

airlock and stowed temporarily until

2742

04:07:18,170 --> 04:07:16,500

they needed it and that time is now

2743

04:07:20,929 --> 04:07:18,180

so she's going to work on some cable

2744

04:07:23,510 --> 04:07:20,939

routing while koichiwakata works on the

2745

04:07:25,250 --> 04:07:23,520

right side of the mid-struck collar he'd

2746

04:07:50,570 --> 04:07:25,260

already worked to tighten and rigidize

2747

04:07:50,580 --> 04:09:22,130

bye

2748

04:09:22,140 --> 04:09:40,189

ah

2749

04:09:43,870 --> 04:09:41,700

hello dude

2750

04:09:47,450 --> 04:09:43,880

[Music]

2751

04:09:54,650 --> 04:09:47,460

all right I'm just holding on to

2752

04:09:59,269 --> 04:09:56,870

we're with you guys we're analyzing some

2753

04:10:10,429 --> 04:09:59,279

edar data for you kuichi we'll have you

2754

04:10:15,170 --> 04:10:12,889

koichi can we get a glove inspection a

2755

04:10:16,490 --> 04:10:15,180

very thorough glove inspection just make

2756

04:10:24,889 --> 04:10:16,500

sure that there's no damage to your

2757

04:10:32,030 --> 04:10:28,910

yeah well that's uh good looks good to

2758

04:10:35,929 --> 04:10:34,250

okay coffee let's have you look in

2759

04:10:38,150 --> 04:10:35,939

between all of your fingers just a

2760

04:10:40,250 --> 04:10:38,160

really thorough inspection so kind of

2761

04:10:45,830 --> 04:10:40,260

spread the fingers apart and really get

2762

04:10:45,840 --> 04:10:54,229

hey fingers

2763

04:11:09,710 --> 04:11:02,990

uh

2764

04:11:16,189 --> 04:11:12,290

a TV

2765

04:11:16,199 --> 04:11:30,370

coffee Gucci

2766

04:11:35,630 --> 04:11:32,630

unfortunately that safety feather goes

2767

04:11:35,640 --> 04:11:40,849

but I need to get to the last canister

2768

04:11:40,859 --> 04:11:46,250

and uh

2769

04:11:46,260 --> 04:11:50,450

you can go over it right

2770

04:11:53,929 --> 04:11:52,610

no because it's kind of coming up so I'm

2771

04:11:56,929 --> 04:11:53,939

going to look and see maybe I can come

2772

04:12:01,750 --> 04:11:56,939

outboard and then come around

2773

04:12:09,250 --> 04:12:04,070

I'll be able to translate so that might

2774

04:12:09,260 --> 04:12:19,610

I'm done with a

2775

04:12:22,490 --> 04:12:21,170

yeah guys we're still looking at some

2776

04:12:24,050 --> 04:12:22,500

suit data

2777

04:12:25,910 --> 04:12:24,060

tracking your call about the safety

2778

04:12:29,150 --> 04:12:25,920

tether Duke are you able to add a fair

2779

04:12:29,160 --> 04:12:34,309

yeah I did a four months here um

2780

04:12:34,319 --> 04:12:43,189

two two three five uh

2781

04:12:48,110 --> 04:12:45,889

crappy Duke we don't have video right

2782

04:12:51,469 --> 04:12:48,120

now so we're uh listening to your words

2783

04:12:51,479 --> 04:12:58,370

okay

2784

04:13:03,290 --> 04:13:00,769

we're in a brief loss of signal we've

2785

04:13:05,210 --> 04:13:03,300

temporarily lost our video capabilities

2786

04:13:07,450 --> 04:13:05,220

but we expect to have them back very

2787

04:13:11,210 --> 04:13:07,460

soon uh shortly before we lost video

2788

04:13:13,309 --> 04:13:11,220

koichiwakada was performing a a glove

2789

04:13:15,710 --> 04:13:13,319

check looking really thoroughly between

2790

04:13:28,309 --> 04:13:15,720

his fingers to see if he could see any

2791

04:13:32,150 --> 04:13:30,410

koichi for you we've been looking at the

2792

04:13:34,130 --> 04:13:32,160

data we're going to keep analyzing it

2793

04:13:37,189 --> 04:13:34,140

for now we're good to have you continue

2794

04:13:42,590 --> 04:13:39,050

and we'll be keeping an eye on the data

2795

04:13:46,130 --> 04:13:42,600

see if we find any additional spikes in

2796

04:13:46,140 --> 04:13:51,530

okay

2797

04:13:56,210 --> 04:13:54,229

the color balls on the right strap into

2798

04:13:58,670 --> 04:13:56,220

strap is that right hey firm yep you'll

2799

04:14:00,530 --> 04:13:58,680

be opening the mli on the right midstret

2800

04:14:02,929 --> 04:14:00,540

to reveal the collar bolts

2801
04:14:05,689 --> 04:14:02,939
and I'll have PGT settings for you when

2802
04:14:05,699 --> 04:14:12,229
okay that

2803
04:14:17,030 --> 04:14:14,510
and then Duke for you

2804
04:14:18,769 --> 04:14:17,040
let us know if we can help you with any

2805
04:14:20,090 --> 04:14:18,779
Fair leading suggestions for the

2806
04:14:24,250 --> 04:14:20,100
handrail or anything like that we'll

2807
04:14:30,229 --> 04:14:27,710
two one oh eight I think that's going to

2808
04:14:43,130 --> 04:14:30,239
work here

2809
04:14:46,610 --> 04:14:44,809
and pretty sure I know the answer but

2810
04:15:25,429 --> 04:14:46,620
just to verify that's koichi's safety

2811
04:15:30,590 --> 04:15:28,250
okay D9 ready for PGT setting for color

2812
04:15:32,870 --> 04:15:30,600
balls on the right

2813
04:15:46,550 --> 04:15:32,880

okay similar to before we'll be doing

2814

04:15:46,560 --> 04:15:50,570

how many turns

2815

04:15:57,050 --> 04:15:53,510

this will be about four to six turns on

2816

04:15:57,060 --> 04:16:14,090

.

2817

04:16:19,969 --> 04:16:17,450

oh thank God

2818

04:16:22,189 --> 04:16:19,979

I think I'm getting myself in a bad spot

2819

04:16:28,010 --> 04:16:22,199

here being I'm gonna back out

2820

04:16:31,510 --> 04:16:30,410

a few minutes ago koichi wakada was

2821

04:16:35,090 --> 04:16:31,520

working

2822

04:16:37,130 --> 04:16:35,100

on the right mid strut collar part of

2823

04:16:40,370 --> 04:16:37,140

his task for the day where he noticed a

2824

04:16:42,830 --> 04:16:40,380

brief spike in his O2 data he relayed

2825

04:16:45,830 --> 04:16:42,840

this information to the ground and we

2826
04:16:49,150 --> 04:16:45,840
paused all activity as ground teams

2827
04:16:53,570 --> 04:16:49,160
investigated what the cause could be

2828
04:16:56,290 --> 04:16:53,580
he did a thorough glove check and his

2829
04:16:58,849 --> 04:16:56,300
levels had gone down right away

2830
04:17:01,610 --> 04:16:58,859
so during this pause and after some

2831
04:17:03,469 --> 04:17:01,620
evaluation our team decided that now

2832
04:17:05,570 --> 04:17:03,479
that we are back at normal levels and it

2833
04:17:07,670 --> 04:17:05,580
was a brief Spike and the glove check

2834
04:17:09,110 --> 04:17:07,680
was good we're gonna continue on but

2835
04:17:13,910 --> 04:17:09,120
teams are going to continue to monitor

2836
04:17:13,920 --> 04:18:18,950
stand by Duke

2837
04:18:22,969 --> 04:18:20,630
okay guys back with you after quick

2838
04:18:24,950 --> 04:18:22,979

Handover and Duke a firm you can

2839

04:18:37,490 --> 04:18:24,960

translate in order to do the safety

2840

04:18:43,910 --> 04:18:40,429

well today um did I use that handle on

2841

04:18:49,010 --> 04:18:43,920

the midstret hey from duke or do I need

2842

04:18:49,020 --> 04:19:01,010

okay yeah foreign

2843

04:19:05,450 --> 04:19:04,189

copy four and a half turns 25.0 on the

2844

04:19:09,590 --> 04:19:05,460

torque

2845

04:19:22,610 --> 04:19:12,110

you'll be setting your PGT to manual

2846

04:19:26,990 --> 04:19:24,170

clockwise

2847

04:19:29,750 --> 04:19:27,000

perfect and now you'll be driving M25

2848

04:19:33,349 --> 04:19:29,760

and M26 until you get two MTL pops just

2849

04:19:36,229 --> 04:19:34,510

coffee

2850

04:19:38,030 --> 04:19:36,239

kawichiwakata now finishing up

2851
04:19:40,910 --> 04:19:38,040
tightening the collar on the right mid

2852
04:19:46,309 --> 04:19:43,490
you can see him at the very top of your

2853
04:19:48,530 --> 04:19:46,319
screen wall towards the bottom NASA

2854
04:20:39,710 --> 04:19:48,540
astronaut Nicole man is working on some

2855
04:20:39,720 --> 04:21:12,769
ah

2856
04:21:57,590 --> 04:21:14,809
pass

2857
04:21:57,600 --> 04:22:04,389
foreign

2858
04:22:09,410 --> 04:22:07,309
for a moment if you can hit the power

2859
04:22:11,630 --> 04:22:09,420
button and turn it back on that would be

2860
04:22:45,110 --> 04:22:11,640
helpful

2861
04:22:49,849 --> 04:22:46,910
okay I got a good green light for the

2862
04:22:56,210 --> 04:22:52,130
copy Duke it'll take us a minute to get

2863
04:23:24,469 --> 04:22:58,910

we'll get on my first Wi-Fi here

2864

04:23:24,479 --> 04:23:34,150

yes

2865

04:23:39,229 --> 04:23:36,769

we've momentarily lost heck of views

2866

04:23:40,969 --> 04:23:39,239

from Nicole Mann this is the point of

2867

04:23:43,010 --> 04:23:40,979

view cameras that you've been seeing in

2868

04:23:45,229 --> 04:23:43,020

our coverage from time to time she did a

2869

04:23:46,610 --> 04:23:45,239

simple power cycle to get those back on

2870

04:24:51,229 --> 04:23:46,620

and we're going to see if the solution

2871

04:24:55,130 --> 04:24:53,750

hey can we just watch your feet on the

2872

04:24:56,570 --> 04:24:55,140

solar array there

2873

04:24:58,550 --> 04:24:56,580

I want to get you in a good body

2874

04:25:00,469 --> 04:24:58,560

position so that your feet aren't

2875

04:25:02,090 --> 04:25:00,479

close to contacting

2876

04:25:28,130 --> 04:25:02,100

okay

2877

04:25:31,189 --> 04:25:29,750

if you have that one wireside down just

2878

04:25:37,550 --> 04:25:31,199

look it on the second mouth

2879

04:25:47,570 --> 04:25:40,250

koichi for you body positioning Wise

2880

04:25:55,189 --> 04:25:51,830

hey that's why I started and uh

2881

04:26:00,889 --> 04:25:57,229

ability for yeah I definitely understand

2882

04:26:06,170 --> 04:26:00,899

you can also put your seat on the lower

2883

04:26:10,450 --> 04:26:08,469

oh okay

2884

04:26:35,950 --> 04:26:10,460

okay

2885

04:26:40,090 --> 04:26:37,849

koichiwakata there at the top of your

2886

04:26:43,790 --> 04:26:40,100

screen finishing up work as he drives

2887

04:26:46,070 --> 04:26:43,800

some bolts to tighten up everything on

2888

04:26:48,349 --> 04:26:46,080

the right mid strut collar

2889

04:26:50,090 --> 04:26:48,359

this is one of the final steps needed

2890

04:27:29,870 --> 04:26:50,100

on this structure that they've been

2891

04:27:29,880 --> 04:27:58,429

foreign

2892

04:28:04,610 --> 04:28:01,670

two pumps our point of view cameras are

2893

04:28:06,649 --> 04:28:04,620

back from Nicole Mann you can see her

2894

04:28:08,750 --> 04:28:06,659

putting some wire ties around some

2895

04:28:10,790 --> 04:28:08,760

multi-layer insulation this sort of

2896

04:28:13,010 --> 04:28:10,800

blanket that protects the hardware from

2897

04:28:15,649 --> 04:28:13,020

the vacuum of space

2898

04:28:17,809 --> 04:28:15,659

it's at three quarters of a turn

2899

04:28:21,490 --> 04:28:17,819

three quarters of a turn two pops on the

2900

04:28:21,500 --> 04:28:28,189

[Applause]

2901
04:28:34,790 --> 04:28:31,790
s welcome to Lower Side colorful

2902
04:28:36,769 --> 04:28:34,800
replace

2903
04:28:41,269 --> 04:28:36,779
do you want me to wait for the Powerball

2904
04:28:41,279 --> 04:28:44,510
copy Duke

2905
04:28:50,450 --> 04:28:47,510
you can translate on the mod kit at this

2906
04:28:54,170 --> 04:28:52,429
great

2907
04:28:57,820 --> 04:28:54,180
but I think also

2908
04:29:24,290 --> 04:29:03,710
[Applause]

2909
04:29:29,389 --> 04:29:26,689
probably one of two pops on the lower

2910
04:29:31,189 --> 04:29:29,399
collar Bolt and Duke Before you depart

2911
04:29:33,349 --> 04:29:31,199
that area

2912
04:29:35,870 --> 04:29:33,359
copy second pop koichi

2913
04:29:37,969 --> 04:29:35,880

Duke will just have you do a final check

2914

04:29:41,210 --> 04:29:37,979

of the mli around those collar bolts

2915

04:29:45,830 --> 04:29:41,220

making sure that the mli is snug and

2916

04:29:49,429 --> 04:29:47,689

okay if it's okay with you I'm going to

2917

04:29:51,710 --> 04:29:49,439

drop this Square scoop and then when I

2918

04:29:55,450 --> 04:29:51,720

come back to do the cables I can tie the

2919

04:29:57,950 --> 04:29:55,460

colorful coffee we're good with that

2920

04:30:01,370 --> 04:29:57,960

we copied two pops for you any

2921

04:30:01,380 --> 04:30:19,670

it's a Health Durham copy half a turn

2922

04:30:25,490 --> 04:30:21,649

all right koichi for you you can set

2923

04:30:28,010 --> 04:30:25,500

your PGT back to motor and stow it and

2924

04:30:30,490 --> 04:30:28,020

then close the mli around those collar

2925

04:30:33,110 --> 04:30:30,500

bolts M25 and M26

2926
04:30:35,030 --> 04:30:33,120
for both of you you can translate on the

2927
04:30:37,729 --> 04:30:35,040
mod kit now

2928
04:30:39,889 --> 04:30:37,739
and just make sure to minimize any loads

2929
04:30:42,050 --> 04:30:39,899
on the mod kit and don't try to

2930
04:30:45,830 --> 04:30:42,060
translate simultaneously so deconflict

2931
04:30:49,849 --> 04:30:48,530
okay I'm uh if you're doing the first

2932
04:30:52,070 --> 04:30:49,859
group so I won't be doing for a little

2933
04:30:58,729 --> 04:30:52,080
bit preaching

2934
04:31:04,130 --> 04:31:00,710
way and another check on their to-do

2935
04:31:07,189 --> 04:31:04,140
list is complete at the three hour 30

2936
04:31:08,870 --> 04:31:07,199
minute Mark of the spacewalk recap some

2937
04:31:11,149 --> 04:31:08,880
of the events that has happened today

2938
04:31:13,969 --> 04:31:11,159

they've been working on this mod kit

2939

04:31:16,910 --> 04:31:13,979

that you see here the cylindrical thing

2940

04:31:18,889 --> 04:31:16,920

here is our math Cam and then we've got

2941

04:31:20,990 --> 04:31:18,899

this pyramid type structure they've

2942

04:31:23,689 --> 04:31:21,000

built like 90 of it during their

2943

04:31:25,429 --> 04:31:23,699

previous spacewalk back in January but

2944

04:31:27,590 --> 04:31:25,439

they wanted to take one more look at the

2945

04:31:29,389 --> 04:31:27,600

lower strut the gray that you see on the

2946

04:31:31,610 --> 04:31:29,399

bottom of your screen and totally

2947

04:31:35,030 --> 04:31:31,620

installed this mid strut that you see

2948

04:31:37,370 --> 04:31:35,040

and the yellow you can see the collar

2949

04:31:39,410 --> 04:31:37,380

so what they did was troubleshooted the

2950

04:31:41,210 --> 04:31:39,420

lower strut installed the mid strut

2951
04:31:43,370 --> 04:31:41,220
after some troubleshooting with the team

2952
04:31:46,250 --> 04:31:43,380
here in mission control and tightens

2953
04:31:47,870 --> 04:31:46,260
that yellow piece the collar to rigidize

2954
04:31:51,830 --> 04:31:47,880
the whole structure to get it ready to

2955
04:31:53,809 --> 04:31:51,840
be load-bearing or having a irosa or the

2956
04:31:56,090 --> 04:31:53,819
rollout solar array launching this

2957
04:31:59,870 --> 04:31:56,100
summer uh sitting on it so it can be

2958
04:32:04,010 --> 04:32:01,870
they've just wrapped up putting the

2959
04:32:07,070 --> 04:32:04,020
multi-layer insulation the sort of

2960
04:32:08,450 --> 04:32:07,080
protective blanket back over it and now

2961
04:32:09,830 --> 04:32:08,460
they're gonna run them out get started

2962
04:32:11,809 --> 04:32:09,840
on their new task

2963
04:32:13,670 --> 04:32:11,819

uh they've been together these two

2964

04:32:16,490 --> 04:32:13,680

spacewalkers for most of the spacewalk

2965

04:32:31,309 --> 04:32:16,500

and they're getting ready to separate

2966

04:32:36,229 --> 04:32:33,410

Nicole man is going to work on some

2967

04:32:39,349 --> 04:32:36,239

cable routing so this refers to

2968

04:32:41,870 --> 04:32:39,359

connecting the new rollout solar rays

2969

04:32:43,670 --> 04:32:41,880

with the Legacy arrays of course she's

2970

04:32:46,309 --> 04:32:43,680

not going to actually install anything

2971

04:32:49,490 --> 04:32:46,319

we don't have our irosa solar arrays

2972

04:32:50,469 --> 04:32:49,500

there yet but it does save some time on

2973

04:32:52,790 --> 04:32:50,479

a future

2974

04:32:54,649 --> 04:32:52,800

spacewalk to have these cables already

2975

04:32:58,309 --> 04:32:54,659

there routed all they have to do is plug

2976

04:33:04,789 --> 04:33:01,490

you can you see if uh this next chapter

2977

04:33:08,029 --> 04:33:04,799

of the color of the analyze uh that's

2978

04:33:11,570 --> 04:33:10,131

through the bottom part needs to come up

2979

04:33:13,369 --> 04:33:11,580

and around

2980

04:33:21,650 --> 04:33:13,379

all right okay and once I get over there

2981

04:33:21,660 --> 04:33:26,810

Duke we see you okay how about now

2982

04:33:29,990 --> 04:33:28,010

yeah

2983

04:33:31,910 --> 04:33:30,000

open the back we feel like the um the

2984

04:33:33,410 --> 04:33:31,920

integrated ones that are coming up from

2985

04:33:37,131 --> 04:33:33,420

the bottom if you could pull them up

2986

04:33:39,470 --> 04:33:37,141

like that that's how it can go up yeah

2987

04:33:44,810 --> 04:33:39,480

but the one in your gravel with your

2988

04:33:53,289 --> 04:33:46,849

like does that make sense I don't think

2989

04:33:58,189 --> 04:33:56,029

so if you take the two integrated header

2990

04:33:59,029 --> 04:33:58,199

points okay and pull them apart from

2991

04:34:01,310 --> 04:33:59,039

each other

2992

04:34:03,769 --> 04:34:01,320

about now

2993

04:34:06,470 --> 04:34:03,779

always covering it

2994

04:34:08,929 --> 04:34:06,480

well maybe I don't know you can see in

2995

04:34:11,869 --> 04:34:08,939

that how much it needs to cover but

2996

04:34:14,510 --> 04:34:11,879

there's still a good Gap in the back

2997

04:34:17,029 --> 04:34:14,520

Duke we can't see it in your heck of you

2998

04:34:22,910 --> 04:34:17,039

so we'll trust your words to uh work on

2999

04:34:26,990 --> 04:34:24,470

yeah that's the top slap you're talking

3000

04:34:29,051 --> 04:34:27,000

now look at me do you see where my end

3001
04:34:31,730 --> 04:34:29,061
is yeah

3002
04:34:35,990 --> 04:34:31,740
don't have a part like this

3003
04:34:39,830 --> 04:34:36,000
okay it's all clutched up right now

3004
04:34:44,150 --> 04:34:39,840
for that one yes and then yeah but you

3005
04:34:55,490 --> 04:34:46,490
and I cannot reach

3006
04:35:00,349 --> 04:34:56,590
yeah

3007
04:35:02,810 --> 04:35:00,359
that's the one you're touching that's it

3008
04:35:08,529 --> 04:35:02,820
so that's what you're right I cannot cut

3009
04:35:13,429 --> 04:35:11,390
away from you

3010
04:35:15,349 --> 04:35:13,439
can come off a little higher I think

3011
04:35:17,750 --> 04:35:15,359
you'll be able to okay now I see it yeah

3012
04:35:20,869 --> 04:35:17,760
okay thank you don't need to come to

3013
04:35:27,830 --> 04:35:20,879

your right like spread them apart

3014

04:35:36,529 --> 04:35:29,689

okay

3015

04:35:36,539 --> 04:35:42,289

patient outboard

3016

04:35:47,709 --> 04:35:44,990

before if you agree with your left hand

3017

04:35:51,051 --> 04:35:47,719

someone you previously yes

3018

04:35:52,789 --> 04:35:51,061

left hand is this one yeah okay okay

3019

04:35:54,709 --> 04:35:52,799

this one okay

3020

04:35:56,529 --> 04:35:54,719

put it in your right hand oh right here

3021

04:36:02,689 --> 04:35:56,539

okay

3022

04:36:02,699 --> 04:36:07,070

awesome thank you

3023

04:36:10,310 --> 04:36:08,150

together

3024

04:36:11,929 --> 04:36:10,320

some teamwork going on outside of the

3025

04:36:14,449 --> 04:36:11,939

International Space Station to get this

3026
04:36:16,131 --> 04:36:14,459
multi-layer insulation this protective

3027
04:36:18,349 --> 04:36:16,141
blanket around the structure that they

3028
04:36:19,730 --> 04:36:18,359
just built

3029
04:36:27,830 --> 04:36:19,740
okay

3030
04:36:33,230 --> 04:36:30,170
so we know that after this multi-layer

3031
04:36:34,490 --> 04:36:33,240
insulation is reinstalled uh Nicole Mann

3032
04:36:37,849 --> 04:36:34,500
is going to make her way over to some

3033
04:36:40,730 --> 04:36:37,859
cable routing meanwhile koichiwakata is

3034
04:36:43,070 --> 04:36:40,740
going to work on getting a new portable

3035
04:36:44,929 --> 04:36:43,080
foot restraint now let's push it upward

3036
04:36:46,310 --> 04:36:44,939
with it there are a couple of these

3037
04:36:48,051 --> 04:36:46,320
outside of the International Space

3038
04:36:50,029 --> 04:36:48,061

Station and the one that they had been

3039

04:36:54,289 --> 04:36:50,039

using has been having some trouble with

3040

04:36:58,551 --> 04:36:56,929

go outboard and up

3041

04:37:00,709 --> 04:36:58,561

you can kind of think of these portable

3042

04:37:02,390 --> 04:37:00,719

foot restraints kind of like a tripod

3043

04:37:03,709 --> 04:37:02,400

you have your pitch and you have your

3044

04:37:05,810 --> 04:37:03,719

yaw those are the different directions

3045

04:37:07,090 --> 04:37:05,820

that you're able to move and it's the

3046

04:37:09,709 --> 04:37:07,100

pitch that they were having trouble with

3047

04:37:11,570 --> 04:37:09,719

it's not totally unusable they can use

3048

04:37:13,670 --> 04:37:11,580

it again but they prefer to use one

3049

04:37:16,670 --> 04:37:13,680

that's a little more smooth for future

3050

04:37:18,949 --> 04:37:16,680

Evas so kuichiwakata is gonna go take

3051
04:37:20,269 --> 04:37:18,959
the sticky one and replace it with one

3052
04:37:21,289 --> 04:37:20,279
that works a little bit better no it

3053
04:37:23,150 --> 04:37:21,299
looks like

3054
04:37:25,670 --> 04:37:23,160
this side

3055
04:37:27,709 --> 04:37:25,680
the top side of that so the side that's

3056
04:37:30,650 --> 04:37:27,719
closest to your head now has kind of A

3057
04:37:32,330 --> 04:37:30,660
Wrinkle a fold in it

3058
04:37:37,810 --> 04:37:32,340
if you can straighten that out that may

3059
04:37:43,369 --> 04:37:41,209
you'll pull up on the top flop okay

3060
04:37:49,010 --> 04:37:43,379
clean it all out all right

3061
04:37:54,349 --> 04:37:52,551
so I pull it away from the undo it pull

3062
04:37:56,330 --> 04:37:54,359
it away and straighten it out

3063
04:37:59,570 --> 04:37:56,340

then I think you'll have a better Runner

3064

04:38:03,109 --> 04:37:59,580

rocket hitting it around

3065

04:38:03,119 --> 04:38:06,230

on anymore so

3066

04:38:13,310 --> 04:38:09,529

you see my left hand yeah I see it take

3067

04:38:18,650 --> 04:38:16,310

undo it so that you gotta get everything

3068

04:38:20,990 --> 04:38:18,660

it's like a jumbled mess

3069

04:38:22,609 --> 04:38:21,000

and yeah koichi for you since you can

3070

04:38:25,849 --> 04:38:22,619

translate on the mod kit now you can

3071

04:38:28,490 --> 04:38:25,859

also move up and try to get up and over

3072

04:38:31,189 --> 04:38:28,500

so that you're looking down

3073

04:38:32,929 --> 04:38:31,199

on the mli maybe you'll be able to get a

3074

04:38:35,449 --> 04:38:32,939

better view of what you're what you're

3075

04:38:35,459 --> 04:38:54,949

okay copy that I'll move it around

3076

04:39:21,650 --> 04:38:57,051

I'm going to continue with the cable

3077

04:39:21,660 --> 04:39:50,510

foreign

3078

04:39:50,520 --> 04:40:04,070

gosh

3079

04:40:14,208 --> 04:40:06,350

you can see Nicole man at the bottom of

3080

04:40:21,050 --> 04:40:16,208

I

3081

04:40:25,610 --> 04:40:22,850

just like here on Earth we want to have

3082

04:40:28,610 --> 04:40:25,620

nice and tidy cables so she's working to

3083

04:40:58,910 --> 04:40:28,620

get rid of any slack and use wire ties

3084

04:41:03,708 --> 04:41:01,788

squeaky for you your plus is close to

3085

04:41:06,590 --> 04:41:03,718

the solar array so just watch that body

3086

04:41:12,948 --> 04:41:09,770

I understand that

3087

04:41:14,690 --> 04:41:12,958

yeah it's kind of contacting part of the

3088

04:41:18,610 --> 04:41:14,700

solar array so you'll want to move

3089

04:41:22,610 --> 04:41:18,620

further toward the mounting bracket

3090

04:41:22,620 --> 04:41:24,948

yeah

3091

04:41:30,070 --> 04:41:28,310

my high side I cannot get there

3092

04:41:32,628 --> 04:41:30,080

and then uh

3093

04:41:34,128 --> 04:41:32,638

the top part list is great it's not just

3094

04:41:37,390 --> 04:41:34,138

the bottom flap that needs to be

3095

04:41:43,250 --> 04:41:40,128

and the uh

3096

04:41:45,830 --> 04:41:43,260

somehow on the left side too in the

3097

04:41:50,868 --> 04:41:45,840

middle is kind of open but I think we

3098

04:41:50,878 --> 04:41:54,430

um

3099

04:42:07,310 --> 04:41:57,050

working on this

3100

04:42:11,628 --> 04:42:09,530

Ouija belts let's have you add the long

3101
04:42:15,110 --> 04:42:11,638
wire tie

3102
04:42:17,330 --> 04:42:15,120
around that mli and see if we can cinch

3103
04:42:19,010 --> 04:42:17,340
it shut with the wire time so that's the

3104
04:42:23,330 --> 04:42:19,020
long wire tie that would be used for the

3105
04:42:29,150 --> 04:42:25,610
okay

3106
04:42:30,410 --> 04:42:29,160
I'll try that and then uh still opening

3107
04:42:35,330 --> 04:42:30,420
here

3108
04:42:41,330 --> 04:42:38,690
it's about a six inch hole so for the

3109
04:42:53,110 --> 04:42:41,340
bottom flap is not doing its job

3110
04:42:53,120 --> 04:43:01,010
a little bit

3111
04:43:01,020 --> 04:43:04,850
how about now

3112
04:43:04,860 --> 04:43:08,750
I'll give you a second

3113
04:43:08,760 --> 04:43:20,208

yeah the other side they cannot see

3114

04:43:46,750 --> 04:43:22,310

you're close

3115

04:43:50,510 --> 04:43:48,708

we'll come back

3116

04:43:51,708 --> 04:43:50,520

to the mli okay

3117

04:44:16,430 --> 04:43:51,718

okay

3118

04:44:22,788 --> 04:44:19,550

this one looks closed up here for me I

3119

04:44:22,798 --> 04:44:28,330

I think this one is good

3120

04:44:28,340 --> 04:44:32,628

I'm gonna

3121

04:44:36,530 --> 04:44:34,550

you can see kawichiwakata at the top of

3122

04:44:38,030 --> 04:44:36,540

the screen now has cables in his hands

3123

04:44:40,250 --> 04:44:38,040

he was working on closing the

3124

04:44:41,930 --> 04:44:40,260

multi-layer insulation around this

3125

04:44:43,190 --> 04:44:41,940

structure he got

3126

04:44:45,830 --> 04:44:43,200

he got good

3127

04:44:47,628 --> 04:44:45,840

um had a couple of issues just fully

3128

04:44:49,550 --> 04:44:47,638

closing this last piece he was working

3129

04:44:51,830 --> 04:44:49,560

on but he's going to come back to that

3130

04:45:44,750 --> 04:44:51,840

and for the moment help Nicole man with

3131

04:45:44,760 --> 04:45:47,510

oh

3132

04:46:01,610 --> 04:45:50,750

okay three tweets on the uh

3133

04:46:07,310 --> 04:46:04,490

and Gucci for your awareness your uh

3134

04:46:08,750 --> 04:46:07,320

hekka and the helmet assembly is loose

3135

04:46:10,610 --> 04:46:08,760

of course it's still held on with the

3136

04:46:14,208 --> 04:46:10,620

straps but just so you know it's going

3137

04:46:14,218 --> 04:46:36,170

okay

3138

04:46:42,170 --> 04:46:39,470

on the long hunt Builders so uh

3139

04:46:52,490 --> 04:46:42,180

Fireside so I need to use the

3140

04:46:52,500 --> 04:46:59,690

I'll see that

3141

04:47:04,670 --> 04:47:02,750

you can see it didn't work now wrapping

3142

04:47:19,490 --> 04:47:04,680

these wire ties around this bundle of

3143

04:47:26,750 --> 04:47:21,190

okay

3144

04:47:26,760 --> 04:47:31,430

copy Duke

3145

04:47:37,850 --> 04:47:35,330

and on the arena on the long shot uh do

3146

04:47:41,030 --> 04:47:37,860

I need to put it on the station or can I

3147

04:47:45,590 --> 04:47:41,040

just do three tweaks around the uh

3148

04:47:45,600 --> 04:47:48,770

and Grill okay

3149

04:47:52,910 --> 04:47:51,288

and just for a brief Handover period the

3150

04:47:54,770 --> 04:47:52,920

International Space Station has a number

3151
04:47:56,990 --> 04:47:54,780
of ways to communicate with the ground

3152
04:47:59,390 --> 04:47:57,000
primarily through the tracking and data

3153
04:48:01,010 --> 04:47:59,400
relay or teacher satellites when the

3154
04:48:02,990 --> 04:48:01,020
Space Station's antennas lose sight of

3155
04:48:05,270 --> 04:48:03,000
one of them it creates a loss of signal

3156
04:48:07,010 --> 04:48:05,280
like we're in now but tdrs is a

3157
04:48:08,690 --> 04:48:07,020
constellation of satellites meaning

3158
04:48:10,730 --> 04:48:08,700
there are several of these communication

3159
04:48:12,550 --> 04:48:10,740
satellites in orbit and it doesn't take

3160
04:48:14,930 --> 04:48:12,560
long to connect with another one

3161
04:48:17,270 --> 04:48:14,940
we should have audio and video back

3162
04:48:18,530 --> 04:48:17,280
shortly and these outages are planned

3163
04:48:20,208 --> 04:48:18,540

and mean we know when they're gonna

3164

04:48:23,030 --> 04:48:20,218

happen the opposite side to pick up your

3165

04:48:27,788 --> 04:48:25,128

okay after uh

3166

04:48:30,110 --> 04:48:27,798

you could translate that will

3167

04:48:33,708 --> 04:48:30,120

translate to the opposite side happy

3168

04:48:37,910 --> 04:48:35,750

and actually Before you depart koichi

3169

04:48:45,410 --> 04:48:37,920

we'll have you install that wire tie

3170

04:48:49,128 --> 04:48:47,868

indeed the long wire tie around mli and

3171

04:49:05,330 --> 04:48:49,138

just make sure that we have all of those

3172

04:49:05,340 --> 04:49:11,390

okay I'll switch to the vertical

3173

04:49:11,400 --> 04:49:21,650

copy Duke

3174

04:49:27,110 --> 04:49:23,868

okay I believe my next step is it'll get

3175

04:49:28,670 --> 04:49:27,120

uh am I going to get the other table

3176

04:49:31,010 --> 04:49:28,680

Duke first we'll have you guys both

3177

04:49:34,070 --> 04:49:31,020

working together to do a hecka scan of

3178

04:49:35,510 --> 04:49:34,080

the final mod kit mli config and just

3179

04:49:38,270 --> 04:49:35,520

make sure that all of those gaps are

3180

04:49:41,390 --> 04:49:38,280

closed especially after quiche installs

3181

04:49:46,190 --> 04:49:42,530

okay

3182

04:49:51,170 --> 04:49:49,310

do you have my husband now

3183

04:49:58,368 --> 04:49:51,180

we're getting video back

3184

04:50:05,150 --> 04:50:00,110

okay Duke we do have your hacker back

3185

04:50:10,850 --> 04:50:07,990

all right

3186

04:50:57,650 --> 04:50:10,860

we've got about 30 seconds of video

3187

04:51:02,090 --> 04:51:00,410

okay and koichi will also get your eyes

3188

04:51:03,410 --> 04:51:02,100

on Duke's side

3189

04:51:05,330 --> 04:51:03,420

and

3190

04:51:10,128 --> 04:51:05,340

if it looks good to you we may have Duke

3191

04:51:10,138 --> 04:51:14,030

okay

3192

04:51:24,288 --> 04:51:16,430

let me check that

3193

04:51:29,330 --> 04:51:27,110

not attached to anything I think I'll

3194

04:51:31,128 --> 04:51:29,340

put things should be attached right

3195

04:51:33,948 --> 04:51:31,138

you know

3196

04:51:36,050 --> 04:51:33,958

Rocky fits in on the right side

3197

04:51:37,610 --> 04:51:36,060

a firm yeah all of those fit pins should

3198

04:51:39,650 --> 04:51:37,620

be installed you think it's the Locking

3199

04:51:43,490 --> 04:51:39,660

pit pin for the telescoping feature of

3200

04:51:43,500 --> 04:51:52,610

Taylor you're coming in shopping

3201
04:52:01,850 --> 04:51:54,230
we've got about two minutes of ready

3202
04:52:05,510 --> 04:52:04,250
Nicole man noted that she found a spare

3203
04:52:06,708 --> 04:52:05,520
pit pin

3204
04:52:09,350 --> 04:52:06,718
um meanwhile here in Mission Control

3205
04:52:11,810 --> 04:52:09,360
they've noted that they all the pit pins

3206
04:52:14,030 --> 04:52:11,820
do indeed need to be installed onto this

3207
04:52:16,010 --> 04:52:14,040
mod kit that they've been working on so

3208
04:52:24,368 --> 04:52:16,020
we're trying to find a place for it

3209
04:52:30,050 --> 04:52:26,628
here we've got about two minutes of

3210
04:52:33,590 --> 04:52:32,448
okay I got your back and I did not copy

3211
04:52:37,070 --> 04:52:33,600
your laugh

3212
04:52:43,368 --> 04:52:40,430
from ratty comes here

3213
04:52:45,230 --> 04:52:43,378

we've got a minute remaining a firm all

3214

04:52:46,788 --> 04:52:45,240

pit fins should be installed did you

3215

04:52:50,330 --> 04:52:46,798

think that was the Locking pit pin for

3216

04:52:51,530 --> 04:52:50,340

the telescoping feature of the midstret

3217

04:52:53,090 --> 04:52:51,540

all right

3218

04:53:07,190 --> 04:52:53,100

that's what I think it is on the right

3219

04:53:11,810 --> 04:53:09,470

okay guys in order to reinstall the pit

3220

04:53:15,350 --> 04:53:11,820

pin we'll need to open the mli again

3221

04:53:24,470 --> 04:53:15,360

koichi you can pause on the wire tie for

3222

04:53:24,480 --> 04:54:23,570

ready come hand over here

3223

04:54:28,250 --> 04:54:25,970

as we work to get our communication back

3224

04:54:31,128 --> 04:54:28,260

and our live views here shortly a little

3225

04:54:35,150 --> 04:54:31,138

update on what tasks have been done or

3226

04:54:40,430 --> 04:54:37,550

no Nicole Mann successfully routed

3227

04:54:42,110 --> 04:54:40,440

cables at the 1A power Channel That's

3228

04:54:44,090 --> 04:54:42,120

where they've been working this whole

3229

04:54:46,128 --> 04:54:44,100

time hopefully com should be a little

3230

04:54:48,350 --> 04:54:46,138

less Rowdy Cartman's about to give an

3231

04:54:50,390 --> 04:54:48,360

update Luigi will have you pause with

3232

04:54:53,810 --> 04:54:50,400

the wire tie Ops for now

3233

04:54:59,570 --> 04:54:53,820

and Duke you'll head to one Bravo

3234

04:55:03,310 --> 04:55:01,430

perfect we'll also take a glove half and

3235

04:55:06,708 --> 04:55:03,320

Gauntlet check from you both

3236

04:55:16,368 --> 04:55:06,718

are you ready to go

3237

04:55:24,530 --> 04:55:18,530

so where you see them now they're at the

3238

04:55:31,070 --> 04:55:27,170

okay yeah you two uh clouds are good to

3239

04:55:35,150 --> 04:55:31,080

have is dry and gauntlets uh okay copy

3240

04:55:36,830 --> 04:55:35,160

ev1 and ev2 so Duke will be having you

3241

04:55:38,410 --> 04:55:36,840

grab the cable bag and heading out to

3242

04:55:41,990 --> 04:55:38,420

one Bravo

3243

04:55:44,270 --> 04:55:42,000

koichi you'll be working all of the mli

3244

04:55:47,930 --> 04:55:44,280

stuff here in order to reinstall that

3245

04:55:49,970 --> 04:55:47,940

pit pin that Duke saw not installed this

3246

04:55:52,368 --> 04:55:49,980

is the Locking pin for the telescoping

3247

04:55:57,530 --> 04:55:52,378

feature you'll need to peel back the mli

3248

04:56:17,090 --> 04:56:12,890

okay

3249

04:56:18,530 --> 04:56:17,100

that where it is

3250

04:56:27,650 --> 04:56:18,540

floating

3251

04:56:27,660 --> 04:56:35,948

okay

3252

04:56:40,550 --> 04:56:38,330

that's correct and Duke we'd like you

3253

04:56:42,770 --> 04:56:40,560

moving out to one Bravo so we'll have

3254

04:56:47,628 --> 04:56:42,780

you translate

3255

04:56:51,050 --> 04:56:49,250

and I'm just looking at the table it's

3256

04:56:52,788 --> 04:56:51,060

not the whole bathroom

3257

04:56:54,830 --> 04:56:52,798

that's correct you're translating to the

3258

04:56:58,910 --> 04:56:54,840

cable bag picking up the one Bravo

3259

04:57:02,750 --> 04:57:01,070

you can see kuichiwakata on the right

3260

04:57:06,050 --> 04:57:02,760

side of your screen that is his point of

3261

04:57:07,850 --> 04:57:06,060

view uh Nicole Mann identified a pit pin

3262

04:57:10,550 --> 04:57:07,860

that had not been installed into the

3263

04:57:12,650 --> 04:57:10,560

structure so kuichu Akana is undoing

3264

04:57:16,010 --> 04:57:12,660

these levels of multi-layer insulation

3265

04:57:18,830 --> 04:57:16,020

to be able to place the pit pin copy

3266

04:57:21,470 --> 04:57:18,840

and yeah that lanyard will probably be

3267

04:57:23,270 --> 04:57:21,480

at full extension

3268

04:57:27,590 --> 04:57:23,280

and if you need to peel back more of the

3269

04:57:32,030 --> 04:57:29,990

if you can do a washer check also on

3270

04:57:38,390 --> 04:57:32,040

that pin before you install it just make

3271

04:57:38,400 --> 04:57:47,330

okay water is there

3272

04:57:52,970 --> 04:57:49,788

and the Fitbit is in you see that on the

3273

04:57:52,980 --> 04:57:55,628

foreign

3274

04:58:02,208 --> 04:57:58,910

that looks good we can close up that mli

3275

04:58:06,770 --> 04:58:02,218

again and we'll work on the mli wire tie

3276

04:58:11,690 --> 04:58:09,050

okay

3277

04:58:14,750 --> 04:58:11,700

if this club is completely without the

3278

04:58:16,670 --> 04:58:14,760

fire type that's also fine right

3279

04:58:32,090 --> 04:58:16,680

indeed Gucci

3280

04:58:37,910 --> 04:58:34,910

coming up now on the four hour mark of

3281

04:58:40,250 --> 04:58:37,920

the spacewalk during part one of the

3282

04:58:43,368 --> 04:58:40,260

spacewalk they completed installation of

3283

04:58:45,170 --> 04:58:43,378

a mod kit on the 1B power Channel and

3284

04:58:50,990 --> 04:58:45,180

today that we're finishing up work on

3285

04:58:56,390 --> 04:58:53,690

Nicole man and kuichiwakata successfully

3286

04:58:58,250 --> 04:58:56,400

routed some cables around the 1A site

3287

04:59:01,190 --> 04:58:58,260

again where they've been spending the

3288

04:59:03,288 --> 04:59:01,200

majority of their spacewalk Nicole Mann

3289

04:59:05,570 --> 04:59:03,298

is now making her way over to the 1B

3290

04:59:08,270 --> 04:59:05,580

Channel where they spent their previous

3291

04:59:17,810 --> 04:59:08,280

spacewalk to Route some cables there as

3292

04:59:21,590 --> 04:59:19,788

um I cannot at the moment

3293

04:59:22,490 --> 04:59:21,600

um all right let's try to come around

3294

04:59:24,770 --> 04:59:22,500

now

3295

04:59:26,390 --> 04:59:24,780

looks like it's closed without the wire

3296

04:59:29,868 --> 04:59:26,400

tires but I just wanted to make sure

3297

04:59:34,430 --> 04:59:31,730

copy koichi

3298

04:59:36,770 --> 04:59:34,440

and reorient yourself

3299

04:59:46,250 --> 04:59:36,780

session that you need in order to see

3300

04:59:49,550 --> 04:59:48,110

is a little Gap I think you'll be able

3301

04:59:52,490 --> 04:59:49,560

to fix it

3302

04:59:57,530 --> 04:59:54,470

and guys big picture update for you

3303

04:59:59,750 --> 04:59:57,540

we're at pet of four hours on the nose

3304

05:00:02,150 --> 04:59:59,760

for about 45 minutes down on the

3305

05:00:04,010 --> 05:00:02,160

timeline right now so we're going to be

3306

05:00:06,288 --> 05:00:04,020

prioritizing doing those one Bravo

3307

05:00:08,570 --> 05:00:06,298

cables that Duke is on her way out to do

3308

05:00:10,490 --> 05:00:08,580

we'll have a modified version of the

3309

05:00:12,530 --> 05:00:10,500

apfr shuffle we're still working that

3310

05:00:18,470 --> 05:00:12,540

plan and then we do still intend to grab

3311

05:00:18,480 --> 05:00:25,550

okay copy that

3312

05:00:29,330 --> 05:00:27,650

we've got plenty of pet time from a

3313

05:00:34,250 --> 05:00:29,340

consumable standpoint we're at about 7

3314

05:00:34,260 --> 05:00:38,410

yes

3315

05:00:38,420 --> 05:00:52,010

looking good

3316

05:00:56,330 --> 05:00:54,410

can you update us on kalichi's suit data

3317

05:00:59,030 --> 05:00:56,340

it's exactly what we're talking right

3318

05:01:01,610 --> 05:00:59,040

now so after analyzing the data it looks

3319

05:01:05,448 --> 05:01:01,620

like it was just a blip in the sensor

3320

05:01:11,510 --> 05:01:05,458

data but we are happy with the suit

3321

05:01:18,410 --> 05:01:14,810

okay good news mitcv is set to six

3322

05:01:23,390 --> 05:01:20,868

here on the ground NASA astronaut Xena

3323

05:01:25,970 --> 05:01:23,400

Cardman just gave a big picture overview

3324

05:01:28,850 --> 05:01:25,980

of our spacewalk she talked about the

3325

05:01:30,110 --> 05:01:28,860

pet or the phase elapsed time this is

3326

05:01:31,910 --> 05:01:30,120

the total time that they've been

3327

05:01:38,090 --> 05:01:31,920

spacewalking with their suits on battery

3328

05:01:42,890 --> 05:01:40,850

with their remaining time Nicole man is

3329

05:01:48,910 --> 05:01:42,900

indeed going to continue routing cables

3330

05:01:52,368 --> 05:01:50,990

kawichiwakata is indeed going to move

3331

05:01:54,830 --> 05:01:52,378

the portable foot restraints around

3332

05:01:57,708 --> 05:01:54,840

remember one of them had a little bit of

3333

05:02:00,708 --> 05:01:57,718

a sticky knob on the that control the

3334

05:02:03,230 --> 05:02:00,718

pitch function when moving around from

3335

05:02:06,530 --> 05:02:03,240

side to side they're working a plan now

3336

05:02:08,090 --> 05:02:06,540

on how to go about that without adding

3337

05:02:11,448 --> 05:02:08,100

uh

3338

05:02:13,610 --> 05:02:11,458

to make sure that it's okay

3339

05:02:16,490 --> 05:02:13,620

got me great news

3340

05:02:19,070 --> 05:02:16,500

and previously koichi wakada noticed a

3341

05:02:19,750 --> 05:02:19,080

spike in his O2 data

3342

05:02:22,270 --> 05:02:19,760

um

3343

05:02:24,530 --> 05:02:22,280

teams here in Mission Control

3344

05:02:26,390 --> 05:02:24,540

ran all of their data looked at

3345

05:02:29,150 --> 05:02:26,400

everything including a suit check of

3346

05:02:31,030 --> 05:02:29,160

kuichi makata's suit and they've been

3347

05:02:33,350 --> 05:02:31,040

monitoring the data in the meantime

3348

05:02:35,750 --> 05:02:33,360

xenocarbon did relay to the crew that

3349

05:02:38,990 --> 05:02:35,760

they have seen no abnormalities again

3350

05:03:05,570 --> 05:02:39,000

and are confident that it was just a

3351

05:03:05,580 --> 05:03:09,288

okay

3352

05:03:14,628 --> 05:03:11,990

all right koichi

3353

05:03:16,730 --> 05:03:14,638

we are waiting on confirmation from all

3354

05:03:20,090 --> 05:03:16,740

the interested parties here but we will

3355

05:03:23,030 --> 05:03:20,100

have you do a hecka scan as well

3356

05:03:23,040 --> 05:03:27,470

let me take that

3357

05:03:32,890 --> 05:03:30,470

if I don't know if you can see it no

3358

05:03:35,990 --> 05:03:32,900

I thought I could not uh

3359

05:03:37,070 --> 05:03:36,000

okay no problem I will do the second

3360

05:03:39,110 --> 05:03:37,080

scan now

3361

05:03:41,990 --> 05:03:39,120

copy and we will actually have you

3362

05:03:44,448 --> 05:03:42,000

install that wire tie we think we see a

3363

05:03:46,490 --> 05:03:44,458

gap in the mli

3364

05:03:49,190 --> 05:03:46,500

right okay

3365

05:03:54,970 --> 05:03:51,410

looks like it's just not long enough

3366

05:03:57,590 --> 05:03:54,980

then let me uh do the YSI first

3367

05:03:58,970 --> 05:03:57,600

game yeah we agree with that Gucci let's

3368

05:04:00,288 --> 05:03:58,980

get that wire tie on there and then

3369

05:04:02,150 --> 05:04:00,298

we'll have you head over to the mounting

3370

05:04:07,010 --> 05:04:02,160

bracket for a better vantage point for

3371

05:04:37,128 --> 05:04:31,670

okay

3372

05:04:39,708 --> 05:04:37,138

and I am headed out to one Bravo copy

3373

05:04:45,050 --> 05:04:41,570

you'll be crossing the kill pin in the

3374

05:04:56,810 --> 05:04:45,060

apfr going to the non-radiator side

3375

05:04:56,820 --> 05:05:08,390

foreign

3376

05:05:11,330 --> 05:05:10,010

so we'll have you head over to the

3377

05:05:35,330 --> 05:05:11,340

mounting bracket and we'll get a really

3378

05:05:39,590 --> 05:05:37,250

moving right down the to-do list here

3379

05:05:41,390 --> 05:05:39,600

you can see NASA astronaut Nicole Mann

3380

05:05:43,430 --> 05:05:41,400

on the bottom of your screen she's got

3381

05:05:45,050 --> 05:05:43,440

the legs with the red stripes she's

3382

05:05:46,850 --> 05:05:45,060

holding a bundle of cables and she's

3383

05:05:49,550 --> 05:05:46,860

going to make her way out to the 1B

3384

05:05:51,770 --> 05:05:49,560

power Channel where her she spent a lot

3385

05:05:53,208 --> 05:05:51,780

of time in her previous spacewalk she

3386

05:05:55,310 --> 05:05:53,218

just routed the cables here at the

3387

05:06:04,490 --> 05:05:55,320

workshop site that she's at 1A and now

3388

05:06:10,310 --> 05:06:07,550

the space station just experienced an

3389

05:06:24,070 --> 05:06:10,320

orbital Sunset as you can just see it

3390

05:06:29,628 --> 05:06:26,810

the other side great we're taking a look

3391

05:06:31,250 --> 05:06:29,638

okay looks good

3392

05:06:46,250 --> 05:06:31,260

okay

3393

05:06:48,288 --> 05:06:46,260

another is covering everything looking

3394

05:06:53,570 --> 05:06:48,298

good koichi give us just a moment while

3395

05:07:25,610 --> 05:07:21,170

okay

3396

05:07:27,890 --> 05:07:25,620

great if we could have you dip below

3397

05:07:30,590 --> 05:07:27,900

that mounting bracket and take a look at

3398

05:07:33,530 --> 05:07:30,600

the mid strut and try to get the mid

3399

05:07:35,570 --> 05:07:33,540

strut in your heck of you

3400

05:08:00,890 --> 05:07:35,580

okay

3401
05:08:07,910 --> 05:08:03,288
that's a good position we're checking on

3402
05:08:07,920 --> 05:08:38,868
okay

3403
05:08:45,708 --> 05:08:41,628
thank you I'm just uh

3404
05:08:48,050 --> 05:08:45,718
but this is all coming apart here

3405
05:08:50,390 --> 05:08:48,060
copy Duke take the time that you need to

3406
05:09:00,590 --> 05:08:50,400
get everything in a good config minimize

3407
05:09:04,310 --> 05:09:02,510
and do what works best for you but you

3408
05:09:06,948 --> 05:09:04,320
can also put that Cable Bundle around

3409
05:09:12,050 --> 05:09:06,958
your brt and help tend it toward your

3410
05:09:16,730 --> 05:09:13,690
yeah

3411
05:09:18,350 --> 05:09:16,740
just for my BLT then I run them around

3412
05:09:20,270 --> 05:09:18,360
the brt but

3413
05:09:22,670 --> 05:09:20,280

but um

3414

05:09:25,788 --> 05:09:22,680

hop on those walks off so I'm trying to

3415

05:09:27,590 --> 05:09:25,798

adjust that now no problem Duke Gucci

3416

05:09:38,270 --> 05:09:27,600

let's have you take a look at the left

3417

05:09:38,280 --> 05:09:53,150

okay I'm pointing at the left side

3418

05:09:56,990 --> 05:09:54,830

all right a little further left with

3419

05:10:00,350 --> 05:09:57,000

your pan there kuichi

3420

05:10:03,470 --> 05:10:00,360

we'll take one last look

3421

05:10:06,350 --> 05:10:03,480

a little further left

3422

05:10:12,288 --> 05:10:08,628

further so that we can see the full left

3423

05:10:12,298 --> 05:10:15,948

that's better

3424

05:10:15,958 --> 05:10:24,350

I need to go any further

3425

05:10:29,150 --> 05:10:25,910

all right Gucci we're happy with that

3426

05:10:32,868 --> 05:10:31,190

and with that you can head back around

3427

05:10:38,628 --> 05:10:32,878

the Mac canister and you'll be picking

3428

05:10:38,638 --> 05:10:44,570

copy that

3429

05:10:47,868 --> 05:10:46,368

on the left of your screen you can see

3430

05:10:53,690 --> 05:10:47,878

the point of view of NASA astronaut

3431

05:10:58,010 --> 05:10:56,150

she's got a bunch of cables in her hands

3432

05:11:06,530 --> 05:10:58,020

and she's making her way to the 1B work

3433

05:11:06,540 --> 05:11:16,190

okay

3434

05:11:19,990 --> 05:11:18,770

I just wanted to double check with you

3435

05:11:23,090 --> 05:11:20,000

that the

3436

05:11:24,890 --> 05:11:23,100

NRI that I uh that's just you know it

3437

05:11:29,090 --> 05:11:24,900

covers the

3438

05:11:31,070 --> 05:11:29,100

the open cable as well

3439

05:11:53,090 --> 05:11:31,080

it's okay right

3440

05:11:53,100 --> 05:11:59,930

yeah kuichi we're good without config

3441

05:12:04,970 --> 05:12:01,970

okay great all right thank you David I'm

3442

05:12:06,770 --> 05:12:04,980

going to translate to the DBA bag and

3443

05:12:09,230 --> 05:12:06,780

perfect yep you'll be picking up that

3444

05:13:03,650 --> 05:12:09,240

TBA bag bringing it to the cable bag and

3445

05:13:09,288 --> 05:13:06,190

copy right hand turn it two one two five

3446

05:13:11,390 --> 05:13:09,298

two one three eight we'll be following

3447

05:13:17,270 --> 05:13:11,400

along

3448

05:14:09,948 --> 05:13:19,490

we track you going over the A-frame to

3449

05:14:09,958 --> 05:14:14,330

wow

3450

05:14:25,030 --> 05:14:16,850

okay I am over and now I'm at it uh

3451

05:14:25,040 --> 05:14:34,448

for the green hook

3452

05:14:39,110 --> 05:14:36,708

these numbers that you're hearing Nicole

3453

05:14:41,090 --> 05:14:39,120

man communicate with the ground are sort

3454

05:14:43,190 --> 05:14:41,100

of visual markers um handrail numbers

3455

05:14:44,810 --> 05:14:43,200

that are listed on the outside of the

3456

05:14:46,070 --> 05:14:44,820

space station that help us know where

3457

05:14:47,810 --> 05:14:46,080

she is

3458

05:14:49,730 --> 05:14:47,820

in relation to the outside of the space

3459

05:14:55,208 --> 05:14:49,740

station as she moves on her way to the

3460

05:14:55,218 --> 05:15:29,270

Eagle bag

3461

05:15:34,910 --> 05:15:32,628

but then at night it's uh

3462

05:15:36,530 --> 05:15:34,920

visible the translations from the long

3463

05:15:41,030 --> 05:15:36,540

hand rail to this

3464

05:15:44,448 --> 05:15:41,040

side to the cable bag there's a

3465

05:15:49,368 --> 05:15:44,458

handrail on the

3466

05:15:49,378 --> 05:16:08,630

checking koichi

3467

05:16:49,190 --> 05:16:10,670

[Applause]

3468

05:16:49,200 --> 05:16:51,910

foreign

3469

05:16:56,690 --> 05:16:54,890

ERS on the move they have completely

3470

05:16:58,910 --> 05:16:56,700

installed what they set out to do today

3471

05:17:00,590 --> 05:16:58,920

install the mid-strut and lower strut

3472

05:17:02,330 --> 05:17:00,600

completing the support structure that

3473

05:17:30,170 --> 05:17:02,340

they've been working on and now they're

3474

05:17:30,180 --> 05:17:38,150

dude

3475

05:17:42,288 --> 05:17:40,010

let's take a look at it

3476

05:17:43,970 --> 05:17:42,298

copy

3477

05:17:46,010 --> 05:17:43,980

and while you're taking a look at that

3478

05:17:48,230 --> 05:17:46,020

just a reminder some cautions for you

3479

05:17:50,868 --> 05:17:48,240

are to minimize loads into the wire ties

3480

05:17:53,570 --> 05:17:50,878

and mli that are on that handrail 2008

3481

05:17:58,250 --> 05:17:53,580

and don't translate on the radiator base

3482

05:17:58,260 --> 05:18:20,090

Bobby

3483

05:18:25,490 --> 05:18:22,850

okay no that's good I'm just gonna put

3484

05:19:17,170 --> 05:18:25,500

it early down here then

3485

05:19:32,050 --> 05:19:19,128

my green hook

3486

05:19:38,990 --> 05:19:34,610

you can Stow the TBA bag in the cable

3487

05:19:39,000 --> 05:19:52,868

look at that

3488

05:19:57,650 --> 05:19:55,250

Duke once you've got that green hook in

3489

05:20:04,128 --> 05:19:57,660

place you'll be heading outboard to S6

3490

05:20:06,770 --> 05:20:05,390

okay

3491

05:20:08,750 --> 05:20:06,780

um I just figured out and I've got the

3492

05:21:16,430 --> 05:20:08,760

greenhouse on 2006.

3493

05:21:19,810 --> 05:21:17,590

okay

3494

05:21:23,448 --> 05:21:19,820

uh

3495

05:21:27,350 --> 05:21:23,458

in the cable bag

3496

05:21:27,360 --> 05:21:31,368

copy that

3497

05:21:31,378 --> 05:21:38,050

copy koichi

3498

05:21:42,170 --> 05:21:40,190

container so uh

3499

05:21:44,150 --> 05:21:42,180

anything else that I can put it in the

3500

05:21:46,490 --> 05:21:44,160

cable bag other than the

3501
05:21:51,430 --> 05:21:46,500
bean bag you can also clean up that

3502
05:21:51,440 --> 05:22:16,010
okay we'll do that

3503
05:22:20,810 --> 05:22:18,250
foreign

3504
05:22:23,930 --> 05:22:20,820
astronaut Nicole man is making her way

3505
05:22:26,510 --> 05:22:23,940
out to the 1B power Channel

3506
05:22:30,050 --> 05:22:26,520
they were at the 1A site that's where

3507
05:22:32,270 --> 05:22:30,060
they spent the majority of their space

3508
05:22:34,250 --> 05:22:32,280
walking time today thus far the majority

3509
05:22:35,930 --> 05:22:34,260
of the four hours and four and a half

3510
05:22:37,490 --> 05:22:35,940
hours that they've spent out there now

3511
05:22:38,990 --> 05:22:37,500
you can see one a kind of towards the

3512
05:22:41,990 --> 05:22:39,000
top of your screen there and the yellow

3513
05:22:43,610 --> 05:22:42,000

she's making her way now to 1B just so

3514

05:22:54,470 --> 05:22:43,620

you kind of get a visualization of where

3515

05:22:58,010 --> 05:22:56,750

okay then I'm at the uh let's start on

3516

05:23:00,350 --> 05:22:58,020

the right side

3517

05:23:03,650 --> 05:23:00,360

I'm gonna head out for the system

3518

05:23:03,660 --> 05:24:03,708

copy

3519

05:24:25,310 --> 05:24:20,030

uh

3520

05:24:26,570 --> 05:24:25,320

and I put in the kitty and I can also

3521

05:24:35,448 --> 05:24:26,580

GoPro

3522

05:24:40,788 --> 05:24:37,910

koichi for you once you're ready you'll

3523

05:24:42,890 --> 05:24:40,798

be retrieving the apfr and with X from

3524

05:24:45,050 --> 05:24:42,900

with 25 and putting it on your brt

3525

05:25:37,610 --> 05:24:45,060

translating into the starboard seat of

3526
05:25:43,010 --> 05:25:40,670
everyone dude I'm just getting yes let's

3527
05:25:48,830 --> 05:25:43,020
get down welcome

3528
05:25:48,840 --> 05:26:52,970
s but uh I still have to pick it up okay

3529
05:26:52,980 --> 05:26:58,310
pass

3530
05:27:03,050 --> 05:27:00,890
taking a look at your screen the points

3531
05:27:05,810 --> 05:27:03,060
of view from our astronauts on the right

3532
05:27:07,788 --> 05:27:05,820
side koichiwakata is retrieving a

3533
05:27:10,250 --> 05:27:07,798
portable foot restraint

3534
05:27:12,530 --> 05:27:10,260
meanwhile on the left okay guys big

3535
05:27:14,750 --> 05:27:12,540
picture update for you both here Duke

3536
05:27:17,330 --> 05:27:14,760
once you have that scoop installed we're

3537
05:27:19,550 --> 05:27:17,340
actually going to have you wire tie the

3538
05:27:21,170 --> 05:27:19,560

Cable Bundle to the mounting bracket

3539

05:27:22,368 --> 05:27:21,180

similar to what you guys did on the last

3540

05:27:24,230 --> 05:27:22,378

Eva

3541

05:27:26,448 --> 05:27:24,240

just get it sucked to the mounting

3542

05:27:28,868 --> 05:27:26,458

bracket as best you can low profile

3543

05:27:31,750 --> 05:27:28,878

we're about four and a half hours pet

3544

05:27:36,530 --> 05:27:31,760

and so we're looking at a very modified

3545

05:27:38,448 --> 05:27:36,540

apfr uh reconfig here we'll have koichi

3546

05:27:39,830 --> 05:27:38,458

bring that sticky apfr back to the

3547

05:27:42,590 --> 05:27:39,840

seated cart

3548

05:27:44,750 --> 05:27:42,600

and then Duke will have you meet koichi

3549

05:27:45,890 --> 05:27:44,760

at the seat of carts and we'll make a

3550

05:27:48,350 --> 05:27:45,900

plan from there

3551
05:27:50,448 --> 05:27:48,360
but we will not be having you go further

3552
05:27:54,830 --> 05:27:50,458
outward after that most likely we'll be

3553
05:27:54,840 --> 05:27:57,610
yeah

3554
05:28:01,670 --> 05:28:00,170
and then we could talk about cables

3555
05:28:03,170 --> 05:28:01,680
perfect

3556
05:28:05,090 --> 05:28:03,180
so yeah we won't be having you go

3557
05:28:12,890 --> 05:28:05,100
outward starboard again but we do want

3558
05:28:12,900 --> 05:28:28,070
give me the copies

3559
05:28:32,270 --> 05:28:30,590
those words from NASA astronaut and Xena

3560
05:28:34,850 --> 05:28:32,280
Cardman up to our space walking

3561
05:28:37,610 --> 05:28:34,860
astronauts Nicole man has brought out

3562
05:28:40,128 --> 05:28:37,620
her Cable Bundle out to the 1B work site

3563
05:28:42,350 --> 05:28:40,138

rather than doing what she did at the 1A

3564

05:28:45,470 --> 05:28:42,360

work site and kind of routing them and

3565

05:28:47,030 --> 05:28:45,480

wire tying them neatly instead she's

3566

05:28:48,830 --> 05:28:47,040

going to take the whole bundle and keep

3567

05:29:04,510 --> 05:28:48,840

it in place there for future space

3568

05:29:08,930 --> 05:29:06,590

meanwhile they do indeed want

3569

05:29:10,490 --> 05:29:08,940

koichiwakada to Stow that portable foot

3570

05:29:13,128 --> 05:29:10,500

restraint that gave them trouble during

3571

05:29:15,890 --> 05:29:13,138

the last spacewalk onto a seatacart

3572

05:29:18,948 --> 05:29:15,900

cedar cart meaning crew equipment

3573

05:29:21,948 --> 05:29:18,958

translation Aid cart it's essentially an

3574

05:29:24,410 --> 05:29:21,958

equipment Locker an area outside of the

3575

05:29:26,330 --> 05:29:24,420

space station where they can store uh

3576

05:29:28,310 --> 05:29:26,340

spare parts that looks great in your

3577

05:29:29,990 --> 05:29:28,320

heck of you so we'll have to just use

3578

05:29:32,090 --> 05:29:30,000

one of the integral wire ties that's

3579

05:29:34,070 --> 05:29:32,100

already on the Cable Bundle and use that

3580

05:29:46,970 --> 05:29:34,080

to help tend the cable to the mounting

3581

05:29:46,980 --> 05:29:51,288

you can still

3582

05:29:51,298 --> 05:29:58,430

see from duke we're good with that plan

3583

05:30:02,868 --> 05:30:00,890

please and I picked up

3584

05:30:04,190 --> 05:30:02,878

I read it to the uh

3585

05:30:08,270 --> 05:30:04,200

extender

3586

05:30:13,368 --> 05:30:10,670

I'm gonna Translate

3587

05:30:21,410 --> 05:30:13,378

happy you'll be heading inboard to the

3588

05:30:26,150 --> 05:30:23,510

some more directional cues though going

3589

05:30:37,390 --> 05:30:26,160

inboard or towards the center of the

3590

05:31:15,310 --> 05:30:39,410

a little bit

3591

05:31:28,868 --> 05:31:19,368

db2 tcv sweep from five to six

3592

05:31:28,878 --> 05:31:38,750

wakata on the move once again

3593

05:31:46,190 --> 05:31:40,490

yeah if you can get that wire tie on the

3594

05:31:49,970 --> 05:31:47,690

okay yeah I think that's easy enough

3595

05:31:53,150 --> 05:31:49,980

perfect

3596

05:31:54,890 --> 05:31:53,160

a is in possession of that apfr that

3597

05:31:56,570 --> 05:31:54,900

portable foot restraint and is on his

3598

05:32:36,110 --> 05:31:56,580

way to that seat of cart where he can

3599

05:32:43,368 --> 05:32:39,410

okay I see uh Dukes faced each other so

3600

05:32:49,610 --> 05:32:43,378

I'm going about it be good

3601
05:32:53,150 --> 05:32:51,470
we're in a brief Communications hand

3602
05:32:55,250 --> 05:32:53,160
over here in Mission Control we expect

3603
05:33:40,310 --> 05:32:55,260
to get our video back shortly we're

3604
05:33:40,320 --> 05:33:49,628
foreign

3605
05:33:55,730 --> 05:33:53,030
as we come out of this Handover period

3606
05:33:57,650 --> 05:33:55,740
and we regain our video uh it'll slight

3607
05:33:59,750 --> 05:33:57,660
we'll get a slightly better view when

3608
05:34:01,910 --> 05:33:59,760
we're back as the International Space

3609
05:34:04,010 --> 05:34:01,920
Station is beginning to enter an orbital

3610
05:34:45,590 --> 05:34:04,020
daytime we expect that pretty shortly

3611
05:34:45,600 --> 05:34:50,448
okay uh

3612
05:34:56,628 --> 05:34:54,350
and at the Anchor Point

3613
05:34:59,270 --> 05:34:56,638

and I'm going to translate continue to

3614

05:34:59,280 --> 05:35:03,368

average feeder card

3615

05:35:57,288 --> 05:35:05,990

I I'm with you for a few minutes it

3616

05:36:02,090 --> 05:35:59,570

how's it going dude

3617

05:36:04,250 --> 05:36:02,100

girl I just got my three twists on the

3618

05:36:05,448 --> 05:36:04,260

lower right for the cables and it looks

3619

05:36:08,390 --> 05:36:05,458

like the

3620

05:36:11,448 --> 05:36:08,400

coming up okay got a pretty here on the

3621

05:36:13,730 --> 05:36:11,458

very end of the station very nice

3622

05:36:17,810 --> 05:36:13,740

I'm translating towards the yes stopper

3623

05:36:19,310 --> 05:36:17,820

video card now with uh with an AP bar

3624

05:36:21,050 --> 05:36:19,320

extensions

3625

05:36:22,990 --> 05:36:21,060

okay so if you're happy with these

3626

05:36:35,570 --> 05:36:23,000

tables I'm gonna

3627

05:36:39,590 --> 05:36:37,610

yep Duke we're happy with that plan and

3628

05:36:44,090 --> 05:36:39,600

please pick up the cable bag on your way

3629

05:36:53,770 --> 05:36:50,868

okay

3630

05:36:56,990 --> 05:36:53,780

[Music]

3631

05:36:59,330 --> 05:36:57,000

I'm going to do with one

3632

05:37:01,070 --> 05:36:59,340

that's affirmative still the with x in

3633

05:37:02,150 --> 05:37:01,080

starboard seated with number one and

3634

05:37:04,670 --> 05:37:02,160

I'll give you the numbers when you're

3635

05:37:04,680 --> 05:37:37,448

okay

3636

05:37:41,810 --> 05:37:39,410

if you're just joining us you're

3637

05:37:43,430 --> 05:37:41,820

watching a space walk outside of the

3638

05:37:45,770 --> 05:37:43,440

International Space Station with our

3639

05:37:50,090 --> 05:37:45,780

space Walkers koichiwakata and Nicole

3640

05:37:53,330 --> 05:37:50,100

Mann we are about four hours 38 minutes

3641

05:37:56,890 --> 05:37:53,340

in to our spacewalk today the main

3642

05:37:59,868 --> 05:37:56,900

objective finish construction of the 1A

3643

05:38:02,208 --> 05:37:59,878

irosa mon kit so what does this mean

3644

05:38:04,868 --> 05:38:02,218

well the International Space Station is

3645

05:38:08,390 --> 05:38:04,878

undergoing some power upgrades

3646

05:38:11,330 --> 05:38:08,400

including adding some rollout solar rays

3647

05:38:14,810 --> 05:38:11,340

they roll out like a rug sort of on top

3648

05:38:17,150 --> 05:38:14,820

of the existing rigid regular arrays

3649

05:38:20,208 --> 05:38:17,160

that have been there for a while

3650

05:38:22,250 --> 05:38:20,218

it's but these rollout solar arrays are

3651

05:38:23,690 --> 05:38:22,260

very powerful they're very efficient so

3652

05:38:25,550 --> 05:38:23,700

even though they're kind of overlaying

3653

05:38:27,050 --> 05:38:25,560

the top of the rigid arrays it's

3654

05:38:31,190 --> 05:38:27,060

actually going to result in more power

3655

05:38:32,990 --> 05:38:31,200

generation but before these solar rays

3656

05:38:34,788 --> 05:38:33,000

can be installed

3657

05:38:36,288 --> 05:38:34,798

um the astronauts need to do some

3658

05:38:38,868 --> 05:38:36,298

construction outside of the space

3659

05:38:41,270 --> 05:38:38,878

station we call them mod kits it's

3660

05:38:44,030 --> 05:38:41,280

consists of six struts and a mounting

3661

05:38:47,470 --> 05:38:44,040

bracket that these solar panels can sit

3662

05:38:52,190 --> 05:38:49,730

and that's what they've completed today

3663

05:38:55,310 --> 05:38:52,200

they began their tasks back in January

3664

05:38:57,948 --> 05:38:55,320

20th and Nicole man okay because you're

3665

05:38:59,868 --> 05:38:57,958

ready to copy for the uh ready yep

3666

05:39:01,730 --> 05:38:59,878

Nicole Manning okay so are you looking

3667

05:39:03,890 --> 05:39:01,740

forward to have completed its

3668

05:39:06,230 --> 05:39:03,900

construction today they're also doing

3669

05:39:08,930 --> 05:39:06,240

some additional tasks

3670

05:39:11,270 --> 05:39:08,940

um Nicole man just brought some cables

3671

05:39:14,090 --> 05:39:11,280

out to the 1B power Channel

3672

05:39:16,310 --> 05:39:14,100

and koichi's working on bringing an a

3673

05:39:21,530 --> 05:39:16,320

sticky portable foot restraint

3674

05:39:26,570 --> 05:39:24,350

okay 11 and Alpha

3675

05:40:36,530 --> 05:39:26,580

oh wow

3676

05:40:36,540 --> 05:40:43,190

okay not engage on the

3677

05:40:43,200 --> 05:40:51,530

Luigi yeah we see that in your hecca

3678

05:41:01,670 --> 05:40:55,970

it was 2006 picking up my Greenhouse

3679

05:41:05,208 --> 05:41:04,250

you know any suggestions it looks like

3680

05:41:10,310 --> 05:41:05,218

it's uh

3681

05:41:15,230 --> 05:41:13,310

okay copy koichi yeah it looks in but I

3682

05:41:19,910 --> 05:41:15,240

also see the locking collar is not black

3683

05:41:25,850 --> 05:41:22,128

if it helps you can take it out and go

3684

05:41:28,070 --> 05:41:25,860

in with a little bit more Force

3685

05:41:31,310 --> 05:41:28,080

oh it looks black on black in your

3686

05:41:35,350 --> 05:41:31,320

headphones yeah

3687

05:41:40,070 --> 05:41:37,910

good twist set

3688

05:41:41,150 --> 05:41:40,080

okay looks like it did outstanding

3689

05:41:43,850 --> 05:41:41,160

confirm

3690

05:41:46,910 --> 05:41:43,860

yeah it looks good in your haircut to me

3691

05:41:50,090 --> 05:41:46,920

okay so if you've got that okay set at

3692

05:41:53,390 --> 05:41:50,100

11 Alpha and an extension of one then we

3693

05:41:58,490 --> 05:41:55,788

okay we have an alpha

3694

05:42:00,170 --> 05:41:58,500

on the right of your screen his point of

3695

05:42:02,390 --> 05:42:00,180

view he's at the cedar cart right now

3696

05:42:04,610 --> 05:42:02,400

you see the word Sita too you can

3697

05:42:07,128 --> 05:42:04,620

continue and he's in the process of

3698

05:42:08,990 --> 05:42:07,138

stowing the portable foot restraint it

3699

05:42:10,670 --> 05:42:09,000

looks like he got it connected again

3700

05:42:12,708 --> 05:42:10,680

it's kind of just a locker where you can

3701
05:42:15,830 --> 05:42:12,718
keep spare parts and retrieve them as

3702
05:42:27,288 --> 05:42:15,840
needed outside of the space station

3703
05:42:31,070 --> 05:42:29,330
and just to remind you since I'm picking

3704
05:42:35,868 --> 05:42:31,080
up where Drew left off here Duke you'll

3705
05:42:35,878 --> 05:42:48,590
okay

3706
05:43:30,890 --> 05:42:52,970
uh 2003 I'm crossing over

3707
05:43:40,730 --> 05:43:35,330
okay with zero one eleven o'clock

3708
05:43:45,230 --> 05:43:44,030
perfect you will now roll and yaw the

3709
05:43:46,368 --> 05:43:45,240
apfr

3710
05:43:49,368 --> 05:43:46,378
you're going to

3711
05:43:53,030 --> 05:43:49,378
pop a pop of box six and clocking should

3712
05:43:53,040 --> 05:43:59,948
6

3713
05:44:05,690 --> 05:44:02,628

koichiwakata now at the scenic heart

3714

05:44:39,490 --> 05:44:05,700

maneuvering the portable foot restraint

3715

05:44:44,448 --> 05:44:42,230

earlier in the spacewalk koichiwakata

3716

05:44:46,250 --> 05:44:44,458

and Nicole man finished construction of

3717

05:44:49,310 --> 05:44:46,260

a support structure that will house on

3718

05:44:51,288 --> 05:44:49,320

iroso or roll out solar array launching

3719

05:44:53,208 --> 05:44:51,298

later this summer they've totally

3720

05:44:55,368 --> 05:44:53,218

completed construction this was at the

3721

05:44:56,990 --> 05:44:55,378

1A powered Channel and during their

3722

05:44:59,448 --> 05:44:57,000

previous spacewalk they completed work

3723

05:45:02,030 --> 05:44:59,458

on the 1B power Channel

3724

05:45:03,708 --> 05:45:02,040

uh just before this kuichiwakata had

3725

05:45:06,530 --> 05:45:03,718

completed the cleanup of some

3726

05:45:08,690 --> 05:45:06,540

multi-layer insulation putting a pit pin

3727

05:45:11,150 --> 05:45:08,700

back in there closing up the insulation

3728

05:45:13,070 --> 05:45:11,160

getting it nice and protected against

3729

05:45:15,410 --> 05:45:13,080

the elements of space

3730

05:45:17,930 --> 05:45:15,420

right now not on screen Nicole Mann is

3731

05:45:21,110 --> 05:45:17,940

wrapping up bringing some cables out to

3732

05:45:24,110 --> 05:45:21,120

the 1B power Channel while kuichi here

3733

05:45:26,868 --> 05:45:24,120

right on your screen is working on a

3734

05:45:31,548 --> 05:45:26,878

articulating portable foot restraint on

3735

05:45:31,558 --> 05:45:35,270

ah

3736

05:45:39,670 --> 05:45:37,910

this task that he's doing here sets them

3737

05:45:43,128 --> 05:45:39,680

up in a good position

3738

05:45:46,368 --> 05:45:43,138

for the irosa

3739

05:45:47,868 --> 05:45:46,378

installation so the solar panels won't

3740

05:45:49,850 --> 05:45:47,878

be launched until this summer and when

3741

05:45:51,890 --> 05:45:49,860

they're ready to be installed this

3742

05:45:53,750 --> 05:45:51,900

portable foot restraint is already in a

3743

05:46:27,288 --> 05:45:53,760

good position for them to use during

3744

05:46:27,298 --> 05:46:32,650

okay um

3745

05:46:38,628 --> 05:46:36,770

six from the AJ fire complete with the

3746

05:46:41,750 --> 05:46:38,638

English State captain

3747

05:46:48,470 --> 05:46:41,760

okay copy papa papa papa fox six that's

3748

05:46:54,170 --> 05:46:50,650

okay

3749

05:46:56,690 --> 05:46:54,180

you head to the Anchor Hooks and be

3750

05:46:58,250 --> 05:46:56,700

ready to meet Duke when she arrives

3751

05:47:00,530 --> 05:46:58,260

there with the cable bag

3752

05:47:04,730 --> 05:47:00,540

we'll have her pass off the cable bag to

3753

05:47:15,890 --> 05:47:12,890

y

3754

05:47:26,150 --> 05:47:15,900

back around

3755

05:47:31,670 --> 05:47:28,730

and big picture koichi once you get that

3756

05:47:34,070 --> 05:47:31,680

cable bag and take it to the airlock

3757

05:47:36,530 --> 05:47:34,080

Duke we're gonna have you head out to P6

3758

05:47:38,628 --> 05:47:36,540

for that P6 apfr

3759

05:47:40,310 --> 05:47:38,638

and then koichi you can head back out

3760

05:47:43,730 --> 05:47:40,320

and we'll have you do the Ingress Aid

3761

05:47:43,740 --> 05:48:09,830

great puppy

3762

05:48:14,448 --> 05:48:12,590

our space Walkers work together in

3763

05:48:16,250 --> 05:48:14,458

support of building that support

3764

05:48:18,410 --> 05:48:16,260

structure and then went their separate

3765

05:48:20,390 --> 05:48:18,420

ways to do their own tasks the

3766

05:48:56,110 --> 05:48:20,400

spacewalkers are now working to meet up

3767

05:49:26,390 --> 05:48:58,610

the hook

3768

05:49:30,830 --> 05:49:28,788

Christina can I make your Duke here at

3769

05:49:32,810 --> 05:49:30,840

the anchors okay hey from koichi yeah

3770

05:49:36,110 --> 05:49:32,820

we'll have you hang out there Duke's on

3771

05:49:39,350 --> 05:49:36,120

her way with the cable bag okay

3772

05:49:41,330 --> 05:49:39,360

see that kuichi has reached his

3773

05:49:42,730 --> 05:49:41,340

Rendezvous point and Nicole Mann is

3774

05:49:47,890 --> 05:49:42,740

making his way over to him to hand

3775

05:49:55,670 --> 05:49:51,470

if you're okay with that

3776

05:49:55,680 --> 05:50:17,448

okay

3777

05:50:22,010 --> 05:50:19,368

yeah

3778

05:50:24,410 --> 05:50:22,020

just to confirm are you seeing a

3779

05:50:29,470 --> 05:50:24,420

different clocking on the scoop or are

3780

05:50:29,480 --> 05:50:36,590

the outboard the rocket

3781

05:50:36,600 --> 05:50:41,650

and it moved

3782

05:50:47,330 --> 05:50:45,110

so then I was second guessing myself

3783

05:50:48,650 --> 05:50:47,340

so I can take a look at it now or if you

3784

05:51:01,430 --> 05:50:48,660

want to just make a note when they come

3785

05:51:06,110 --> 05:51:03,410

do you think you can see it from where

3786

05:51:08,510 --> 05:51:06,120

you are just to get eyes on and verify

3787

05:51:10,070 --> 05:51:08,520

that it's actually locked I know I

3788

05:51:19,690 --> 05:51:10,080

looked it I couldn't tell I mean it

3789

05:51:24,110 --> 05:51:22,788

a little more and it kind of like this

3790

05:51:26,270 --> 05:51:24,120

you know like that little satisfied

3791

05:51:32,750 --> 05:51:26,280

switch so I don't recall from this one

3792

05:51:40,610 --> 05:51:34,970

okay Duke on second thought we will have

3793

05:51:45,048 --> 05:51:41,570

okay

3794

05:51:45,058 --> 05:51:57,370

yep

3795

05:51:57,380 --> 05:52:03,530

[Applause]

3796

05:52:03,540 --> 05:52:07,490

should I get the cable bag

3797

05:52:10,910 --> 05:52:09,650

uichi let's have you grab the cable bag

3798

05:52:12,948 --> 05:52:10,920

actually

3799

05:52:14,570 --> 05:52:12,958

well Duke does that double check and

3800

05:52:17,390 --> 05:52:14,580

then you can bring the cable bag to the

3801
05:52:39,048 --> 05:52:19,250
okay

3802
05:52:42,948 --> 05:52:41,270
this is a bit of a delicate dance as

3803
05:52:45,230 --> 05:52:42,958
koichiwakata makes his way over to

3804
05:52:47,090 --> 05:52:45,240
Nicole man to grab a cable bag as you

3805
05:52:49,310 --> 05:52:47,100
can imagine there each have several

3806
05:52:50,750 --> 05:52:49,320
tethers connecting them to the

3807
05:52:54,470 --> 05:52:50,760
International Space Station and they

3808
05:53:01,010 --> 05:52:58,128
okay thanks for the heads up

3809
05:53:03,410 --> 05:53:01,020
Houston confers

3810
05:53:05,330 --> 05:53:03,420
and let's just have you pause for one

3811
05:53:07,670 --> 05:53:05,340
moment before Duke gets on the mod kit

3812
05:53:12,830 --> 05:53:07,680
we'll need to have crew get off of the

3813
05:53:12,840 --> 05:53:16,368

right here

3814

05:53:16,378 --> 05:53:21,288

again I can continue to translate right

3815

05:53:26,810 --> 05:53:24,470

a firm kuichi you can translate and just

3816

05:53:30,948 --> 05:53:26,820

be extra cautious of Duke's safety

3817

05:53:33,590 --> 05:53:30,958

tether it is coming away uh from

3818

05:53:35,390 --> 05:53:33,600

structure toward her so your feet are

3819

05:53:38,150 --> 05:53:35,400

running over top of it right now I

3820

05:53:43,070 --> 05:53:38,160

recommend getting a fair lead on it if

3821

05:53:49,190 --> 05:53:45,830

okay I

3822

05:53:56,510 --> 05:53:49,200

go to Phoenix right

3823

05:53:56,520 --> 05:54:07,310

okay Gucci

3824

05:54:10,910 --> 05:54:09,470

once koichiwakata has that cable bag

3825

05:54:12,770 --> 05:54:10,920

he's gonna make his way over to the

3826
05:54:25,610 --> 05:54:12,780
airlock where the spacewalk began today

3827
05:54:25,620 --> 05:54:34,788
ass

3828
05:54:39,770 --> 05:54:37,250
all right Duke you're good to go

3829
05:54:42,350 --> 05:54:39,780
let's get eyes on that scoop as fast as

3830
05:54:42,360 --> 05:54:52,670
all right I'm continuing

3831
05:54:57,230 --> 05:54:54,530
in puichi just

3832
05:54:59,270 --> 05:54:57,240
watch out for that tether you're going

3833
05:55:07,070 --> 05:54:59,280
back and forth underneath Duke's safety

3834
05:55:12,708 --> 05:55:09,708
I'm going to uh they'll eat on the two

3835
05:55:15,530 --> 05:55:12,718
two one three or two two one four

3836
05:55:18,170 --> 05:55:15,540
Luigi I think the best plan of action is

3837
05:55:21,288 --> 05:55:18,180
for you to back out the way you came

3838
05:55:23,330 --> 05:55:21,298

we're concerned about our safety tethers

3839

05:55:26,570 --> 05:55:23,340

and a big tangle here we're at about

3840

05:55:29,810 --> 05:55:26,580

five hours t-e-t so we want to avoid any

3841

05:55:32,830 --> 05:55:29,820

safety testing process copy that

3842

05:55:36,530 --> 05:55:32,840

copy that so let's

3843

05:55:39,110 --> 05:55:36,540

try to be over this is better right yeah

3844

05:55:41,090 --> 05:55:39,120

you are over Duke's tether and now you

3845

05:55:43,430 --> 05:55:41,100

are also under Duke's tether so you'll

3846

05:55:44,990 --> 05:55:43,440

have to come back from underneath each

3847

05:55:48,048 --> 05:55:45,000

other

3848

05:55:50,570 --> 05:55:48,058

in order to cross back over along the

3849

05:55:53,990 --> 05:55:50,580

cedar rail

3850

05:55:59,390 --> 05:55:57,010

okay I'll come back underneath

3851
05:56:00,470 --> 05:55:59,400
the scoop is good thanks for letting me

3852
05:56:02,390 --> 05:56:00,480
double check that

3853
05:56:03,890 --> 05:56:02,400
stuff it's going to help with save each

3854
05:56:05,448 --> 05:56:03,900
other routing I could come down the

3855
05:56:08,868 --> 05:56:05,458
right side of the market

3856
05:56:11,448 --> 05:56:08,878
because let's have you stand by there I

3857
05:56:12,948 --> 05:56:11,458
think actually having you head back down

3858
05:56:15,170 --> 05:56:12,958
the way you came is the best course of

3859
05:56:18,350 --> 05:56:15,180
action we choose just about free of your

3860
05:56:24,830 --> 05:56:20,090
okay okay

3861
05:56:24,840 --> 05:56:34,070
okay I am approaching the crossing point

3862
05:56:39,590 --> 05:56:37,250
stop it Gucci

3863
05:56:41,750 --> 05:56:39,600

okay so uh

3864

05:56:45,650 --> 05:56:41,760

can I keep coming back to the Anchor

3865

05:56:47,510 --> 05:56:45,660

Point that's perfect okay okay on

3866

05:56:50,390 --> 05:56:47,520

Twitter we like you there or have you

3867

05:56:51,770 --> 05:56:50,400

just paused there for a moment and you

3868

05:56:54,110 --> 05:56:51,780

can get back in a normal body

3869

05:56:56,868 --> 05:56:54,120

orientation Duke you can come off of the

3870

05:56:59,208 --> 05:56:56,878

mod kit now grab the cable bag

3871

05:57:02,930 --> 05:56:59,218

and we'll have you both head and board

3872

05:57:02,940 --> 05:57:05,990

no problem

3873

05:57:10,030 --> 05:57:07,670

together

3874

05:57:12,890 --> 05:57:10,040

actually this orientation is better for

3875

05:57:22,850 --> 05:57:12,900

safety better monitoring so I will spray

3876

05:57:27,288 --> 05:57:24,650

about me

3877

05:57:30,770 --> 05:57:27,298

further relatives

3878

05:57:33,650 --> 05:57:30,780

on your left side and now uh

3879

05:57:35,110 --> 05:57:33,660

three now it's on your right there

3880

05:57:42,830 --> 05:57:35,120

right side

3881

05:57:44,510 --> 05:57:42,840

oh it's getting there okay guys in the

3882

05:57:46,610 --> 05:57:44,520

middle we're happy with the safety

3883

05:57:49,430 --> 05:57:46,620

tether routing at this point koichi we

3884

05:57:51,590 --> 05:57:49,440

can have you actually head back in board

3885

05:57:55,490 --> 05:57:51,600

to the Anchor Hooks and we'll have Duke

3886

05:57:55,500 --> 05:58:03,190

okay

3887

05:58:06,350 --> 05:58:05,810

sorry about

3888

05:58:10,850 --> 05:58:06,360

the

3889

05:58:10,860 --> 05:58:26,330

sounds good

3890

05:58:30,708 --> 05:58:29,270

the left of your screen in Nicole man's

3891

05:58:32,330 --> 05:58:30,718

point of view you can see the cable bag

3892

05:58:33,770 --> 05:58:32,340

that we're talking about she's going to

3893

05:58:58,490 --> 05:58:33,780

hand it off to koichi so he could go

3894

05:58:58,500 --> 05:59:02,390

okay

3895

05:59:06,948 --> 05:59:04,850

coffee Gucci we'll have you just hang

3896

05:59:09,288 --> 05:59:06,958

out there for a moment and Duke will

3897

05:59:10,970 --> 05:59:09,298

meet you with the cable back okay and

3898

05:59:13,610 --> 05:59:10,980

then we'll have you heading inboard

3899

05:59:18,350 --> 05:59:16,010

I'll do that

3900

05:59:19,730 --> 05:59:18,360

okay I've got the bag on my VIP just

3901
05:59:23,390 --> 05:59:19,740
releasing some structure and I'll be

3902
05:59:28,010 --> 05:59:25,970
and after that I can go

3903
05:59:31,128 --> 05:59:28,020
through the analog install the cable bag

3904
05:59:33,890 --> 05:59:31,138
is that right we have you stowed that

3905
05:59:35,930 --> 05:59:33,900
cable bag in the airlock

3906
05:59:39,530 --> 05:59:35,940
and then you can pop back out of the

3907
05:59:41,570 --> 05:59:39,540
airlock you'll put down a waste tether

3908
05:59:46,730 --> 05:59:41,580
and lock that waist tether and then

3909
05:59:50,390 --> 05:59:49,368
okay all right they'll come back to the

3910
05:59:52,128 --> 05:59:50,400
uh

3911
05:59:55,128 --> 05:59:52,138
your card

3912
05:59:57,350 --> 05:59:55,138
negative not yet we'll have to clean up

3913
05:59:59,390 --> 05:59:57,360

the slingshot first so just get back to

3914

06:00:01,610 --> 05:59:59,400

the airlock and you'll put your waste

3915

06:00:04,128 --> 06:00:01,620

tether on the airlock steering extender

3916

06:00:05,090 --> 06:00:04,138

Stow that crew lock via cable bag in the

3917

06:00:07,128 --> 06:00:05,100

crew lock

3918

06:00:08,570 --> 06:00:07,138

and then we'll have some further

3919

06:00:11,270 --> 06:00:08,580

instructions for cleaning up the

3920

06:00:11,280 --> 06:00:47,690

okay copy that

3921

06:00:47,700 --> 06:01:10,250

you're back okay

3922

06:01:10,260 --> 06:01:15,530

now five hours into the spacewalk

3923

06:01:20,810 --> 06:01:18,010

Nicole Mann is in the process of handing

3924

06:01:23,030 --> 06:01:20,820

koichiwakata a cable bag it's not as

3925

06:01:24,650 --> 06:01:23,040

simple as just handing it over you can

3926

06:01:27,948 --> 06:01:24,660

see they're on different planes there

3927

06:01:29,868 --> 06:01:27,958

koichi had to move one of his anchor

3928

06:01:32,390 --> 06:01:29,878

hooks to be able to receive it and move

3929

06:01:34,070 --> 06:01:32,400

over to the airlock earlier in our

3930

06:01:36,470 --> 06:01:34,080

coverage we described these anchor hooks

3931

06:01:39,650 --> 06:01:36,480

kind of like rock wall climbing you have

3932

06:01:41,628 --> 06:01:39,660

your ropes tied to one Central Point up

3933

06:01:43,330 --> 06:01:41,638

at the top but you're still free to move

3934

06:01:46,190 --> 06:01:43,340

up down all around

3935

06:01:48,830 --> 06:01:46,200

so he had to reset his anchor hook in

3936

06:01:51,170 --> 06:01:48,840

order to move to the airlock Nicole Mann

3937

06:01:53,750 --> 06:01:51,180

had to do the same thing but also moving

3938

06:01:56,030 --> 06:01:53,760

the cable bag from where it was stowed

3939

06:02:06,048 --> 06:01:56,040

onto her body restraint tether and now

3940

06:02:34,610 --> 06:02:07,610

do that you

3941

06:02:34,620 --> 06:02:42,910

wow

3942

06:03:29,030 --> 06:02:44,990

all right you ready for me to give you

3943

06:03:33,350 --> 06:03:31,850

to accept my rut to it

3944

06:04:02,570 --> 06:03:33,360

okay

3945

06:04:05,510 --> 06:04:02,580

[Applause]

3946

06:04:13,010 --> 06:04:08,448

oh before you take off goody Hill

3947

06:04:19,190 --> 06:04:14,930

don't let me have that spear to you

3948

06:04:19,200 --> 06:04:30,830

they're handing over the bags now

3949

06:04:44,030 --> 06:04:33,410

and there's the bag floating just above

3950

06:04:44,040 --> 06:05:04,628

clothes

3951
06:05:04,638 --> 06:05:10,570
okay Duke's been

3952
06:05:15,650 --> 06:05:12,470
thank you

3953
06:05:15,660 --> 06:05:20,150
hey it's better

3954
06:05:20,160 --> 06:05:26,628
when you go to that theater part

3955
06:05:38,208 --> 06:05:32,048
okay

3956
06:05:41,330 --> 06:05:38,218
copy all guys and with that we'll give

3957
06:05:44,628 --> 06:05:41,340
you a big picture update here so we're

3958
06:05:47,990 --> 06:05:44,638
just over five hours pet we have plenty

3959
06:05:50,030 --> 06:05:48,000
of consumables looking at a about a 740

3960
06:05:51,708 --> 06:05:50,040
pet based on consumables at this point

3961
06:05:56,208 --> 06:05:51,718
so you're doing great

3962
06:05:58,610 --> 06:05:56,218
what we could do is work the P6 apfr

3963
06:06:01,430 --> 06:05:58,620

retrieval that would put us at about

3964

06:06:04,610 --> 06:06:01,440

seven hours pet if that all goes

3965

06:06:08,448 --> 06:06:04,620

smoothly there's always a chance as you

3966

06:06:10,788 --> 06:06:08,458

come back outboard to just pause and not

3967

06:06:12,650 --> 06:06:10,798

go all the way out to P6 or if you make

3968

06:06:15,288 --> 06:06:12,660

it to P6 you can always drop off that

3969

06:06:17,330 --> 06:06:15,298

apfr early in order to head inboard more

3970

06:06:20,150 --> 06:06:17,340

quickly so we'll just be looking for

3971

06:06:23,150 --> 06:06:20,160

your thoughts on that plan koichi while

3972

06:06:26,030 --> 06:06:23,160

Duke does the P6 apfr retrieval you

3973

06:06:29,030 --> 06:06:26,040

could be working the Ingress Aid swap on

3974

06:06:31,610 --> 06:06:29,040

the cedar carts so we'll just take your

3975

06:06:32,930 --> 06:06:31,620

thoughts on how you're feeling in terms

3976

06:06:38,448 --> 06:06:32,940

of energy management and everything

3977

06:06:42,288 --> 06:06:39,788

um

3978

06:06:44,570 --> 06:06:42,298

six and grab that APR phone and

3979

06:06:46,850 --> 06:06:44,580

understand that I can break out uh

3980

06:06:48,708 --> 06:06:46,860

really at any point if uh if for some

3981

06:06:50,690 --> 06:06:48,718

reason it's going wrong

3982

06:06:53,690 --> 06:06:50,700

it works for me what do you think for

3983

06:06:56,390 --> 06:06:53,700

leaking yeah for me the uh seems to be

3984

06:06:58,250 --> 06:06:56,400

good and then the translation of you

3985

06:07:00,530 --> 06:06:58,260

translating to the P6 seems to be a good

3986

06:07:06,770 --> 06:07:03,948

okay perfect we copy all

3987

06:07:09,530 --> 06:07:06,780

so koichi you'll continue inboard

3988

06:07:10,788 --> 06:07:09,540

get that cable bag in the airlock get

3989

06:07:12,770 --> 06:07:10,798

your waste tether hooks up to the

3990

06:07:16,310 --> 06:07:12,780

airlock d-ring extender we'll clean up

3991

06:07:18,470 --> 06:07:16,320

the slingshot and as we work that we

3992

06:07:21,530 --> 06:07:18,480

still have time to just send you both to

3993

06:07:25,490 --> 06:07:21,540

the airlock or for other get ahead tasks

3994

06:07:25,500 --> 06:07:49,610

copy that

3995

06:07:53,810 --> 06:07:52,128

and with words from Xena Cardman our

3996

06:07:55,628 --> 06:07:53,820

space Walkers now have their marching

3997

06:07:58,610 --> 06:07:55,638

orders

3998

06:08:00,948 --> 06:07:58,620

for the rest of the spacewalk uh we're

3999

06:08:03,530 --> 06:08:00,958

about five hours in so far but for the

4000

06:08:06,170 --> 06:08:03,540

remainder akuichiwakata is gonna go drop

4001
06:08:09,470 --> 06:08:06,180
off a cable bag and then swap out some

4002
06:08:11,810 --> 06:08:09,480
Ingress AIDS Ingress AIDS are referring

4003
06:08:13,430 --> 06:08:11,820
to our portable foot restraints kind of

4004
06:08:14,868 --> 06:08:13,440
something that helps you get into these

4005
06:08:17,090 --> 06:08:14,878
portable foot restraints he's going to

4006
06:08:19,490 --> 06:08:17,100
swap out the Ingress aid for those

4007
06:08:22,070 --> 06:08:19,500
meanwhile Nicole man is making her way

4008
06:08:25,910 --> 06:08:22,080
to the far end of the space station P6

4009
06:08:27,948 --> 06:08:25,920
the port 6 truss to retrieve a portable

4010
06:08:30,048 --> 06:08:27,958
foot restraint herself and just bring it

4011
06:08:35,150 --> 06:08:30,058
a little bit closer first for a future

4012
06:08:35,160 --> 06:09:27,830
all right

4013
06:09:34,070 --> 06:09:31,010

okay enough

4014

06:09:35,930 --> 06:09:34,080

opening up the thermal cover

4015

06:09:38,628 --> 06:09:35,940

coffee Gucci

4016

06:09:40,670 --> 06:09:38,638

you can get your waste tether on the

4017

06:09:44,448 --> 06:09:40,680

airlock Deering extender gate closed

4018

06:09:44,458 --> 06:09:59,390

New York

4019

06:10:07,368 --> 06:10:02,090

okay my best place ever

4020

06:10:13,548 --> 06:10:11,030

Taki koichi okay

4021

06:10:16,730 --> 06:10:13,558

and we'll get a check also of the other

4022

06:10:19,430 --> 06:10:16,740

end of that waste tether the small hook

4023

06:10:20,868 --> 06:10:19,440

on your suit during extender okay so

4024

06:10:23,990 --> 06:10:20,878

that's

4025

06:10:27,530 --> 06:10:24,000

okay the best to my left even you can

4026
06:10:31,970 --> 06:10:28,850
perfect

4027
06:10:36,288 --> 06:10:31,980
okay koichi with your go duke can start

4028
06:10:36,298 --> 06:10:41,390
Duke for you that would be released

4029
06:10:46,970 --> 06:10:44,390
you'll release kuichi's ev2 anchor Hook

4030
06:10:49,850 --> 06:10:46,980
from 3011

4031
06:10:55,070 --> 06:10:49,860
stow it on your waste tether with the

4032
06:10:59,690 --> 06:10:58,670
okay I have a right to easy to Anchor

4033
06:11:03,410 --> 06:10:59,700
hook

4034
06:11:07,430 --> 06:11:05,150
copy

4035
06:11:09,650 --> 06:11:07,440
so you'll get that on your waist tether

4036
06:11:23,830 --> 06:11:09,660
with both of the hooks closed locked

4037
06:11:46,610 --> 06:11:25,788
confirm you can get that cable lock

4038
06:11:51,830 --> 06:11:49,128

okay easy tooth anchor hook attached to

4039

06:11:55,310 --> 06:11:51,840

my right each other for fifth Road

4040

06:11:57,530 --> 06:11:55,320

spider Vlogs black on black

4041

06:11:59,390 --> 06:11:57,540

copy and we'll check for your small hook

4042

06:12:06,010 --> 06:11:59,400

as well on your waist tether that it is

4043

06:12:10,070 --> 06:12:08,570

koichiwakata in the airlock now stowing

4044

06:12:12,250 --> 06:12:10,080

the cable bag he just retrieved from

4045

06:12:13,368 --> 06:12:12,260

Nicole Mann

4046

06:12:16,010 --> 06:12:13,378

[Music]

4047

06:12:19,190 --> 06:12:16,020

okay copy Duke with that you can get

4048

06:12:24,410 --> 06:12:19,200

your ev1 anchor Hook from handrail 3217

4049

06:12:24,420 --> 06:13:17,330

foreign

4050

06:13:17,340 --> 06:13:29,930

us

4051
06:13:34,128 --> 06:13:31,850
so you heard some chatter with Nicole

4052
06:13:35,690 --> 06:13:34,138
Mann with our ground IVs in a Cartman

4053
06:13:37,430 --> 06:13:35,700
today here on the ground she's

4054
06:13:39,708 --> 06:13:37,440
configuring her hooks to be in a

4055
06:13:42,230 --> 06:13:39,718
position to go out to the far reaches of

4056
06:13:50,628 --> 06:13:42,240
the space station the port 6 truss to

4057
06:13:50,638 --> 06:14:43,730
foreign

4058
06:14:47,390 --> 06:14:45,510
Direct

4059
06:14:50,930 --> 06:14:47,400
[Music]

4060
06:14:53,330 --> 06:14:50,940
inside of the good luck coffee great

4061
06:14:55,368 --> 06:14:53,340
work koichi we'll have you hang out

4062
06:14:57,410 --> 06:14:55,378
there we still need your waste tether

4063
06:14:59,090 --> 06:14:57,420

locked to the airlock during extender

4064

06:15:03,288 --> 06:14:59,100

well Duke is resetting those anchor

4065

06:15:08,570 --> 06:15:05,530

coming down

4066

06:15:10,430 --> 06:15:08,580

copy Duke and you'll be continuing along

4067

06:15:12,770 --> 06:15:10,440

you're going to be looking for mile

4068

06:15:15,288 --> 06:15:12,780

marker 81.90

4069

06:15:19,670 --> 06:15:15,298

for those new anchor hook locations

4070

06:15:19,680 --> 06:15:29,570

1

4071

06:16:35,948 --> 06:15:31,910

in koichiwakata has successfully stowed

4072

06:16:35,958 --> 06:16:59,628

pass pass

4073

06:17:13,548 --> 06:17:01,910

port

4074

06:17:17,868 --> 06:17:15,770

we're just over five hours and 15

4075

06:17:19,788 --> 06:17:17,878

minutes in today's space walk with NASA

4076
06:17:22,128 --> 06:17:19,798
astronaut Nicole Mann and Japanese

4077
06:17:24,170 --> 06:17:22,138
astronaut koichiwakata

4078
06:17:27,708 --> 06:17:24,180
Nicole Mann is currently resetting some

4079
06:17:27,718 --> 06:17:56,868
quick hand over here guys

4080
06:18:01,670 --> 06:17:59,570
so these anchor hooks were initially set

4081
06:18:04,868 --> 06:18:01,680
when heading to the mod kit work sites

4082
06:18:08,150 --> 06:18:04,878
for the first half of the installation

4083
06:18:09,770 --> 06:18:08,160
of this mod kit now they need to reset

4084
06:18:12,530 --> 06:18:09,780
them to a different location in order

4085
06:18:14,510 --> 06:18:12,540
for Nicole man to reach the port side to

4086
06:18:16,910 --> 06:18:14,520
grab the portable foot restraint

4087
06:18:36,770 --> 06:18:16,920
portable foot restraint from the port 6

4088
06:18:40,310 --> 06:18:38,868

even though we're needing to reset the

4089

06:18:42,650 --> 06:18:40,320

anchor hooks right now in order for

4090

06:18:44,170 --> 06:18:42,660

Nicole man to get to where she is to the

4091

06:18:47,030 --> 06:18:44,180

P6 truss

4092

06:18:49,310 --> 06:18:47,040

after that it's not necessary to reset

4093

06:18:53,628 --> 06:18:49,320

them on her way back as they can reach

4094

06:18:58,610 --> 06:18:55,610

I'm gonna put down our anchors okay

4095

06:19:01,190 --> 06:18:58,620

perfect Duke yep just Nader of mile

4096

06:19:19,730 --> 06:19:01,200

marker 8190 you're looking for s0

4097

06:19:33,920 --> 06:19:21,830

and you'll be putting your ev1 anchor

4098

06:19:33,930 --> 06:19:38,048

[Music]

4099

06:19:40,850 --> 06:19:39,890

black on black

4100

06:19:44,090 --> 06:19:40,860

perfect

4101
06:19:48,708 --> 06:19:44,100
next you can attach koichi's ev2 anchor

4102
06:20:40,610 --> 06:19:48,718
hook to handrail 3531 that's just genus

4103
06:20:51,410 --> 06:20:42,948
okay easy tooth anchor Hook is on a

4104
06:20:55,368 --> 06:20:53,690
the full slide is locked and black on

4105
06:20:57,530 --> 06:20:55,378
black

4106
06:21:00,470 --> 06:20:57,540
copy Duke

4107
06:21:02,990 --> 06:21:00,480
with that kuichi you can release your

4108
06:21:05,270 --> 06:21:03,000
waste tether and get the thermal cover

4109
06:21:07,788 --> 06:21:05,280
closed

4110
06:21:10,250 --> 06:21:07,798
you'll be heading back to the feeder

4111
06:21:10,260 --> 06:21:15,530
okay

4112
06:21:22,490 --> 06:21:18,650
Duke next for you you'll be continuing

4113
06:21:26,090 --> 06:21:22,500

outboard translating to the apfr in P6

4114

06:21:31,850 --> 06:21:28,368

okay

4115

06:21:33,288 --> 06:21:31,860

get all cleaned up here and Nicole Mann

4116

06:21:35,750 --> 06:21:33,298

is on the move after completing another

4117

06:21:38,030 --> 06:21:35,760

item on her checklist of resetting these

4118

06:21:40,610 --> 06:21:38,040

anchors again these anchors were

4119

06:21:42,948 --> 06:21:40,620

originally set as a way to get them to

4120

06:21:45,288 --> 06:21:42,958

the 1A work site where they were working

4121

06:21:47,170 --> 06:21:45,298

on this mod kit this support structure

4122

06:21:49,850 --> 06:21:47,180

that they've been building for these two

4123

06:21:52,010 --> 06:21:49,860

spacewalks but in order for her to do

4124

06:21:53,868 --> 06:21:52,020

this task of going out to the port 6

4125

06:21:55,548 --> 06:21:53,878

truss at the far end of the space

4126

06:21:58,430 --> 06:21:55,558

station to retrieve this portable foot

4127

06:21:59,810 --> 06:21:58,440

restraint they needed to reset these

4128

06:22:01,670 --> 06:21:59,820

anchors put them in a different position

4129

06:22:04,670 --> 06:22:01,680

so she could get out there outboard on

4130

06:22:09,170 --> 06:22:04,680

face one crossing the sarge and dropping

4131

06:22:10,368 --> 06:22:09,180

your green hook at P4 handrail 511

4132

06:22:12,110 --> 06:22:10,378

wow

4133

06:22:19,788 --> 06:22:12,120

okay I'll check in with you when I press

4134

06:22:30,770 --> 06:22:21,288

and there's Nicole man on your screen

4135

06:22:34,850 --> 06:22:32,628

meanwhile kuichiwakata is still at the

4136

06:22:36,830 --> 06:22:34,860

airlock the cable bag he was working

4137

06:22:38,510 --> 06:22:36,840

with is properly stowed and now he's

4138

06:23:00,410 --> 06:22:38,520

working to close the thermal cover of

4139

06:23:05,750 --> 06:23:03,110

okay then a thermal cover is closed I'm

4140

06:24:13,310 --> 06:23:05,760

gonna translate back to Stubborn okay

4141

06:24:19,070 --> 06:24:16,128

hey there

4142

06:24:44,890 --> 06:24:19,080

I'm here I gotta let her down

4143

06:24:50,150 --> 06:24:46,548

again

4144

06:25:03,590 --> 06:24:50,160

that's gonna be P4 handrail five one one

4145

06:26:02,390 --> 06:25:07,250

okay I'm there stopping my Greenhouse

4146

06:26:02,400 --> 06:26:06,470

so the uh the uh

4147

06:26:13,730 --> 06:26:09,170

which they drop is from the one that I

4148

06:26:16,150 --> 06:26:15,110

you're going to be grabbing the

4149

06:26:18,830 --> 06:26:16,160

ingression

4150

06:26:21,110 --> 06:26:18,840

from that sticky apfr that you brought

4151
06:26:23,810 --> 06:26:21,120
inboard and transferring it to another

4152
06:26:26,208 --> 06:26:23,820
apfr that's also on the starboard seated

4153
06:26:28,010 --> 06:26:26,218
cart it's in with four

4154
06:26:32,208 --> 06:26:28,020
okay I see that

4155
06:26:34,730 --> 06:26:32,218
okay Greenhouse is down

4156
06:26:37,730 --> 06:26:34,740
copy Greenhouse Duke next you'll be

4157
06:26:39,288 --> 06:26:37,740
crossing over to iea to the non-radiator

4158
06:26:41,750 --> 06:26:39,298
side

4159
06:27:03,708 --> 06:26:41,760
and at the outboard non-radiator Edge

4160
06:27:09,310 --> 06:27:06,230
not yet I don't see a radiator I'm

4161
06:28:07,250 --> 06:27:09,320
headed off work but Andrew

4162
06:28:12,350 --> 06:28:10,128
koichi once you get the Ingress Aid you

4163
06:28:14,570 --> 06:28:12,360

can take the wire tie from the Ingress

4164

06:28:16,610 --> 06:28:14,580

Aid and sew it in your trash bag and

4165

06:28:19,730 --> 06:28:16,620

then you'll install it on the apron in

4166

06:28:47,410 --> 06:28:19,740

with four it being breastfeed

4167

06:28:47,420 --> 06:28:54,708

[Applause]

4168

06:29:00,830 --> 06:28:56,930

okay before that I will

4169

06:29:15,530 --> 06:29:00,840

attach my wreck to the English

4170

06:29:20,448 --> 06:29:17,270

Gucci will take a glove half and

4171

06:29:20,458 --> 06:29:26,288

okay

4172

06:29:30,948 --> 06:29:28,070

good

4173

06:29:33,410 --> 06:29:30,958

I'll change and have to dry and God

4174

06:29:37,610 --> 06:29:33,420

bless our in place

4175

06:29:37,620 --> 06:29:42,708

thank you

4176
06:29:42,718 --> 06:29:50,350
still in the fetal cards

4177
06:29:55,788 --> 06:29:53,150
yes ma'am

4178
06:30:00,110 --> 06:29:55,798
that's correct so you're going to set

4179
06:30:00,120 --> 06:30:03,590
all three okay

4180
06:30:45,670 --> 06:30:05,208
and we'll take a glove half and Gauntlet

4181
06:30:58,090 --> 06:30:49,070
's gloves are good health is dry as long

4182
06:30:58,100 --> 06:31:07,128
of three

4183
06:31:07,138 --> 06:31:11,510
okay

4184
06:31:20,628 --> 06:31:14,030
copy you can retrieve that apfr and stow

4185
06:31:20,638 --> 06:31:24,910
I think I received the uh

4186
06:31:29,448 --> 06:31:26,690
I'm gonna

4187
06:31:45,048 --> 06:31:29,458
press back

4188
06:32:08,110 --> 06:31:47,810

trash bag is really handy today

4189

06:32:39,948 --> 06:32:11,510

residents if I'm releasing it

4190

06:32:45,770 --> 06:32:42,590

oh this has an Ingress babe I'm gonna

4191

06:32:48,948 --> 06:32:45,780

get that I cleaned up first

4192

06:32:52,730 --> 06:32:51,048

getting live views of Mission Control

4193

06:32:54,410 --> 06:32:52,740

here

4194

06:32:57,490 --> 06:32:54,420

under the direction of flight director

4195

06:33:00,470 --> 06:32:57,500

Chloe Marion she's Consulting with the

4196

06:33:01,970 --> 06:33:00,480

spacewalking team behind her from a

4197

06:33:04,368 --> 06:33:01,980

quick handle getting the rest of the

4198

06:33:31,628 --> 06:33:04,378

tasks planned out for this spacewalk we

4199

06:33:37,310 --> 06:33:34,190

Nicole man has reached her destination

4200

06:33:39,170 --> 06:33:37,320

at the P6 truss again quite far away

4201
06:33:41,868 --> 06:33:39,180
from the center of the space station to

4202
06:33:44,150 --> 06:33:41,878
retrieve a portable foot restraint she

4203
06:33:46,368 --> 06:33:44,160
has it in tow and is now making her way

4204
06:33:49,128 --> 06:33:46,378
back this just helps future space

4205
06:33:50,390 --> 06:33:49,138
Walkers not have to take the time to

4206
06:33:52,128 --> 06:33:50,400
have to go out there during their

4207
06:33:53,690 --> 06:33:52,138
spacewalk really setting us up for

4208
06:33:56,570 --> 06:33:53,700
success for the next one

4209
06:33:59,510 --> 06:33:56,580
I'm going to translate back

4210
06:34:01,070 --> 06:33:59,520
like this I believe it's better collapse

4211
06:34:04,610 --> 06:34:01,080
which is not bended down

4212
06:34:04,620 --> 06:34:10,570
puppy juice that makes sense to me

4213
06:34:34,490 --> 06:34:12,770

I'll just go slow I'm aware that it's

4214

06:34:34,500 --> 06:34:38,990

all right

4215

06:34:42,590 --> 06:34:41,150

we've got our live views back on the

4216

06:34:44,448 --> 06:34:42,600

left of your screen you've seen as

4217

06:35:18,770 --> 06:34:44,458

astronaut Nicole man with that portable

4218

06:35:18,780 --> 06:35:24,470

different

4219

06:35:24,480 --> 06:35:32,708

people in the starboard

4220

06:35:40,910 --> 06:35:35,810

is also setting future spacewalkers up

4221

06:35:45,310 --> 06:35:43,430

he's taking an Ingress Aid of a portable

4222

06:35:48,410 --> 06:35:45,320

photos

4223

06:35:56,350 --> 06:35:48,420

that aprfr whenever you need we're at

4224

06:36:03,590 --> 06:36:00,708

it's not a bad translation but um

4225

06:36:05,750 --> 06:36:03,600

if I decided to swing too much I'm gonna

4226

06:36:07,730 --> 06:36:05,760

take it slow copy all Duke I like that

4227

06:36:14,868 --> 06:36:07,740

plan you did a great job with that

4228

06:36:21,830 --> 06:36:17,690

okay Griffin it is attached to black on

4229

06:36:23,770 --> 06:36:21,840

black a good pull test good twitch depth

4230

06:36:25,910 --> 06:36:23,780

I'm gonna put the best

4231

06:36:27,650 --> 06:36:25,920

on the a

4232

06:36:55,850 --> 06:36:27,660

if you're vibrate

4233

06:37:00,288 --> 06:36:57,948

you can see wakata on your screen now

4234

06:37:02,868 --> 06:37:00,298

installing a short wire tie on the

4235

06:37:04,730 --> 06:37:02,878

Ingress Aid this Ingress great aim goes

4236

06:37:06,288 --> 06:37:04,740

onto the portable foot restraint kind of

4237

06:37:11,570 --> 06:37:06,298

helps the spacewalkers get their feet

4238

06:37:11,580 --> 06:37:34,780

yes

4239

06:37:34,790 --> 06:37:53,208

[Applause]

4240

06:37:53,218 --> 06:38:23,390

come on

4241

06:38:27,110 --> 06:38:25,430

great work both of you we've got plenty

4242

06:38:29,150 --> 06:38:27,120

of time just being nice and deliberate

4243

06:38:34,010 --> 06:38:29,160

as we get you both back in board and

4244

06:38:34,020 --> 06:38:56,868

sounds good sounds good

4245

06:39:02,270 --> 06:39:00,110

as our spacewalkers complete their last

4246

06:39:03,770 --> 06:39:02,280

tasks of the day before cleaning up

4247

06:39:07,010 --> 06:39:03,780

their work sites and heading back into

4248

06:39:08,628 --> 06:39:07,020

the airlock for a job well done if you

4249

06:39:10,970 --> 06:39:08,638

have any questions about what you've

4250

06:39:14,090 --> 06:39:10,980

been seeing today go ahead and put your

4251
06:40:15,010 --> 06:39:14,100
question on social media using ask NASA

4252
06:40:20,510 --> 06:40:16,670
yeah

4253
06:40:20,520 --> 06:40:29,030
copy you both

4254
06:40:35,330 --> 06:40:32,650
and Duke you'll be sorry

4255
06:40:37,548 --> 06:40:35,340
on the AIA

4256
06:40:40,070 --> 06:40:37,558
coffee koichi great work

4257
06:40:42,470 --> 06:40:40,080
Duke for you you'll be heading back to

4258
06:40:44,930 --> 06:40:42,480
that P4 iea

4259
06:40:47,750 --> 06:40:44,940
once you're on the inboard edge of the

4260
06:40:53,270 --> 06:40:47,760
p4iea cross over to the radiator side

4261
06:40:53,280 --> 06:40:57,048
myself

4262
06:41:01,670 --> 06:40:59,208
we got one question on YouTube about

4263
06:41:04,010 --> 06:41:01,680

when these viruses the rollout solar

4264

06:41:06,350 --> 06:41:04,020

arrays will be launching so remember

4265

06:41:07,910 --> 06:41:06,360

that for every irosa or solar array that

4266

06:41:09,948 --> 06:41:07,920

we're adding to the space station that

4267

06:41:11,930 --> 06:41:09,958

has to have a counterpart it's mounting

4268

06:41:14,150 --> 06:41:11,940

bracket that attaches it to the outside

4269

06:41:16,850 --> 06:41:14,160

of the space station so in today's space

4270

06:41:19,610 --> 06:41:16,860

walk we did install that mounting

4271

06:41:21,890 --> 06:41:19,620

bracket to the 1A power Channel and soon

4272

06:41:24,590 --> 06:41:21,900

it'll get paired with an irosa and to

4273

06:41:26,510 --> 06:41:24,600

answer that question on YouTube

4274

06:41:29,150 --> 06:41:26,520

um the irosa will be launching on a

4275

06:41:31,368 --> 06:41:29,160

SpaceX cargo Dragon vehicle

4276

06:41:33,350 --> 06:41:31,378

um during the SpaceX 28 the 28th

4277

06:41:34,610 --> 06:41:33,360

Commercial resupply Services Mission and

4278

06:41:55,070 --> 06:41:34,620

that'll be launching sometime this

4279

06:42:01,070 --> 06:41:56,810

us

4280

06:42:08,208 --> 06:42:01,080

okay please at the bottom of the

4281

06:42:08,218 --> 06:42:11,868

foreign

4282

06:42:15,530 --> 06:42:13,548

copy that's perfect

4283

06:42:25,128 --> 06:42:15,540

and after that looks like the Ingress 8

4284

06:42:31,128 --> 06:42:28,670

okay I didn't get your last bit

4285

06:42:38,868 --> 06:42:31,138

is already packed

4286

06:42:43,430 --> 06:42:41,090

I got another another question this time

4287

06:42:45,170 --> 06:42:43,440

from Twitter from Mike Washington who

4288

06:42:47,868 --> 06:42:45,180

asked about the total duration of the

4289

06:42:50,510 --> 06:42:47,878

spacewalk where 5 hours and 43 minutes

4290

06:42:53,030 --> 06:42:50,520

in so far our spacewalk began at 6 45

4291

06:42:55,850 --> 06:42:53,040

a.m Central Time be expected to go up to

4292

06:42:57,890 --> 06:42:55,860

seven hours pictures of the sticky apfr

4293

06:42:59,470 --> 06:42:57,900

if you could just get some eyes on get

4294

06:43:02,330 --> 06:42:59,480

some good photos see what you can see

4295

06:43:07,430 --> 06:43:02,340

yeah maybe we'll discover something

4296

06:43:07,440 --> 06:43:16,670

copy that

4297

06:43:16,680 --> 06:43:19,510

okay

4298

06:43:24,110 --> 06:43:22,010

Duke great work

4299

06:43:26,390 --> 06:43:24,120

Luigi for you if you see anything that

4300

06:43:28,670 --> 06:43:26,400

looks like an mmod strike

4301

06:43:30,830 --> 06:43:28,680

obviously make sure to keep your hands

4302

06:43:36,708 --> 06:43:30,840

well clear of it don't touch that area

4303

06:43:40,430 --> 06:43:39,350

okay do you have any specific areas that

4304

06:43:42,770 --> 06:43:40,440

you're interested

4305

06:43:45,470 --> 06:43:42,780

well this is that a pitch knob area or

4306

06:43:48,048 --> 06:43:45,480

everywhere

4307

06:43:53,868 --> 06:43:48,058

joint especially and if you see anything

4308

06:43:53,878 --> 06:43:59,030

okay copy that

4309

06:44:07,670 --> 06:44:03,230

visit this night and it's uh I see uh

4310

06:44:11,510 --> 06:44:10,010

survival writing to take pictures but

4311

06:44:13,128 --> 06:44:11,520

though

4312

06:44:14,330 --> 06:44:13,138

I'll try to take pictures as much as

4313

06:44:16,970 --> 06:44:14,340

they can

4314

06:44:18,650 --> 06:44:16,980

copy that's no problem yeah we'll just

4315

06:44:21,890 --> 06:44:18,660

snag a couple photos and then we'll have

4316

06:44:28,250 --> 06:44:21,900

you head inboard to the airlock

4317

06:44:28,260 --> 06:44:36,850

okay

4318

06:44:36,860 --> 06:45:35,628

that's uh

4319

06:45:40,970 --> 06:45:38,628

you can see spacewalker koichi wakata

4320

06:45:43,610 --> 06:45:40,980

there acting as a photographer he's

4321

06:45:46,490 --> 06:45:43,620

documenting this sticky uh portable foot

4322

06:45:48,048 --> 06:45:46,500

restraint pitch joint uh gave them some

4323

06:45:50,150 --> 06:45:48,058

trouble during the last spacewalk so

4324

06:46:35,110 --> 06:45:50,160

he's getting documentation so our ground

4325

06:46:40,010 --> 06:46:38,390

as koichiwakata documents the sticky

4326
06:46:41,750 --> 06:46:40,020
portable foot restraint I want to take

4327
06:46:45,110 --> 06:46:41,760
another question from Twitter this time

4328
06:46:47,690 --> 06:46:45,120
from MK9 who asked what are the next

4329
06:46:50,628 --> 06:46:47,700
steps for the irosa solar array upgrades

4330
06:46:53,628 --> 06:46:50,638
is it 4A and 4B channels remaining to

4331
06:46:55,670 --> 06:46:53,638
have their solar array deployed

4332
06:46:58,250 --> 06:46:55,680
so I want you to take a look at this

4333
06:47:02,150 --> 06:46:58,260
graphic here kind of shows what we've

4334
06:47:04,430 --> 06:47:02,160
done so 4A and 4B that MK9 mentions in

4335
06:47:07,010 --> 06:47:04,440
his or her tweet it's already completed

4336
06:47:09,190 --> 06:47:07,020
house mounting bracket and has solar

4337
06:47:13,448 --> 06:47:09,200
array four are done

4338
06:47:16,128 --> 06:47:13,458

3A 4A 2B and 4B are already deployed

4339

06:47:19,010 --> 06:47:16,138

we've completed the mounting hardware

4340

06:47:21,110 --> 06:47:19,020

for one a and one B all that's left is

4341

06:47:23,150 --> 06:47:21,120

for them to get irosis themselves roll

4342

06:47:25,730 --> 06:47:23,160

out solar arrays so to answer the

4343

06:47:32,510 --> 06:47:25,740

question uh one a and one B are next up

4344

06:47:32,520 --> 06:47:47,270

okay

4345

06:47:53,810 --> 06:47:49,128

and correction on that clocking dupe

4346

06:47:53,820 --> 06:48:01,910

yes eight thank you

4347

06:48:01,920 --> 06:48:36,310

foreign

4348

06:48:41,990 --> 06:48:39,530

a while ago Nicole Mann set out to

4349

06:48:44,390 --> 06:48:42,000

travel out to the port six Trust of the

4350

06:48:47,208 --> 06:48:44,400

International Space Station to grab a

4351

06:48:50,090 --> 06:48:47,218

articulating portable foot restraint she

4352

06:48:52,128 --> 06:48:50,100

has grabbed it and made her way to a

4353

06:48:54,650 --> 06:48:52,138

cedar cart a cedar cart being a sort of

4354

06:48:56,208 --> 06:48:54,660

stowage locker to the outside of the

4355

06:48:58,368 --> 06:48:56,218

International Space Station where they

4356

06:49:00,530 --> 06:48:58,378

can kind of keep and store things as

4357

06:49:02,628 --> 06:49:00,540

they need it and now she's working on

4358

06:49:05,570 --> 06:49:02,638

stowing it onto the cedar card make sure

4359

06:49:08,690 --> 06:49:05,580

that the Ingress Aid isn't going to be

4360

06:49:10,910 --> 06:49:08,700

in the way or anything on structure will

4361

06:49:16,788 --> 06:49:10,920

be in the way of you installing and then

4362

06:49:43,128 --> 06:49:19,788

okay you got it

4363

06:49:46,850 --> 06:49:45,170

yeah I mean I'm still trying to go to

4364

06:49:48,048 --> 06:49:46,860

the other side of the AP farm for the

4365

06:49:50,868 --> 06:49:48,058

next joint

4366

06:50:44,868 --> 06:49:50,878

copy koichi no problem we've got a great

4367

06:50:44,878 --> 06:51:02,410

foreign

4368

06:51:06,948 --> 06:51:04,548

views from both of our space walking

4369

06:51:08,690 --> 06:51:06,958

astronauts we're Midway through an

4370

06:51:10,430 --> 06:51:08,700

orbital night time outside of the

4371

06:51:14,208 --> 06:51:10,440

International Space Station as it flies

4372

06:51:17,930 --> 06:51:16,730

okay then I'll be able to uh hold it

4373

06:51:23,330 --> 06:51:17,940

down

4374

06:51:23,340 --> 06:51:27,230

standby

4375

06:51:32,030 --> 06:51:29,390

I guess

4376

06:51:34,190 --> 06:51:32,040

Luigi we were tracking a possibly a wire

4377

06:51:41,690 --> 06:51:34,200

tie that may have come out of your trash

4378

06:51:41,700 --> 06:52:00,410

it

4379

06:52:06,770 --> 06:52:03,260

still

4380

06:52:10,548 --> 06:52:09,230

I cannot open the

4381

06:52:12,770 --> 06:52:10,558

trash bag

4382

06:52:16,610 --> 06:52:12,780

yeah copy no problem we'll check the

4383

06:52:18,590 --> 06:52:16,620

video koichi where do you see it

4384

06:52:20,810 --> 06:52:18,600

we saw it on the video we think we'll

4385

06:52:23,330 --> 06:52:20,820

check the video we'll find it out you

4386

06:52:25,430 --> 06:52:23,340

might be able to feel the soft fabric

4387

06:52:26,868 --> 06:52:25,440

portion of your trash bag and see if the

4388

06:52:32,690 --> 06:52:26,878

wire tie is still in there but we'll

4389

06:52:36,310 --> 06:52:35,750

and I can feel

4390

06:52:37,850 --> 06:52:36,320

um

4391

06:52:40,128 --> 06:52:37,860

biotype

4392

06:52:43,128 --> 06:52:40,138

looking thing instead of trash bag I

4393

06:52:44,810 --> 06:52:43,138

can't feel it through the glove

4394

06:52:48,670 --> 06:52:44,820

I think

4395

06:52:52,190 --> 06:52:51,110

really yeah it's really difficult to

4396

06:52:58,850 --> 06:52:52,200

tell

4397

06:53:04,368 --> 06:53:02,330

okay and I took uh

4398

06:53:05,810 --> 06:53:04,378

more pictures on the other side of the

4399

06:53:08,930 --> 06:53:05,820

big joint

4400

06:53:38,510 --> 06:53:08,940

any other areas

4401

06:53:42,530 --> 06:53:41,270

okay we're good with pictures on that

4402

06:53:44,990 --> 06:53:42,540

apfr

4403

06:53:47,150 --> 06:53:45,000

so we can have you we'll have you guys

4404

06:53:48,830 --> 06:53:47,160

coordinate we'll take your thoughts on

4405

06:53:50,990 --> 06:53:48,840

whether Duke thinks it might be helpful

4406

06:53:57,890 --> 06:53:51,000

to have a second crew member over there

4407

06:54:03,890 --> 06:54:01,010

okay uh

4408

06:54:07,250 --> 06:54:03,900

okay remember that I'll go to the uh the

4409

06:54:11,330 --> 06:54:09,410

unfortunately has been nine so I just

4410

06:54:16,368 --> 06:54:11,340

need to repop it over to eight and then

4411

06:54:26,270 --> 06:54:18,650

coffee and Duke are you seeing any

4412

06:54:30,468 --> 06:54:28,128

um no actually it looks okay maybe I'll

4413

06:54:32,890 --> 06:54:30,478

try it right now let me let me try right

4414

06:54:38,628 --> 06:54:36,288

so I am black on black I've got a good

4415

06:54:53,330 --> 06:54:38,638

full Swiss ball copy do you find the

4416

06:55:01,190 --> 06:54:58,330

yeah I already uh head that way okay

4417

06:55:15,070 --> 06:55:01,200

because this road it was just difficult

4418

06:55:15,080 --> 06:55:24,468

a firm that would be great yep

4419

06:55:31,030 --> 06:55:27,350

okay Xena do you want me to translate

4420

06:55:36,110 --> 06:55:34,128

we'll have you head to the airlock and

4421

06:55:37,368 --> 06:55:36,120

get connected on the airlock hearing

4422

06:55:41,628 --> 06:55:37,378

extender

4423

06:55:41,638 --> 06:55:44,270

okay

4424

06:55:44,280 --> 06:55:49,910

copy Duke nice work

4425

06:55:49,920 --> 06:56:15,770

great

4426
06:56:15,780 --> 06:56:36,490
foreign

4427
06:56:43,190 --> 06:56:38,930
negative we'll have Duke do that on her

4428
06:56:43,200 --> 06:56:46,190
okay

4429
06:56:59,330 --> 06:56:49,128
for come coming up right on pet of six

4430
06:57:04,070 --> 06:57:02,030
this is Mission Control Houston live

4431
06:57:06,350 --> 06:57:04,080
with coverage of our space walk today

4432
06:57:08,270 --> 06:57:06,360
we're nearing the six hour mark

4433
06:57:10,968 --> 06:57:08,280
our space Walkers are wrapping up their

4434
06:57:13,968 --> 06:57:10,978
tasks for the day

4435
06:57:19,010 --> 06:57:16,968
I messed up some of the uh

4436
06:57:21,708 --> 06:57:19,020
what are the other settings I know

4437
06:57:25,190 --> 06:57:21,718
fox.box I think it's twelve and three

4438
06:57:28,910 --> 06:57:25,200

it'll be papa papa Fox three

4439

06:57:28,920 --> 06:57:42,830

okay I messed up

4440

06:57:42,840 --> 06:57:54,650

okay

4441

06:57:58,490 --> 06:57:56,810

Houston likes that plan just take it

4442

06:58:06,170 --> 06:57:58,500

nice and smooth we'll get you back in

4443

06:58:06,180 --> 06:58:38,448

that sounds good

4444

06:59:22,250 --> 06:58:41,690

I'm coming down on the seat up first

4445

06:59:22,260 --> 06:59:25,968

ass

4446

06:59:25,978 --> 06:59:29,090

off

4447

07:00:03,288 --> 06:59:31,430

NASA astronaut koichiwakata making his

4448

07:00:09,128 --> 07:00:05,468

ETS

4449

07:00:11,810 --> 07:00:09,138

I'm gonna open up the uh

4450

07:00:13,490 --> 07:00:11,820

copy thermal cover once you've got that

4451
07:00:15,650 --> 07:00:13,500
open you can take your waste tether to

4452
07:00:40,310 --> 07:00:15,660
the airlock during extender and gates

4453
07:00:40,320 --> 07:01:01,190
foreign

4454
07:01:01,200 --> 07:01:22,010
copy no problem Duke

4455
07:01:29,448 --> 07:01:25,730
okay uh thing I attached

4456
07:01:32,208 --> 07:01:29,458
I left waited to the airlock during his

4457
07:01:35,810 --> 07:01:32,218
Contender it closed two o'clock black on

4458
07:01:37,490 --> 07:01:35,820
black on the small hook on my left right

4459
07:01:40,190 --> 07:01:37,500
there is attached to my left viewing

4460
07:01:41,628 --> 07:01:40,200
extend the gate close to clock black and

4461
07:01:44,330 --> 07:01:41,638
black

4462
07:01:45,468 --> 07:01:44,340
copy all that's a great config we'll

4463
07:01:47,690 --> 07:01:45,478

have you hang out there for just a

4464

07:01:47,700 --> 07:02:10,090

okay

4465

07:02:10,100 --> 07:02:15,770

I am back at the anchors

4466

07:02:15,780 --> 07:02:21,948

copy Duke

4467

07:02:28,070 --> 07:02:24,468

okay Duke we've got a good load pass

4468

07:02:32,208 --> 07:02:28,080

through kuichi you can Rhett to guiji's

4469

07:02:34,368 --> 07:02:32,218

Anchor hook that's on handrail 3531

4470

07:02:36,170 --> 07:02:34,378

and move it to your waste tether and

4471

07:02:44,990 --> 07:02:36,180

we'll look for both hooks gate close

4472

07:02:50,868 --> 07:02:48,110

now six hours into our space walk today

4473

07:02:54,708 --> 07:02:50,878

our space Walkers wrapping up they're

4474

07:02:55,810 --> 07:02:54,718

getting ready to Ingress or get into the

4475

07:02:58,670 --> 07:02:55,820

airlock

4476

07:03:00,770 --> 07:02:58,680

earlier this morning at 6 45 they

4477

07:03:03,948 --> 07:03:00,780

Ingress to now they're going back into

4478

07:03:35,708 --> 07:03:03,958

the airlock to complete their spacewalk

4479

07:03:40,010 --> 07:03:37,850

this is her point of view right now

4480

07:03:53,448 --> 07:03:40,020

configuring her tethers to also go

4481

07:03:53,458 --> 07:04:23,150

all right

4482

07:04:29,330 --> 07:04:25,490

I didn't choose anchor is attached to my

4483

07:04:34,010 --> 07:04:32,030

don't get close to fight over lost a

4484

07:04:35,628 --> 07:04:34,020

black or black

4485

07:04:37,730 --> 07:04:35,638

copy Duke

4486

07:04:45,048 --> 07:04:37,740

we'll also have you check the other end

4487

07:04:45,058 --> 07:04:49,910

I release my rats is

4488

07:04:49,920 --> 07:04:59,810

copy

4489

07:05:03,048 --> 07:05:01,430

you know how much time do we have Before

4490

07:05:10,430 --> 07:05:03,058

Sunrise

4491

07:05:16,548 --> 07:05:11,990

switch you've got about five minutes

4492

07:05:16,558 --> 07:05:47,410

okay copy that thank you

4493

07:05:47,420 --> 07:05:53,510

can't see it

4494

07:05:56,810 --> 07:05:55,010

copy Duke

4495

07:06:28,788 --> 07:05:56,820

we're great on time

4496

07:06:28,798 --> 07:06:47,690

foreign

4497

07:06:51,048 --> 07:06:49,190

checking not right now we've got your

4498

07:07:00,650 --> 07:06:51,058

hecka but I don't think we have a good

4499

07:07:00,660 --> 07:07:07,340

okay

4500

07:07:37,430 --> 07:07:09,770

[Applause]

4501
07:07:42,288 --> 07:07:39,948
the point of view of NASA astronaut

4502
07:07:43,570 --> 07:07:42,298
Nicole Mann on your screen now she's

4503
07:07:46,548 --> 07:07:43,580
working to commit

4504
07:07:48,410 --> 07:07:46,558
tethers in a way that she can get inside

4505
07:07:49,670 --> 07:07:48,420
of the airlock

4506
07:07:51,830 --> 07:07:49,680
um it's pretty dark out there right now

4507
07:07:54,170 --> 07:07:51,840
but we expect an orbital Sunrise with

4508
07:07:56,270 --> 07:07:54,180
some better lighting soon

4509
07:07:58,610 --> 07:07:56,280
yeah but I think it's going by myself is

4510
07:08:01,670 --> 07:07:58,620
the problem

4511
07:08:07,430 --> 07:08:01,680
copy I understand now

4512
07:08:11,750 --> 07:08:09,590
copy we do have an external camera view

4513
07:08:13,128 --> 07:08:11,760

on you but it's pretty dark and there's

4514

07:08:29,090 --> 07:08:13,138

some stuff in the way I unfortunately

4515

07:08:29,100 --> 07:08:35,280

foreign

4516

07:08:35,290 --> 07:09:02,930

[Music]

4517

07:09:16,628 --> 07:09:06,468

okay it is locked I thought I got it

4518

07:09:22,368 --> 07:09:19,968

passing the six hour mark on our space

4519

07:09:24,708 --> 07:09:22,378

walk today about six hours and 10

4520

07:09:28,430 --> 07:09:24,718

minutes as our crew Works to get back

4521

07:09:30,650 --> 07:09:28,440

into the airlock just before both Nicole

4522

07:09:34,310 --> 07:09:30,660

Mann and kuichiwakata had completed

4523

07:09:36,590 --> 07:09:34,320

their tasks uh duke or Nicole Mann was

4524

07:09:39,410 --> 07:09:36,600

tasked with going way out to the port

4525

07:09:40,910 --> 07:09:39,420

six trust and retrieving a portable foot

4526
07:09:44,208 --> 07:09:40,920
restraint bringing it a little bit

4527
07:09:49,368 --> 07:09:45,948
copy

4528
07:09:51,410 --> 07:09:49,378
meanwhile had relocated a portable foot

4529
07:09:53,628 --> 07:09:51,420
restraint from Ingress Aid swapping it

4530
07:09:55,850 --> 07:09:53,638
out with another one

4531
07:09:59,390 --> 07:09:55,860
um and put that on at Sea to cart for

4532
07:10:04,548 --> 07:10:01,490
yeah

4533
07:10:06,708 --> 07:10:04,558
it works awesome job Duke you can start

4534
07:10:09,350 --> 07:10:06,718
translating back to the airlock reminder

4535
07:10:11,090 --> 07:10:09,360
to depress the seated cart brakes you'll

4536
07:10:13,070 --> 07:10:11,100
press the starboard seated cart brakes

4537
07:10:16,850 --> 07:10:13,080
and the port key to cart breaks two

4538
07:10:16,860 --> 07:11:23,570

say something

4539

07:11:27,230 --> 07:11:25,270

in the lower right corner of

4540

07:11:28,910 --> 07:11:27,240

koichiwakata's helmet camera you can see

4541

07:12:30,770 --> 07:11:28,920

we're entering and entering an orbital

4542

07:12:51,190 --> 07:12:32,390

together

4543

07:12:56,390 --> 07:12:53,628

astronaut Nicole man is confirming that

4544

07:12:59,690 --> 07:12:56,400

the brakes on the seat of cart are fully

4545

07:13:01,910 --> 07:12:59,700

engaged after that she is going to Stow

4546

07:13:03,890 --> 07:13:01,920

her strut bag if you remember the

4547

07:13:06,770 --> 07:13:03,900

beginning of the Eva they had to bring

4548

07:13:09,410 --> 07:13:06,780

out the mid strut to finish installation

4549

07:13:51,350 --> 07:13:09,420

so she's stowing the empty bag back into

4550

07:13:57,708 --> 07:13:54,708

there's two presses on the fourth uh

4551
07:14:00,170 --> 07:13:57,718
great job Duke and just a heads up right

4552
07:14:01,490 --> 07:14:00,180
now your safety tether looks good but

4553
07:14:03,650 --> 07:14:01,500
for a moment was about to go between

4554
07:14:09,610 --> 07:14:03,660
your legs you're in a great config now

4555
07:14:42,048 --> 07:14:14,090
I'm coming down to see the fur okay

4556
07:14:42,058 --> 07:14:47,270
for a pet 615 doing great

4557
07:14:52,788 --> 07:14:49,548
but if we take a couple photos before we

4558
07:14:56,570 --> 07:14:52,798
stuck our go into the crew locks you bet

4559
07:14:56,580 --> 07:14:59,628
all right

4560
07:14:59,638 --> 07:15:21,230
perfect lighting

4561
07:15:21,240 --> 07:15:29,750
lighting stay there

4562
07:15:29,760 --> 07:15:35,448
what time is it actually

4563
07:15:40,010 --> 07:15:37,548

so let me get my answers

4564

07:15:47,868 --> 07:15:40,020

what's up

4565

07:15:47,878 --> 07:15:54,170

another one

4566

07:15:54,180 --> 07:16:17,930

awesome

4567

07:16:17,940 --> 07:16:24,350

translating really quickly there

4568

07:16:24,360 --> 07:16:41,390

shot yeah

4569

07:16:41,400 --> 07:16:53,100

we've got another one here

4570

07:17:02,810 --> 07:16:54,730

[Applause]

4571

07:17:07,368 --> 07:17:05,090

you can see our spacewalker NASA

4572

07:17:09,230 --> 07:17:07,378

astronaut Nicole man there with the

4573

07:17:10,930 --> 07:17:09,240

camera taking some pictures of koichi

4574

07:17:14,030 --> 07:17:10,940

and perhaps of this orbital Sunrise

4575

07:17:15,830 --> 07:17:14,040

they're about six hours and 17 minutes

4576
07:17:17,690 --> 07:17:15,840
into their spacewalk and have completed

4577
07:17:19,730 --> 07:17:17,700
their tasks for the day so taking

4578
07:17:20,990 --> 07:17:19,740
advantage of the scenes grabbing a few

4579
07:17:38,288 --> 07:17:21,000
shots and then going back into the

4580
07:18:31,548 --> 07:17:41,948
all right

4581
07:18:36,410 --> 07:18:33,230
right then I think I'm gonna Ingrid

4582
07:18:38,030 --> 07:18:36,420
coffee great work both of you koichi

4583
07:18:52,548 --> 07:18:38,040
before you Ingress you can turn off your

4584
07:18:52,558 --> 07:19:02,590
foreign

4585
07:19:08,208 --> 07:19:05,150
since that assembly is a little bit

4586
07:19:11,930 --> 07:19:08,218
loose above your head if Duke needs to

4587
07:20:15,590 --> 07:19:13,850
yeah that's probably better

4588
07:20:24,110 --> 07:20:18,170

bye

4589

07:20:53,030 --> 07:20:26,990

copy koichi Duke you can also turn off

4590

07:21:02,270 --> 07:20:54,788

all right

4591

07:21:03,650 --> 07:21:02,280

no your head first thing yeah okay so I

4592

07:21:12,910 --> 07:21:03,660

think I just want to bend your knees

4593

07:21:12,920 --> 07:21:16,670

all right

4594

07:21:16,680 --> 07:21:28,490

okay

4595

07:21:32,270 --> 07:21:30,170

this regard we were going to ask you

4596

07:21:33,110 --> 07:21:32,280

about the thermal cover but you answered

4597

07:21:36,400 --> 07:21:33,120

our question

4598

07:21:40,548 --> 07:21:38,150

[Applause]

4599

07:21:42,410 --> 07:21:40,558

we're beginning to get our final views

4600

07:21:45,048 --> 07:21:42,420

of our space Walkers here you see the

4601
07:21:47,270 --> 07:21:45,058
legs of NASA astronaut Nicole Mann she's

4602
07:22:15,048 --> 07:21:47,280
there in the pair of legs with the red

4603
07:22:15,058 --> 07:22:33,288
here

4604
07:22:38,868 --> 07:22:36,350
all right all right I mean the thermal

4605
07:22:41,090 --> 07:22:38,878
cover is closed awesome

4606
07:22:43,368 --> 07:22:41,100
copy Duke you can release the hook from

4607
07:22:44,990 --> 07:22:43,378
its stowage tether points attach the

4608
07:22:46,670 --> 07:22:45,000
hook to the magnetic plate during and

4609
07:22:48,650 --> 07:22:46,680
cinch the strap until six lines are

4610
07:23:02,930 --> 07:22:48,660
visible on the tail verify that the

4611
07:23:06,830 --> 07:23:05,448
Luigi you can start working on your seu

4612
07:23:08,510 --> 07:23:06,840
while Duke is working on the thermal

4613
07:23:11,030 --> 07:23:08,520

cover remove it from its storage pouch

4614

07:23:16,010 --> 07:23:11,040

remove your DCM cover and connect that

4615

07:23:16,020 --> 07:23:58,548

copy

4616

07:23:58,558 --> 07:24:02,628

livable

4617

07:24:08,570 --> 07:24:05,270

happy Duke verify that the magnet is

4618

07:24:13,850 --> 07:24:08,580

engaged and with that you can also start

4619

07:24:13,860 --> 07:24:19,010

ous okay magma is engaged

4620

07:24:24,288 --> 07:24:21,650

Nicole man chatting with our ground IBS

4621

07:24:27,230 --> 07:24:24,298

in a Cartman today about releasing hooks

4622

07:24:30,170 --> 07:24:27,240

using d-rings magnets this is all in an

4623

07:24:33,288 --> 07:24:30,180

effort to close the hatch thermal cover

4624

07:24:35,270 --> 07:24:33,298

this is the outermost part of the hatch

4625

07:24:36,890 --> 07:24:35,280

and it looks like she's successfully

4626
07:24:43,430 --> 07:24:36,900
completed that step

4627
07:24:49,010 --> 07:24:45,948
you just heard koichiwakata be referred

4628
07:24:50,750 --> 07:24:49,020
to as ev2 our ev1 of course today is

4629
07:24:52,128 --> 07:24:50,760
Nicole Mann and doing these hatch

4630
07:24:54,468 --> 07:24:52,138
operations is part of her

4631
07:24:56,868 --> 07:24:54,478
responsibilities as the ev1 max cooling

4632
07:25:00,230 --> 07:24:56,878
minimizes the time necessary for SEO

4633
07:25:00,240 --> 07:25:08,330
okay

4634
07:25:12,110 --> 07:25:10,430
we're back now with our live views

4635
07:25:15,048 --> 07:25:12,120
inside the International Space Station

4636
07:25:17,330 --> 07:25:15,058
we have NASA astronaut Frank Rubio one

4637
07:25:18,948 --> 07:25:17,340
of our suit IVs today I'm working on my

4638
07:25:22,250 --> 07:25:18,958

FCU

4639

07:25:27,288 --> 07:25:22,260

Kathy Duke City you're still working on

4640

07:25:31,310 --> 07:25:29,390

early this morning Frank Rubio helped

4641

07:25:33,170 --> 07:25:31,320

our space Walkers into their spacesuits

4642

07:25:34,548 --> 07:25:33,180

and today he and Josh Castle are going

4643

07:25:57,350 --> 07:25:34,558

to help them out of their spacesuits

4644

07:25:57,360 --> 07:26:05,390

copy you both

4645

07:26:05,400 --> 07:26:37,910

copy

4646

07:26:43,850 --> 07:26:41,270

even though the hatch thermal cover is

4647

07:26:46,788 --> 07:26:43,860

closed it does not necessarily mean our

4648

07:26:48,288 --> 07:26:46,798

hatch is closed and in fact that's still

4649

07:27:20,510 --> 07:26:48,298

not expected to happen for several

4650

07:27:25,670 --> 07:27:22,368

for both of you understand you're still

4651
07:27:29,270 --> 07:27:25,680
working the tcv setting but for now

4652
07:27:34,730 --> 07:27:29,280
we'll take you take the water switch to

4653
07:27:34,740 --> 07:27:37,750
thank you

4654
07:27:45,048 --> 07:27:40,548
ktcd is uh

4655
07:27:47,208 --> 07:27:45,058
pack of gold or Evie bun and uh put a

4656
07:27:55,548 --> 07:27:47,218
switch coming out for 82 also

4657
07:27:55,558 --> 07:28:03,590
copy ev2

4658
07:28:03,600 --> 07:28:06,708
uh

4659
07:28:06,718 --> 07:28:15,708
copy water off for both of you

4660
07:28:18,468 --> 07:28:17,330
okay at this point we've got a two

4661
07:28:21,048 --> 07:28:18,478
minute wait

4662
07:28:57,650 --> 07:28:21,058
until we can do any further steps

4663
07:29:02,090 --> 07:28:59,868

I presents get a maneuver to get eyes on

4664

07:29:06,048 --> 07:29:02,100

the hat this is to go as far as your

4665

07:29:08,150 --> 07:29:06,058

head as possible okay it's okay

4666

07:29:10,430 --> 07:29:08,160

so this is sometimes I can go to the

4667

07:29:15,510 --> 07:29:10,440

port side so I'm gonna go up

4668

07:29:23,868 --> 07:29:18,490

[Applause]

4669

07:29:28,490 --> 07:29:26,570

if you're just joining us here our two

4670

07:29:31,910 --> 07:29:28,500

space Walkers are just on the other side

4671

07:29:34,310 --> 07:29:31,920

of that door having completed uh what's

4672

07:29:37,430 --> 07:29:34,320

now been a six hour and 30 minutes

4673

07:29:40,270 --> 07:29:37,440

spacewalk and Counting uh they're going

4674

07:29:42,890 --> 07:29:40,280

through the steps to close the hatch

4675

07:30:22,070 --> 07:29:42,900

behind them so that repressurization can

4676
07:30:26,990 --> 07:30:23,890
thank you

4677
07:30:29,090 --> 07:30:27,000
okay crew you can verify that the outer

4678
07:30:31,310 --> 07:30:29,100
hatch is clear of hardware

4679
07:30:35,930 --> 07:30:31,320
verify the handle position per hatch

4680
07:31:19,070 --> 07:30:38,510
okay it is a clear hardware and the

4681
07:31:19,080 --> 07:31:47,930
yes

4682
07:31:47,940 --> 07:31:53,090
be clear

4683
07:31:53,100 --> 07:31:58,910
okay

4684
07:32:32,390 --> 07:32:01,010
I decided to move

4685
07:32:32,400 --> 07:33:04,490
foreign

4686
07:33:04,500 --> 07:33:15,468
[Applause]

4687
07:33:15,478 --> 07:33:19,610
feedback

4688
07:33:23,690 --> 07:33:21,190

okay

4689

07:33:32,510 --> 07:33:23,700

I'm bending my

4690

07:33:37,670 --> 07:33:34,788

NASA astronaut and Josh cassida has

4691

07:33:39,288 --> 07:33:37,680

joined the equipment lock section of the

4692

07:33:41,330 --> 07:33:39,298

quest airlock

4693

07:33:43,610 --> 07:33:41,340

you see him there wearing the Hat

4694

07:33:47,830 --> 07:33:43,620

speaking to NASA astronaut Frank Rubio

4695

07:33:47,840 --> 07:34:09,890

[Music]

4696

07:34:15,410 --> 07:34:13,128

okay crew we are ready for the repress

4697

07:34:18,110 --> 07:34:15,420

check that your scu's are connected to

4698

07:34:18,830 --> 07:34:18,120

the DCM we've got your water off for two

4699

07:34:20,570 --> 07:34:18,840

minutes

4700

07:34:24,288 --> 07:34:20,580

check that the EV hatch is closed and

4701
07:34:24,298 --> 07:34:28,850
yeah it's close and

4702
07:34:28,860 --> 07:34:33,170
Barbara

4703
07:34:33,180 --> 07:34:36,610
okay

4704
07:34:36,620 --> 07:34:43,430
or does it just flip over

4705
07:34:43,440 --> 07:34:58,628
I think you can switch over

4706
07:34:58,638 --> 07:35:03,590
talking about the hatch handle

4707
07:35:09,708 --> 07:35:06,590
about the handle the lock but then you

4708
07:35:14,690 --> 07:35:09,718
flip over it says locked it doesn't pop

4709
07:35:19,128 --> 07:35:16,430
yeah it sounds like a good config to us

4710
07:35:23,270 --> 07:35:19,138
Duke it's not a very noticeable detent

4711
07:35:27,590 --> 07:35:23,280
okay on the UIA check oxygen for emu one

4712
07:35:27,600 --> 07:35:32,628
open

4713
07:35:44,448 --> 07:35:36,948

switch power for ev1 and 2 on and check

4714

07:35:44,458 --> 07:35:50,410

yeah

4715

07:35:55,850 --> 07:35:52,910

two LEDs are on

4716

07:36:00,230 --> 07:35:55,860

check power for ev1 and 2 volts are

4717

07:36:06,530 --> 07:36:03,048

35 18.6 on both

4718

07:36:08,810 --> 07:36:06,540

copy 18.6 on both under the hatch is

4719

07:36:10,730 --> 07:36:08,820

officially closed and Xena Cartman is

4720

07:36:11,890 --> 07:36:10,740

now walking our space walking astronauts

4721

07:36:14,990 --> 07:36:11,900

through a

4722

07:36:31,750 --> 07:36:15,000

pre-re-pressurization checklist

4723

07:36:31,760 --> 07:36:35,570

81-powered I see you

4724

07:36:41,868 --> 07:36:39,170

copy ev1n2 on SCU power

4725

07:37:03,468 --> 07:36:41,878

on your DCM take your O2 actuator to

4726
07:37:07,368 --> 07:37:05,868
The View you're seeing now is that of

4727
07:37:08,750 --> 07:37:07,378
Mission Control Houston and the

4728
07:37:10,310 --> 07:37:08,760
International Space Station's flight

4729
07:37:11,810 --> 07:37:10,320
control room

4730
07:37:13,190 --> 07:37:11,820
this is the view of all the flight

4731
07:37:14,510 --> 07:37:13,200
controllers in the room under the

4732
07:37:16,430 --> 07:37:14,520
direction of flight director Chloe

4733
07:37:17,990 --> 07:37:16,440
Maring as they're working to get the

4734
07:37:23,750 --> 07:37:18,000
spacewalking astronauts ready for

4735
07:37:23,760 --> 07:37:27,468
copy ev2

4736
07:37:34,850 --> 07:37:31,128
copy ev1 ends to impressive great work

4737
07:37:52,968 --> 07:37:34,860
both of you yeah all right check that

4738
07:37:58,610 --> 07:37:55,368

also too

4739

07:38:00,350 --> 07:37:58,620

okay 82 we're actually showing you not

4740

07:38:02,510 --> 07:38:00,360

quite impressed just yet if you could

4741

07:38:04,070 --> 07:38:02,520

give your O2 actuator a little wiggle

4742

07:38:07,010 --> 07:38:04,080

and make sure that it's fully in the

4743

07:38:07,020 --> 07:38:12,590

okay I'm jiggling it

4744

07:38:18,288 --> 07:38:14,930

and Duke will take a wiggle test from

4745

07:38:18,298 --> 07:38:21,468

oh it's all coming

4746

07:38:30,590 --> 07:38:23,810

hey Wiggles but still it says the

4747

07:38:30,600 --> 07:38:48,788

oh looks like he's dead

4748

07:38:55,368 --> 07:38:51,170

Ultra theater and that threat happy

4749

07:38:59,990 --> 07:38:55,378

koichi we see you both in press okay and

4750

07:39:00,000 --> 07:39:03,350

okay

4751
07:39:09,110 --> 07:39:05,990
IV hatch Equalization valves throttle

4752
07:39:14,208 --> 07:39:09,120
off to Norm at your desired rate EV

4753
07:39:20,810 --> 07:39:17,750
okay and uh Dana I am with you on one

4754
07:39:22,430 --> 07:39:20,820
and I will take it from here great job

4755
07:39:27,048 --> 07:39:22,440
you've got it over to you Frank

4756
07:39:30,650 --> 07:39:29,390
and thanks so much for the team for all

4757
07:39:34,070 --> 07:39:30,660
the effort you put into the

4758
07:39:37,310 --> 07:39:34,080
troubleshooting and all the hours at it

4759
07:39:38,990 --> 07:39:37,320
it was a great uh great space and great

4760
07:39:41,868 --> 07:39:39,000
procedures that you gave us to get that

4761
07:39:44,980 --> 07:39:41,878
on my kids so and Well Done policy for

4762
07:39:44,990 --> 07:39:48,530
[Music]

4763
07:39:53,868 --> 07:39:50,930

thank you to the entire team for the

4764

07:39:56,330 --> 07:39:53,878

entire you know a wonderful procedures

4765

07:39:58,128 --> 07:39:56,340

in the real-time advice for the Triple

4766

07:40:00,650 --> 07:39:58,138

shooting it worked out great

4767

07:40:12,708 --> 07:40:00,660

I'd like to thank uh Dr folks who are

4768

07:40:12,718 --> 07:40:25,628

um

4769

07:40:25,638 --> 07:40:32,030

thank you again

4770

07:40:36,350 --> 07:40:34,310

hey guys welcome back great job out

4771

07:40:38,810 --> 07:40:36,360

there it's good to have you back okay

4772

07:40:40,910 --> 07:40:38,820

I'll be uh throttling the IV hatch

4773

07:40:42,890 --> 07:40:40,920

around from off the norm let me know if

4774

07:40:45,830 --> 07:40:42,900

the race reports go for you

4775

07:40:48,530 --> 07:40:45,840

our ground IV Xena cardamon has handed

4776

07:40:50,510 --> 07:40:48,540

off her duties of talking to these

4777

07:40:52,430 --> 07:40:50,520

spacewalkers over to Frank Rubio who's

4778

07:40:54,590 --> 07:40:52,440

on your screen now he'll be continuing

4779

07:41:03,230 --> 07:40:54,600

with the rest of the steps and so

4780

07:41:07,548 --> 07:41:05,448

okay it started let me know if that

4781

07:41:09,948 --> 07:41:07,558

works we are going to go up to five and

4782

07:41:44,570 --> 07:41:09,958

pause there you should expect an alerts

4783

07:41:48,830 --> 07:41:47,270

the crew there just shared some kind

4784

07:41:50,628 --> 07:41:48,840

words with the team here on the ground

4785

07:41:52,070 --> 07:41:50,638

namely thanking them for the

4786

07:41:55,010 --> 07:41:52,080

troubleshooting measures happening

4787

07:41:57,770 --> 07:41:55,020

between the January 20th spacewalk and

4788

07:42:01,730 --> 07:41:57,780

now as they went out today to do some of

4789

07:42:05,330 --> 07:42:01,740

the fixes try some new workarounds

4790

07:42:07,730 --> 07:42:05,340

and ultimately it led to success

4791

07:42:08,868 --> 07:42:07,740

now repressurization has begun as you

4792

07:42:11,448 --> 07:42:08,878

can hear that sound in the background

4793

07:42:12,850 --> 07:42:11,458

we're going to vacuum a vacuum we

4794

07:42:16,548 --> 07:42:12,860

started at about

4795

07:42:31,570 --> 07:42:16,558

0.3 PSI and we're steadily moving up

4796

07:42:36,708 --> 07:42:34,010

today's spacewalk concluded when our

4797

07:42:40,730 --> 07:42:36,718

space Walkers turns their spacesuits off

4798

07:42:44,030 --> 07:42:40,740

of battery power a time of 1 26 PM

4799

07:42:46,010 --> 07:42:44,040

Central Time 2 26 PM Eastern bringing

4800

07:42:58,548 --> 07:42:46,020

their Total Space walking time to 6

4801
07:42:58,558 --> 07:43:19,788
foreign

4802
07:43:23,390 --> 07:43:21,590
ah

4803
07:43:25,968 --> 07:43:23,400
the crew lock is now sitting at just

4804
07:43:28,190 --> 07:43:25,978
above 5 PSI where we're doing a planned

4805
07:43:31,368 --> 07:43:28,200
hold make sure everything is okay before

4806
07:43:33,468 --> 07:43:31,378
continuing back up to the pressure of

4807
07:43:36,468 --> 07:43:33,478
the International Space Station and that

4808
07:43:43,490 --> 07:43:36,478
of sea level here on Earth of 14.7 PSI

4809
07:43:48,230 --> 07:43:45,410
these same steps were followed but in

4810
07:43:50,208 --> 07:43:48,240
Reverse during depressurization as they

4811
07:43:51,468 --> 07:43:50,218
prepared to get out the door now they're

4812
07:46:21,468 --> 07:43:51,478
preparing to get back into the space

4813
07:46:26,048 --> 07:46:24,110

all right guys the pressure has been

4814

07:46:29,510 --> 07:46:26,058

stable for

4815

07:46:32,208 --> 07:46:29,520

one minute with a Delta of less than one

4816

07:46:35,690 --> 07:46:32,218

so for both of you check switch and

4817

07:46:40,610 --> 07:46:35,700

glove heaters off of

4818

07:46:44,628 --> 07:46:43,010

great uh for both of you please check

4819

07:46:49,980 --> 07:46:44,638

your gloves for contamination and

4820

07:46:55,310 --> 07:46:52,910

[Applause]

4821

07:47:16,510 --> 07:46:55,320

great to hear for both of you take your

4822

07:47:23,810 --> 07:47:21,530

is in IV and coffee easy too great job

4823

07:47:26,330 --> 07:47:23,820

okay I will be throttling the

4824

07:47:28,670 --> 07:47:26,340

equalization valve and we're going to go

4825

07:47:31,430 --> 07:47:28,680

to a dvdt of zero here let me know how

4826
07:47:31,440 --> 07:47:46,788
starting now

4827
07:48:30,530 --> 07:47:50,170
after entering a momentary hold at 5 PSI

4828
07:48:30,540 --> 07:48:33,708
foreign

4829
07:48:33,718 --> 07:48:40,300
all right

4830
07:49:30,530 --> 07:48:59,130
[Applause]

4831
07:49:36,830 --> 07:49:33,770
today's space walk began at 6 45 a.m

4832
07:49:40,190 --> 07:49:36,840
Central Time ending at 1 26 p.m central

4833
07:49:42,048 --> 07:49:40,200
time for a total of 6 hours and 41

4834
07:49:44,410 --> 07:49:42,058
minutes let's take a look at the

4835
07:49:46,850 --> 07:49:44,420
spacewalk by the Numbers it was the

4836
07:49:48,410 --> 07:49:46,860
259th spacewalk in support of space

4837
07:49:50,990 --> 07:49:48,420
station assembly maintenance and

4838
07:49:54,530 --> 07:49:51,000

upgrades it was the second space station

4839

07:49:57,770 --> 07:49:54,540

spacewalk of 2823 in the sixth spacewalk

4840

07:50:00,170 --> 07:49:57,780

of expedition 68. it was the second

4841

07:50:03,170 --> 07:50:00,180

spacewalk of both koichiwakata and

4842

07:50:05,208 --> 07:50:03,180

Nicole Mann's career totaling 14 hours

4843

07:50:07,368 --> 07:50:05,218

and two minutes of their career space

4844

07:50:09,650 --> 07:50:07,378

walking time

4845

07:50:11,690 --> 07:50:09,660

today's spacewalk again lasted six hours

4846

07:50:15,048 --> 07:50:11,700

and 41 minutes

4847

07:50:22,490 --> 07:50:15,058

which led to 68 Days 12 hours and 28

4848

07:50:28,730 --> 07:50:24,830

these 68 days refer to the total

4849

07:50:30,530 --> 07:50:28,740

spacewalking time of all 259 spacewalks

4850

07:50:32,750 --> 07:50:30,540

in support of space station assembly

4851
07:50:36,170 --> 07:50:32,760
maintenance and upgrades

4852
07:50:38,690 --> 07:50:36,180
this year it being a six from Expedition

4853
07:50:41,208 --> 07:50:38,700
68 five out of the quest airlock where

4854
07:50:47,240 --> 07:50:41,218
our space walking astronauts are now and

4855
07:50:47,250 --> 07:50:55,670
[Applause]

4856
07:50:59,810 --> 07:50:57,410
with the conclusion of this spacewalk

4857
07:51:02,990 --> 07:50:59,820
that brings the total spacewalking hours

4858
07:51:10,150 --> 07:51:03,000
of expedition 68 to 41 hours and 51

4859
07:51:14,990 --> 07:51:12,048
repressurization almost complete now

4860
07:51:29,830 --> 07:51:15,000
hovering above 13 PSI making its weight

4861
07:51:35,930 --> 07:51:32,448
repressurization continues as we

4862
07:51:38,510 --> 07:51:35,940
momentarily lost our view of that crew

4863
07:51:40,430 --> 07:51:38,520

lock of the quest era lock you're now

4864

07:51:42,888 --> 07:51:40,440

seeing the mission control team who

4865

07:51:44,930 --> 07:51:42,898

worked on today's operation monitoring

4866

07:51:48,468 --> 07:51:44,940

our space Walkers coming up with

4867

07:51:51,350 --> 07:51:48,478

troubleshooting Solutions as they worked

4868

07:51:58,128 --> 07:51:51,360

to get that mid strut of this mod kit

4869

07:51:58,138 --> 07:52:19,610

us

4870

07:52:23,628 --> 07:52:21,590

the man standing at the back of the room

4871

07:52:25,368 --> 07:52:23,638

there that's Keith Johnson he knows the

4872

07:52:27,288 --> 07:52:25,378

ins and outs of the procedures that we

4873

07:52:29,150 --> 07:52:27,298

did today coming up with many of the

4874

07:52:31,850 --> 07:52:29,160

solutions and Consulting with his teams

4875

07:52:34,670 --> 07:52:31,860

in the back rooms relaying his

4876
07:52:37,310 --> 07:52:34,680
data to the road just in front of him

4877
07:52:39,770 --> 07:52:37,320
our flight director Chloe Maring and our

4878
07:52:41,570 --> 07:52:39,780
ground ivy the person who communicated

4879
07:53:04,750 --> 07:52:41,580
all of the instructions with our crew

4880
07:53:08,448 --> 07:53:06,530
repressurization is complete and the

4881
07:53:12,708 --> 07:53:08,458
hatch has been opened

4882
07:53:12,718 --> 07:53:24,970
thank you guys

4883
07:53:24,980 --> 07:53:30,288
[Applause]

4884
07:53:36,048 --> 07:53:32,628
looks like huichiwakata are an astronaut

4885
07:53:38,388 --> 07:53:36,058
from Japan is the first out of the hatch

4886
07:53:42,410 --> 07:53:38,398
ing station on one you have a go for

4887
07:53:50,930 --> 07:53:42,420
step four of one decimal two four zero

4888
07:53:50,940 --> 07:53:58,548

[Music]

4889

07:53:58,558 --> 07:54:21,288

and copies thanks Frank

4890

07:54:21,298 --> 07:54:52,150

ah

4891

07:54:57,110 --> 07:54:54,770

NASA astronaut Josh cassida you see

4892

07:54:58,910 --> 07:54:57,120

there in the Hat in the lower left

4893

07:55:00,530 --> 07:54:58,920

corner of your screen with NASA

4894

07:55:02,690 --> 07:55:00,540

astronaut Frank Rubio and the short

4895

07:55:05,150 --> 07:55:02,700

sleeves and the upper right working now

4896

07:55:08,208 --> 07:55:05,160

with spacewalker koichiwakata getting

4897

07:55:20,330 --> 07:55:08,218

his uh safer unit off getting his helmet

4898

07:55:29,448 --> 07:55:23,090

yeah like Houston heads up uh space

4899

07:56:55,250 --> 07:55:31,368

I understand crew is no longer hotline

4900

07:57:00,350 --> 07:56:57,888

this is the quest airlock aboard the

4901
07:57:02,888 --> 07:57:00,360
International Space Station what you see

4902
07:57:05,270 --> 07:57:02,898
in the foreground here with astronaut

4903
07:57:07,010 --> 07:57:05,280
koichiwakata Frank Rubio and Josh

4904
07:57:08,868 --> 07:57:07,020
cassida that's what's known as the

4905
07:57:11,090 --> 07:57:08,878
equipment lock section of the quest

4906
07:57:13,190 --> 07:57:11,100
airlock Nicole Mann you can kind of see

4907
07:57:14,750 --> 07:57:13,200
her legs there with the red stripes she

4908
07:57:16,850 --> 07:57:14,760
is still in the crew lock she's going to

4909
07:57:18,948 --> 07:57:16,860
make her way over to the equipment lock

4910
07:57:51,350 --> 07:57:18,958
with the help of our ground excuse me

4911
07:57:54,830 --> 07:57:53,750
Nicole man's being helped into the crew

4912
07:58:15,948 --> 07:57:54,840
lock now

4913
07:58:20,690 --> 07:58:18,410

just like they did with koichi wakata

4914

07:58:22,730 --> 07:58:20,700

our suit IV's Frank Rubio and Josh

4915

07:58:25,250 --> 07:58:22,740

cassida are working on either side of

4916

07:58:27,468 --> 07:58:25,260

our space walker working to remove these

4917

07:59:17,750 --> 07:58:27,478

safer units the simplified aid for Eva

4918

07:59:23,030 --> 07:59:20,388

our space Walkers today are wrapping up

4919

07:59:26,208 --> 07:59:23,040

they are both inside the hatch they've

4920

07:59:28,430 --> 07:59:26,218

re gone undergone repressurization and

4921

07:59:31,730 --> 07:59:28,440

are back into the equipment lock with

4922

07:59:34,128 --> 07:59:31,740

our suit IVs who are helping them kind

4923

07:59:35,930 --> 07:59:34,138

of get out of their suits right now to

4924

07:59:38,270 --> 07:59:35,940

recap what they've accomplished today

4925

07:59:41,208 --> 07:59:38,280

NASA astronaut Nicole man and Japanese

4926
07:59:44,090 --> 07:59:41,218
astronaut koichiwakata successfully

4927
07:59:46,128 --> 07:59:44,100
installed a mod kit this is a necessary

4928
07:59:49,010 --> 07:59:46,138
step to set the stage for the delivery

4929
07:59:52,010 --> 07:59:49,020
of the next set of irosas or roll out

4930
07:59:54,048 --> 07:59:52,020
solar arrays on spacex's 28th cargo

4931
07:59:56,930 --> 07:59:54,058
resupply launch this summer

4932
08:00:01,250 --> 07:59:56,940
in an effort to

4933
08:00:02,570 --> 08:00:01,260
Space Station's power channels give it a

4934
08:00:05,448 --> 08:00:02,580
little bit more power with these rollout

4935
08:00:07,730 --> 08:00:05,458
Soul surveys they began work on this

4936
08:00:10,070 --> 08:00:07,740
structure in January and completed their

4937
08:00:11,868 --> 08:00:10,080
installation today after some teamwork

4938
08:00:13,070 --> 08:00:11,878

and collaboration with the team here in

4939

08:00:15,288 --> 08:00:13,080

Mission Control

4940

08:00:18,110 --> 08:00:15,298

this involved work on a lower and

4941

08:00:20,208 --> 08:00:18,120

mid-strut and wrapped up their work by

4942

08:00:21,830 --> 08:00:20,218

tightening the bolts today rigidizing

4943

08:00:24,770 --> 08:00:21,840

the structure getting it ready for these

4944

08:00:27,288 --> 08:00:24,780

irosas they went on to do some work that

4945

08:00:29,628 --> 08:00:27,298

could save time for future spacewalkers

4946

08:00:31,788 --> 08:00:29,638

including Nicole Mann who delivered a

4947

08:00:33,730 --> 08:00:31,798

bundle of cables out to the 1B power

4948

08:00:36,288 --> 08:00:33,740

Channel

4949

08:00:37,788 --> 08:00:36,298

swapped out an Ingress Aid on a portable

4950

08:00:40,070 --> 08:00:37,798

foot restraint that had some trouble

4951

08:00:41,510 --> 08:00:40,080

rotating from side to side

4952

08:00:43,430 --> 08:00:41,520

now when it's used for the next

4953

08:00:45,410 --> 08:00:43,440

spacewalk the user won't have to spend

4954

08:00:47,270 --> 08:00:45,420

time swapping it out themselves

4955

08:00:49,368 --> 08:00:47,280

and Nicole Mann ventured out to the port

4956

08:00:51,590 --> 08:00:49,378

6 truss to bring a different portable

4957

08:00:55,250 --> 08:00:51,600

foot restraint closer to the work site

4958

08:00:59,570 --> 08:00:57,128

we're back with our live views now

4959

08:02:43,850 --> 08:00:59,580

kuichiwakata on the left and Nicole Mann

4960

08:02:43,860 --> 08:02:59,090

back with our live views now

4961

08:03:02,990 --> 08:03:01,430

Josh casted and now removing the hecka

4962

08:03:05,030 --> 08:03:03,000

part of the

4963

08:03:06,590 --> 08:03:05,040

straps onto the helmet gives us some

4964

08:03:08,388 --> 08:03:06,600

nice high definition views of their

4965

08:05:34,968 --> 08:03:08,398

point of view that's wakata that he's

4966

08:05:50,868 --> 08:05:37,850

hey Josh there's a flashlight in front

4967

08:05:50,878 --> 08:05:55,968

thank you

4968

08:06:00,770 --> 08:05:58,250

Josh cassid and now working to remove

4969

08:06:02,868 --> 08:06:00,780

the gloves of Japanese astronaut

4970

08:06:04,730 --> 08:06:02,878

koichiwakata

4971

08:07:54,830 --> 08:06:04,740

it looks like Frank Rubio is doing the

4972

08:08:01,070 --> 08:07:59,208

and the gloves are off as our suit IVs

4973

08:08:03,230 --> 08:08:01,080

NASA astronaut Frank Rubio and Josh

4974

08:08:05,270 --> 08:08:03,240

cassida work to get our spacewalkers out

4975

08:08:07,670 --> 08:08:05,280

of their spacesuits right now of course

4976
08:08:37,968 --> 08:08:07,680
having some playful pictures taken along

4977
08:08:42,770 --> 08:08:40,430
this photography is also crucial to

4978
08:08:44,448 --> 08:08:42,780
documenting this post-spacewalk the

4979
08:09:07,990 --> 08:08:44,458
condition of the spacesuits the location

4980
08:09:12,048 --> 08:09:10,430
and the helmets are off on our space

4981
08:09:14,330 --> 08:09:12,058
Walkers Nicole Mann on the right and

4982
08:09:15,530 --> 08:09:14,340
koichiwakata on the left all smiles all

4983
08:09:18,230 --> 08:09:15,540
around

4984
08:09:20,208 --> 08:09:18,240
this was their second spacewalk and of

4985
08:09:22,430 --> 08:09:20,218
course the second spacewalk of 2023 as

4986
08:09:27,830 --> 08:09:24,830
their total spacewalking time equals 14

4987
08:09:31,490 --> 08:09:27,840
hours two minutes mostly with the goal

4988
08:09:33,170 --> 08:09:31,500

of setting up the mod kit on the 1A

4989

08:09:35,270 --> 08:09:33,180

power channel of the International Space

4990

08:09:37,368 --> 08:09:35,280

Station they previously wrapped up

4991

08:09:39,530 --> 08:09:37,378

installing the 1V power Channel as well

4992

08:09:41,510 --> 08:09:39,540

finishing the 1A channels a day you

4993

08:09:48,770 --> 08:09:41,520

could look to your left and smile real

4994

08:09:48,780 --> 08:09:55,548

perfect

4995

08:09:55,558 --> 08:10:01,910

excellent family photo there thanks guys

4996

08:10:06,948 --> 08:10:04,788

not only did Nicole man and koichiwakata

4997

08:10:09,670 --> 08:10:06,958

finish installing this mod kit to set

4998

08:10:12,170 --> 08:10:09,680

the stage for future delivery of the

4999

08:10:13,788 --> 08:10:12,180

iroso's International Space Station roll

5000

08:10:17,150 --> 08:10:13,798

out solar arrays for future power

5001
08:10:19,310 --> 08:10:17,160
upgrades but they also did a lot of work

5002
08:10:21,230 --> 08:10:19,320
setting the stage for future space walks

5003
08:10:23,628 --> 08:10:21,240
bringing in equipment that was farther

5004
08:10:26,448 --> 08:10:23,638
away bringing it to the work site for

5005
08:10:28,310 --> 08:10:26,458
future spacewalks replacing

5006
08:10:30,888 --> 08:10:28,320
sticky portable foot restraints and

5007
08:10:32,570 --> 08:10:30,898
Ingress aids with ones that will make

5008
08:11:14,930 --> 08:10:32,580
the lives just a little bit easier of

5009
08:11:21,288 --> 08:11:18,048
these spacewalkers set their spacesuits

5010
08:11:23,930 --> 08:11:21,298
to battery power at 6 45 a.m leading

5011
08:11:26,270 --> 08:11:23,940
them to a 6 hour 41 minute spacewalk to

5012
08:11:28,968 --> 08:11:26,280
get these installations complete and

5013
08:11:31,128 --> 08:11:28,978

these these tasks to set them up for

5014

08:11:33,110 --> 08:11:31,138

success for future spacewalks

5015

08:11:35,628 --> 08:11:33,120

thank you for watching and sending in

5016

08:11:37,670 --> 08:11:35,638

your questions via ask NASA you can

5017

08:11:39,708 --> 08:11:37,680

follow along with Expedition 68's

5018

08:11:42,230 --> 08:11:39,718

mission on the International Space

5019

08:11:43,910 --> 08:11:42,240

Station blog and on social media that

5020

08:11:58,010 --> 08:11:43,920

concludes our coverage today thanks for

5021

08:12:39,468 --> 08:12:13,610

[Music]

5022

08:13:06,390 --> 08:12:40,770

foreign

5023

08:13:06,400 --> 08:13:23,930

[Music]

5024

08:13:54,110 --> 08:13:25,510

foreign

5025

08:13:54,120 --> 08:14:06,810

thank you

5026

08:14:33,230 --> 08:14:30,610

[Music]