



1
00:00:07,110 --> 00:00:03,750
fold and unfurl the second of two iss

2
00:00:09,110 --> 00:00:07,120
rollout solar arrays solar arrays that

3
00:00:12,390 --> 00:00:09,120
are being installed on the international

4
00:00:15,030 --> 00:00:12,400
space station to provide a total of 120

5
00:00:16,950 --> 00:00:15,040
additional kilowatts of power to augment

6
00:00:18,950 --> 00:00:16,960
the electrical capability of the

7
00:00:21,189 --> 00:00:18,960
international outpost

8
00:00:23,349 --> 00:00:21,199
you are looking live inside the quest

9
00:00:25,750 --> 00:00:23,359
airlock one month shy of its 20th

10
00:00:28,310 --> 00:00:25,760
anniversary of use on the international

11
00:00:31,750 --> 00:00:28,320
space station on the right side of your

12
00:00:33,830 --> 00:00:31,760
screen is a pesky he once again is

13
00:00:36,389 --> 00:00:33,840

playing the role of ev1 or extra

14
00:00:38,869 --> 00:00:36,399
vehicular crew member number one wearing

15
00:00:40,869 --> 00:00:38,879
the suit bearing the red stripes today

16
00:00:43,590 --> 00:00:40,879
on the left is nasa astronaut shane

17
00:00:46,630 --> 00:00:43,600
kimbrough he'll be wearing the unmarked

18
00:00:48,150 --> 00:00:46,640
suit as ev2 or extra vehicular crew

19
00:00:50,709 --> 00:00:48,160
member number two

20
00:00:53,670 --> 00:00:50,719
these two uh astronauts members of the

21
00:00:56,310 --> 00:00:53,680
expedition 65 crew are about to make

22
00:00:59,189 --> 00:00:56,320
their fifth spacewalk together the first

23
00:01:02,869 --> 00:00:59,199
two spacewalks that they conducted

24
00:01:05,910 --> 00:01:02,879
were back in 2017. this is their third

25
00:01:10,070 --> 00:01:05,920
spacewalk in this series to install the

26

00:01:11,990 --> 00:01:10,080

new iss solar arrays this is the 241st

27

00:01:14,070 --> 00:01:12,000

spacewalk in the history of the

28

00:01:16,070 --> 00:01:14,080

international space station for assembly

29

00:01:17,910 --> 00:01:16,080

maintenance and upgrades the ninth

30

00:01:20,149 --> 00:01:17,920

spacewalk out of the international space

31

00:01:22,870 --> 00:01:20,159

station this year the ninth in

32

00:01:25,109 --> 00:01:22,880

kimbrough's career with a total of 52

33

00:01:26,550 --> 00:01:25,119

hours and 43 minutes of spacewalking

34

00:01:28,710 --> 00:01:26,560

time to date

35

00:01:31,510 --> 00:01:28,720

for pesquet this will be his fifth

36

00:01:34,469 --> 00:01:31,520

spacewalk his four previous excursions

37

00:01:37,350 --> 00:01:34,479

in the vacuum of space totaling 26 hours

38

00:01:39,670 --> 00:01:37,360

and 15 minutes

39

00:01:41,910 --> 00:01:39,680

the two astronauts have been

40

00:01:44,870 --> 00:01:41,920

suited up for the past couple of hours

41

00:01:46,789 --> 00:01:44,880

they have been pre-breathing pure oxygen

42

00:01:48,630 --> 00:01:46,799

to cleanse the nitrogen out of their

43

00:01:50,950 --> 00:01:48,640

bloodstreams preventing any condition

44

00:01:52,870 --> 00:01:50,960

known as the bends or decompression

45

00:01:55,190 --> 00:01:52,880

sickness from occurring when they step

46

00:01:56,950 --> 00:01:55,200

out into the vacuum of space most

47

00:01:59,429 --> 00:01:56,960

recently they've been conducting what is

48

00:02:01,830 --> 00:01:59,439

called lightweight in suit exercise

49

00:02:04,630 --> 00:02:01,840

protocols to slightly elevate their

50

00:02:07,270 --> 00:02:04,640

metabolic rate and hasten the dispersion

51
00:02:09,589 --> 00:02:07,280
of nitrogen out of their bloodstreams

52
00:02:12,070 --> 00:02:09,599
they are all set to go and in fact

53
00:02:14,229 --> 00:02:12,080
you can see kimbrough on the left being

54
00:02:16,470 --> 00:02:14,239
assisted by nasa astronaut mark vande

55
00:02:19,510 --> 00:02:16,480
high and megan mcarthur in the

56
00:02:22,150 --> 00:02:19,520
foreground as they prepare to

57
00:02:25,030 --> 00:02:22,160
install safer units or simplified aid

58
00:02:27,750 --> 00:02:25,040
for eva rescue units those are the jet

59
00:02:29,430 --> 00:02:27,760
powered backpacks that each spacewalker

60
00:02:31,589 --> 00:02:29,440
wears all the time

61
00:02:34,150 --> 00:02:31,599
to help them propel themselves back to

62
00:02:36,070 --> 00:02:34,160
the safety of iss structure in the

63
00:02:38,630 --> 00:02:36,080

highly unlikely event they would become

64

00:02:42,470 --> 00:02:38,640

untethered during the course of their

65

00:02:47,110 --> 00:02:44,790

the first two spacewalks in this series

66

00:02:50,229 --> 00:02:47,120

conducted on june 16th and again last

67

00:02:53,430 --> 00:02:50,239

sunday on june 20th on father's day were

68

00:02:56,470 --> 00:02:53,440

designed to install the first of these

69

00:02:59,110 --> 00:02:56,480

two iss rollout solar arrays you can see

70

00:03:02,710 --> 00:02:59,120

in this replay the first of those arrays

71

00:03:04,949 --> 00:03:02,720

for the 2b power channel on the port 6

72

00:03:08,229 --> 00:03:04,959

or far port truss of the international

73

00:03:10,550 --> 00:03:08,239

space station being unfurled after it

74

00:03:12,149 --> 00:03:10,560

was finally installed with a little bit

75

00:03:14,710 --> 00:03:12,159

of elbow grease

76
00:03:17,509 --> 00:03:14,720
to the mounting bracket a mod kit as it

77
00:03:18,470 --> 00:03:17,519
is called at the base of the mast

78
00:03:20,949 --> 00:03:18,480
canister

79
00:03:23,110 --> 00:03:20,959
on the port 6 truss on the far left side

80
00:03:25,270 --> 00:03:23,120
of the international space station

81
00:03:27,350 --> 00:03:25,280
these arrays are innovative new solar

82
00:03:30,789 --> 00:03:27,360
array designs that use high strain one

83
00:03:33,270 --> 00:03:30,799
piece carbon fiber composite material

84
00:03:35,750 --> 00:03:33,280
the stored strain energy of the booms

85
00:03:37,830 --> 00:03:35,760
provides the deployment capability and

86
00:03:39,910 --> 00:03:37,840
once the deployment uh once they're

87
00:03:42,710 --> 00:03:39,920
deployed the booms provide the arrays

88
00:03:45,430 --> 00:03:42,720

structural stiffness and their strength

89

00:03:47,589 --> 00:03:45,440

there's a series of bolts and restraints

90

00:03:49,589 --> 00:03:47,599

that have to be undone

91

00:03:52,390 --> 00:03:49,599

by the crew members during the course of

92

00:03:54,789 --> 00:03:52,400

the installation process to first

93

00:03:56,949 --> 00:03:54,799

tightly install the arrays onto that

94

00:03:58,550 --> 00:03:56,959

mounting bracket and then eventually

95

00:04:00,710 --> 00:03:58,560

deploy them

96

00:04:03,270 --> 00:04:00,720

in the foreground right now is space

97

00:04:06,710 --> 00:04:03,280

station commander aki hoshide from the

98

00:04:08,710 --> 00:04:06,720

japan aerospace exploration agency as he

99

00:04:11,429 --> 00:04:08,720

watches over vanda high and macarthur

100

00:04:13,350 --> 00:04:11,439

prepare pesquet and kimbrough for their

101
00:04:14,390 --> 00:04:13,360
activities outside of the international

102
00:04:15,910 --> 00:04:14,400
space station

103
00:04:21,670 --> 00:04:15,920
today

104
00:04:23,990 --> 00:04:21,680
second irosa or iss rollout solar array

105
00:04:26,150 --> 00:04:24,000
from its flight support equipment and

106
00:04:28,390 --> 00:04:26,160
translate it move it

107
00:04:30,150 --> 00:04:28,400
pesky will be hauling it at the end of

108
00:04:33,189 --> 00:04:30,160
the station's robotic arm that will be

109
00:04:34,790 --> 00:04:33,199
driven by megan mcarthur over to the

110
00:04:37,430 --> 00:04:34,800
port six truss

111
00:04:40,150 --> 00:04:37,440
mast canister and install it on a mod

112
00:04:43,670 --> 00:04:40,160
kit as was the case uh during the first

113
00:04:44,950 --> 00:04:43,680

two spacewalks by pesquet and kimbrough

114

00:04:46,310 --> 00:04:44,960

they will then prepare for the

115

00:04:47,590 --> 00:04:46,320

installation

116

00:04:50,150 --> 00:04:47,600

of that

117

00:04:52,310 --> 00:04:50,160

solar array on the mast canister and

118

00:04:55,110 --> 00:04:52,320

complete its installation and deploy it

119

00:04:57,590 --> 00:04:55,120

unfurl it on the mast canister to

120

00:05:00,790 --> 00:04:57,600

complete the second

121

00:05:02,070 --> 00:05:00,800

of the series of iss solar array

122

00:05:03,909 --> 00:05:02,080

installations

123

00:05:05,909 --> 00:05:03,919

there will be four more solar arrays

124

00:05:07,110 --> 00:05:05,919

flown to the international space station

125

00:05:09,029 --> 00:05:07,120

in pairs

126

00:05:11,110 --> 00:05:09,039

two additional pairs to be flown on

127

00:05:14,310 --> 00:05:11,120

spacex cargo dragon missions in the

128

00:05:17,749 --> 00:05:14,320

future the next pair will be installed

129

00:05:20,469 --> 00:05:17,759

for the 4a and 3a power channels on the

130

00:05:22,950 --> 00:05:20,479

port 4 and starboard 4 truss of the

131

00:05:25,990 --> 00:05:22,960

international space station the final

132

00:05:29,189 --> 00:05:26,000

set or final pair of arrays

133

00:05:32,550 --> 00:05:29,199

will be for the 3b and 1a power channels

134

00:05:34,629 --> 00:05:32,560

on the starboard 6 and starboard 4 solar

135

00:05:37,110 --> 00:05:34,639

arrays to complete the power

136

00:05:39,430 --> 00:05:37,120

augmentation for the international space

137

00:05:41,830 --> 00:05:39,440

station these are not designed to

138

00:05:43,990 --> 00:05:41,840

replace what are called the legacy or

139

00:05:46,310 --> 00:05:44,000

the older solar arrays on the station

140

00:05:48,870 --> 00:05:46,320

but rather to augment their power

141

00:05:51,590 --> 00:05:48,880

capability for the future delivery of

142

00:05:53,590 --> 00:05:51,600

science payloads and new modules to be

143

00:05:56,710 --> 00:05:53,600

launched to the international space

144

00:05:56,720 --> 00:06:08,629

okay and now it's time for

145

00:06:13,830 --> 00:06:10,870

these new solar arrays also have future

146

00:06:16,870 --> 00:06:13,840

application for future space exploration

147

00:06:18,230 --> 00:06:16,880

objectives for nasa the new gateway

148

00:06:20,790 --> 00:06:18,240

program

149

00:06:23,510 --> 00:06:20,800

is an outpost that will be launched to

150

00:06:25,350 --> 00:06:23,520

orbit the moon providing vital support

151
00:06:27,270 --> 00:06:25,360
for a long-term human return to the

152
00:06:29,990 --> 00:06:27,280
lunar surface as well as serving as a

153
00:06:32,230 --> 00:06:30,000
staging point for deep space exploration

154
00:06:35,029 --> 00:06:32,240
a critical component of the artemis

155
00:06:37,510 --> 00:06:35,039
program to return humans to the moon by

156
00:06:39,270 --> 00:06:37,520
2024 and beyond you can see a

157
00:06:42,150 --> 00:06:39,280
comparative uh

158
00:06:44,550 --> 00:06:42,160
graphic here that shows the heritage or

159
00:06:46,550 --> 00:06:44,560
legacy solar array wings that currently

160
00:06:50,870 --> 00:06:46,560
exist on the international space station

161
00:06:53,830 --> 00:06:50,880
and their dimension the new irosa or iss

162
00:06:56,629 --> 00:06:53,840
rollout solar array wings a derivative

163
00:06:58,309 --> 00:06:56,639

of that on the far right for ppe or the

164

00:07:00,870 --> 00:06:58,319

power and propulsion element for the

165

00:07:02,150 --> 00:07:00,880

gateway program will be a solar array

166

00:07:05,029 --> 00:07:02,160

that is

167

00:07:05,749 --> 00:07:05,039

wider about the same length

168

00:07:07,909 --> 00:07:05,759

but

169

00:07:10,550 --> 00:07:07,919

a heavier in mass

170

00:07:14,230 --> 00:07:10,560

solar array that will provide

171

00:07:16,070 --> 00:07:14,240

power for the gateway elements

172

00:07:18,309 --> 00:07:16,080

each of these uh power and propulsion

173

00:07:21,990 --> 00:07:18,319

elements will have two

174

00:07:24,469 --> 00:07:22,000

roll-out solar arrays available uh

175

00:07:26,070 --> 00:07:24,479

each of these new solar arrays for the

176

00:07:29,029 --> 00:07:26,080

gateway program

177

00:07:31,189 --> 00:07:29,039

will produce about 60 kilowatts of power

178

00:07:33,589 --> 00:07:31,199

the gateway elements will use this power

179

00:07:54,150 --> 00:07:33,599

to move around the moon while performing

180

00:07:58,230 --> 00:07:56,790

here in mission control the orbit one

181

00:08:00,230 --> 00:07:58,240

team of flight controllers has been

182

00:08:02,390 --> 00:08:00,240

working in the deep overnight hours

183

00:08:04,550 --> 00:08:02,400

overseeing the preparation

184

00:08:06,950 --> 00:08:04,560

for today's spacewalk by

185

00:08:09,589 --> 00:08:06,960

pesquet and kimbrough

186

00:08:11,510 --> 00:08:09,599

the eva officer at the moment on console

187

00:08:13,589 --> 00:08:11,520

sandy fletcher has reported back to

188

00:08:15,550 --> 00:08:13,599

flight director emily nelson

189

00:08:17,430 --> 00:08:15,560

that we expected to begin the

190

00:08:19,189 --> 00:08:17,440

depressurization of the crew lock

191

00:08:23,990 --> 00:08:19,199

section of the two-compartment quest

192

00:08:26,230 --> 00:08:24,000

airlock at about 6 17 a.m central time

193

00:08:28,230 --> 00:08:26,240

that would put us right on the money

194

00:08:30,309 --> 00:08:28,240

right on the clock to begin today's

195

00:08:33,110 --> 00:08:30,319

spacewalk in the neighborhood of about 7

196

00:08:35,750 --> 00:08:33,120

a.m central time a spacewalk expected to

197

00:08:38,389 --> 00:08:35,760

last six and a half or so hours in

198

00:08:40,550 --> 00:08:38,399

duration to complete the installation of

199

00:08:44,710 --> 00:08:40,560

the second of the two

200

00:08:46,070 --> 00:08:44,720

iss rollout solar arrays

201
00:08:53,110 --> 00:08:46,080
in the timeline right now for us to keep

202
00:08:57,829 --> 00:08:55,750
hey firm you have a go to continue and

203
00:08:59,269 --> 00:08:57,839
uh one more bit of good news for you i

204
00:09:07,110 --> 00:08:59,279
wanted to let you know that the four

205
00:09:22,870 --> 00:09:08,630
that's great news thanks for sharing

206
00:09:28,230 --> 00:09:24,870
as has been the case for the previous

207
00:09:29,910 --> 00:09:28,240
spacewalks uh we'll be uh sharing views

208
00:09:32,070 --> 00:09:29,920
from helmet cameras that the two

209
00:09:37,190 --> 00:09:32,080
spacewalkers will be wearing throughout

210
00:09:41,750 --> 00:09:40,070
a helmet camera will have the number 20

211
00:09:43,670 --> 00:09:41,760
in the lower right hand corner of your

212
00:09:46,150 --> 00:09:43,680
screen kimbrough's helmet camera will

213
00:09:48,070 --> 00:09:46,160

bear the number 22

214

00:09:50,150 --> 00:09:48,080

and they are both equipped with high

215

00:09:51,030 --> 00:09:50,160

definition cameras on their helmets as

216

00:09:53,030 --> 00:09:51,040

well

217

00:09:54,630 --> 00:09:53,040

to provide up close and personal views

218

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

of the work that they'll be doing

219

00:10:25,990 --> 00:09:56,399

outside of the international space

220

00:10:29,430 --> 00:10:27,509

a short time from now there'll be a

221

00:10:32,069 --> 00:10:29,440

handover of flight control teams here in

222

00:10:34,949 --> 00:10:32,079

mission control the orbit 2 team the

223

00:10:37,590 --> 00:10:34,959

execute team will be on console uh

224

00:10:39,990 --> 00:10:37,600

for the spacewalk itself once it gets

225

00:10:41,269 --> 00:10:40,000

underway you can see the roster of

226

00:10:43,990 --> 00:10:41,279

personnel

227

00:10:45,750 --> 00:10:44,000

for today's activities the flight

228

00:10:48,710 --> 00:10:45,760

director who will be overseeing the

229

00:10:50,870 --> 00:10:48,720

spacewalk itself is pooja jasrani

230

00:10:53,509 --> 00:10:50,880

she will be accompanied by

231

00:10:55,829 --> 00:10:53,519

what is called the ground iv capcom or

232

00:10:57,590 --> 00:10:55,839

spacewalk communicator jenny seidi of

233

00:11:00,790 --> 00:10:57,600

the canadian space agency she's an

234

00:11:02,710 --> 00:11:00,800

astronaut for the canadian space agency

235

00:11:04,870 --> 00:11:02,720

she'll be joined on council uh by

236

00:11:07,670 --> 00:11:04,880

veteran spacewalker and veteran

237

00:11:08,790 --> 00:11:07,680

astronaut drew feustel as well megan

238

00:11:11,750 --> 00:11:08,800

mcarthur

239

00:11:14,069 --> 00:11:11,760

who is assisting uh mark vande high in

240

00:11:16,790 --> 00:11:14,079

the suit up activities for pesquet and

241

00:11:18,949 --> 00:11:16,800

kimbrough macarthur will make her way to

242

00:11:21,110 --> 00:11:18,959

a the robotics workstation inside the

243

00:11:23,990 --> 00:11:21,120

international space station and will

244

00:11:26,230 --> 00:11:24,000

drive the canadarm2 robotic arm with

245

00:11:29,190 --> 00:11:26,240

pesquet at the end of the arm to

246

00:11:31,829 --> 00:11:29,200

maneuver him into position as he hauls

247

00:11:34,550 --> 00:11:31,839

the second solar array over to the work

248

00:11:37,350 --> 00:11:34,560

site on the far port truss of the

249

00:11:38,949 --> 00:11:37,360

international space station the p6 truss

250

00:11:41,030 --> 00:11:38,959

this truss

251

00:11:44,630 --> 00:11:41,040

segment the this array is being

252

00:11:46,710 --> 00:11:44,640

installed for the 4b power channel

253

00:11:50,150 --> 00:11:46,720

on literally the opposite side of the

254

00:15:13,750 --> 00:11:50,160

work site where the 2b array was

255

00:15:17,030 --> 00:15:15,910

this is mission control houston thomas

256

00:15:19,430 --> 00:15:17,040

pesquet

257

00:15:22,230 --> 00:15:19,440

now equipped with this jet powered

258

00:15:24,870 --> 00:15:22,240

backpack again called a safer unit

259

00:15:27,030 --> 00:15:24,880

the acronym for simplified aid for eva

260

00:15:29,670 --> 00:15:27,040

rescue has been moved into the

261

00:15:31,430 --> 00:15:29,680

outer compartment of the quest airlock

262

00:15:33,189 --> 00:15:31,440

the crew lock section

263

00:15:35,829 --> 00:15:33,199

the innermost compartment known as the

264

00:15:38,150 --> 00:15:35,839

equipment lock populated there by aki

265

00:15:40,790 --> 00:15:38,160

hoshide and megan macarthur

266

00:15:43,590 --> 00:15:40,800

about to affix uh the second of these

267

00:15:45,590 --> 00:15:43,600

safer units to the uh

268

00:15:49,350 --> 00:15:45,600

extra vehicular mobility unit or

269

00:15:52,550 --> 00:15:49,360

spacesuit for shane kimbrough

270

00:15:54,629 --> 00:15:52,560

all of this activity is the backdrop for

271

00:15:57,509 --> 00:15:54,639

another busy week aboard the

272

00:15:59,910 --> 00:15:57,519

international space station

273

00:16:03,030 --> 00:15:59,920

this coming tuesday

274

00:16:05,430 --> 00:16:03,040

the northrop grumman cygnus cargo craft

275

00:16:07,910 --> 00:16:05,440

the ss catherine johnson

276

00:16:10,069 --> 00:16:07,920

will be uh unbirthed from the

277

00:16:12,230 --> 00:16:10,079

earth-facing port of the unity module of

278

00:16:13,749 --> 00:16:12,240

the international space station and

279

00:16:16,550 --> 00:16:13,759

maneuvered into position for a

280

00:16:21,030 --> 00:16:16,560

ground-controlled robotic release

281

00:16:25,670 --> 00:16:23,269

june 29th

282

00:16:28,470 --> 00:16:25,680

our nasa tv coverage of that activity

283

00:16:30,310 --> 00:16:28,480

will begin at uh 11 a.m central time

284

00:16:33,590 --> 00:16:30,320

noon eastern time

285

00:16:37,030 --> 00:16:33,600

for an expected release time of 11 25

286

00:16:39,189 --> 00:16:37,040

a.m central 12 25 pm eastern time

287

00:16:41,430 --> 00:16:39,199

that will take place just seven hours

288

00:16:44,710 --> 00:16:41,440

before

289

00:16:47,990 --> 00:16:44,720

the russians launch the next unpiloted

290

00:16:49,749 --> 00:16:48,000

iss progress resupply vehicle the iss

291

00:16:51,509 --> 00:16:49,759

progress 78

292

00:16:56,310 --> 00:16:51,519

from the baikonur cosmodrome in

293

00:16:58,550 --> 00:16:56,320

kazakhstan aboard a soyuz 2.1a booster

294

00:17:00,790 --> 00:16:58,560

the progress loaded with almost two tons

295

00:17:03,430 --> 00:17:00,800

of food fuel and supplies

296

00:17:06,549 --> 00:17:03,440

for the international space station

297

00:17:08,230 --> 00:17:06,559

to be launched at 6 27 pm central time

298

00:17:12,549 --> 00:17:08,240

on tuesday

299

00:17:14,630 --> 00:17:12,559

7 27 pm eastern time 4 27 a.m baikonur

300

00:17:17,510 --> 00:17:14,640

time on june 30th

301
00:17:19,590 --> 00:17:17,520
our coverage of the progress 78 launch

302
00:17:21,350 --> 00:17:19,600
out of baikonur anchored here at the

303
00:17:23,510 --> 00:17:21,360
johnson space center

304
00:17:27,029 --> 00:17:23,520
will begin that evening

305
00:17:28,630 --> 00:17:27,039
at 6 pm central time 7 pm eastern time

306
00:17:30,150 --> 00:17:28,640
the progress to arrive at the

307
00:17:32,710 --> 00:17:30,160
international space station for a

308
00:17:34,150 --> 00:17:32,720
docking on the evening of july first and

309
00:18:52,070 --> 00:17:34,160
we'll be providing

310
00:18:56,870 --> 00:18:54,870
as we watch megan mcarthur

311
00:18:59,430 --> 00:18:56,880
assist in the installation of the uh

312
00:19:01,029 --> 00:18:59,440
simplified aid for eva rescue unit on

313
00:19:03,350 --> 00:19:01,039

the back of uh

314

00:19:05,270 --> 00:19:03,360

shane kimbrough's suit assisted by nasa

315

00:19:07,750 --> 00:19:05,280

astronaut mark vande high

316

00:19:10,950 --> 00:19:07,760

uh a reminder that we're taking your

317

00:19:12,070 --> 00:19:10,960

questions at hashtag ask nasa throughout

318

00:19:15,590 --> 00:19:12,080

the course

319

00:19:18,950 --> 00:19:15,600

of today's spacewalk so that we can uh

320

00:19:22,310 --> 00:19:18,960

explain uh some of the intricacies of uh

321

00:19:24,390 --> 00:19:22,320

this excursion by pesquet and kimbrough

322

00:19:27,110 --> 00:19:24,400

and related topics

323

00:19:29,110 --> 00:19:27,120

associated with human spaceflight

324

00:19:31,510 --> 00:19:29,120

a couple of questions uh while we have a

325

00:19:32,470 --> 00:19:31,520

moment here right off the bat uh many

326
00:19:35,110 --> 00:19:32,480
people

327
00:19:37,029 --> 00:19:35,120
are asking why the new solar arrays are

328
00:19:38,789 --> 00:19:37,039
not symmetrical in other words why are

329
00:19:41,270 --> 00:19:38,799
they a bit smaller

330
00:19:43,430 --> 00:19:41,280
than the legacy or existing solar arrays

331
00:19:45,990 --> 00:19:43,440
on the station the answer is

332
00:19:47,909 --> 00:19:46,000
that we're not replacing the old solar

333
00:19:49,830 --> 00:19:47,919
arrays we're simply augmenting their

334
00:19:51,270 --> 00:19:49,840
power capability

335
00:19:54,390 --> 00:19:51,280
so we're

336
00:19:57,590 --> 00:19:54,400
the new arrays are only shadowing

337
00:19:59,830 --> 00:19:57,600
a portion of the older arrays so they

338
00:20:02,070 --> 00:19:59,840

can provide an additional 20 kilowatts

339

00:20:03,430 --> 00:20:02,080

of power to the electrical output

340

00:20:06,950 --> 00:20:03,440

currently

341

00:20:08,710 --> 00:20:06,960

being generated by the older arrays

342

00:20:09,909 --> 00:20:08,720

there's only there are eight power

343

00:20:12,390 --> 00:20:09,919

channels

344

00:20:16,230 --> 00:20:12,400

on the international space station only

345

00:20:18,310 --> 00:20:16,240

six solar arrays are being installed in

346

00:20:21,350 --> 00:20:18,320

these first two and then two additional

347

00:20:23,830 --> 00:20:21,360

pairs for a total of six to accommodate

348

00:20:24,710 --> 00:20:23,840

six out of the eight power channels

349

00:20:41,270 --> 00:20:24,720

the

350

00:20:44,230 --> 00:20:41,280

on twitter kyle is asking how many solar

351

00:20:46,950 --> 00:20:44,240

arrays are there there are eight in all

352

00:20:49,190 --> 00:20:46,960

how long are they well we explained in a

353

00:20:52,390 --> 00:20:49,200

graphic a short time ago that the older

354

00:20:58,230 --> 00:20:52,400

solar rays known as the legacy arrays

355

00:21:02,470 --> 00:20:59,909

at the beginning of their lifetime they

356

00:21:04,310 --> 00:21:02,480

each generated about 32 kilowatts a

357

00:21:07,590 --> 00:21:04,320

piece

358

00:21:09,029 --> 00:21:07,600

on the earth they have a mass of 2 400

359

00:21:11,830 --> 00:21:09,039

pounds a piece

360

00:21:14,830 --> 00:21:11,840

the first pair of solar arrays were

361

00:21:18,149 --> 00:21:14,840

delivered on the sts-97

362

00:21:21,350 --> 00:21:18,159

mission for the port 6 trust the same

363

00:21:23,029 --> 00:21:21,360

place where these first two new solar

364

00:21:26,390 --> 00:21:23,039

arrays the rollout solar arrays are

365

00:21:27,190 --> 00:21:26,400

being installed for power augmentation

366

00:21:30,390 --> 00:21:27,200

these

367

00:21:34,230 --> 00:21:30,400

irosa or iss rollout solar arrays

368

00:21:37,909 --> 00:21:34,240

are about 63 feet long by 20 feet wide

369

00:21:39,990 --> 00:21:37,919

they have a mass of 750 pounds apiece

370

00:21:42,549 --> 00:21:40,000

and again will generate about 20

371

00:24:40,070 --> 00:21:42,559

additional kilowatts of power at the

372

00:24:45,830 --> 00:24:43,110

for viewers on nasa television

373

00:24:47,990 --> 00:24:45,840

our spacewalk coverage that's underway

374

00:24:49,830 --> 00:24:48,000

now that shane kimbrough has also been

375

00:24:51,990 --> 00:24:49,840

moved into the crew lock section of the

376

00:24:53,990 --> 00:24:52,000

quest airlock we are running our

377

00:24:56,470 --> 00:24:54,000

spacewalk coverage uninterrupted on the

378

00:24:58,630 --> 00:24:56,480

public channel of nasa television

379

00:25:00,870 --> 00:24:58,640

the media channel at the moment

380

00:25:04,070 --> 00:25:00,880

is uh being used

381

00:25:06,230 --> 00:25:04,080

and being held in advance for

382

00:25:08,789 --> 00:25:06,240

possible coverage uh coming up in the

383

00:25:10,630 --> 00:25:08,799

next hour of a sounding rocket launch

384

00:25:12,230 --> 00:25:10,640

out of the wallops flight facility in

385

00:25:14,549 --> 00:25:12,240

virginia

386

00:25:17,590 --> 00:25:14,559

once that's completed

387

00:25:19,750 --> 00:25:17,600

the spacewalk coverage will also air on

388

00:25:22,870 --> 00:25:19,760

the media channel but for now

389

00:25:25,029 --> 00:25:22,880

the spacewalk activities leading up to

390

00:25:27,430 --> 00:25:25,039

an expected start of the the spacewalk

391

00:28:38,630 --> 00:25:27,440

about an hour from now is on the public

392

00:28:41,510 --> 00:28:40,310

this is mission control houston once

393

00:28:43,190 --> 00:28:41,520

again uh

394

00:28:45,510 --> 00:28:43,200

you're looking live inside the quest

395

00:28:46,710 --> 00:28:45,520

airlock of the international space

396

00:28:48,789 --> 00:28:46,720

station

397

00:28:51,029 --> 00:28:48,799

shane kimbrough and thomas pesquet are

398

00:28:52,470 --> 00:28:51,039

inside the crew lock section

399

00:28:54,070 --> 00:28:52,480

mark vande high

400

00:28:55,750 --> 00:28:54,080

is also in there

401
00:28:57,590 --> 00:28:55,760
helping to position

402
00:28:59,830 --> 00:28:57,600
the two space walkers for today's

403
00:29:01,110 --> 00:28:59,840
excursion outside of quest

404
00:29:03,430 --> 00:29:01,120
to install

405
00:29:06,149 --> 00:29:03,440
unfold and unfurl the second of the two

406
00:29:08,549 --> 00:29:06,159
iss rollout solar arrays

407
00:29:09,990 --> 00:29:08,559
this one for the 4b

408
00:29:13,269 --> 00:29:10,000
power channel

409
00:29:15,510 --> 00:29:13,279
on the port 6 truss of the complex

410
00:29:17,190 --> 00:29:15,520
the first of the two arrays

411
00:29:19,510 --> 00:29:17,200
installed

412
00:29:23,110 --> 00:29:19,520
and unfolded and unfurled this past

413
00:29:25,590 --> 00:29:23,120

sunday for the 2b power channel as the

414

00:29:28,230 --> 00:29:25,600

power augmentation of the station is

415

00:29:29,669 --> 00:29:28,240

well underway now this second of six

416

00:29:31,750 --> 00:29:29,679

planned

417

00:29:33,029 --> 00:29:31,760

iss roll out solar arrays to be

418

00:29:35,510 --> 00:29:33,039

installed to

419

00:29:44,389 --> 00:29:35,520

increase the power capability of the

420

00:29:49,909 --> 00:29:47,029

a short time from now the hatch

421

00:29:52,149 --> 00:29:49,919

between the two sections of quest

422

00:29:54,789 --> 00:29:52,159

will be closed to isolate the space

423

00:29:56,230 --> 00:29:54,799

walkers in the crew lock

424

00:29:58,389 --> 00:29:56,240

they then

425

00:30:00,549 --> 00:29:58,399

will begin the depressurization of the

426
00:30:01,590 --> 00:30:00,559
crew lock down to vacuum in a two-step

427
00:30:04,630 --> 00:30:01,600
fashion

428
00:30:06,470 --> 00:30:04,640
first from 14.2 pounds per square inch

429
00:30:07,590 --> 00:30:06,480
of pressure down to five

430
00:30:10,630 --> 00:30:07,600
pounds

431
00:30:13,110 --> 00:30:10,640
of pressure per square inch

432
00:30:15,669 --> 00:30:13,120
we'll take a pause to do systems and

433
00:30:17,909 --> 00:30:15,679
communications checks and leak checks on

434
00:30:20,389 --> 00:30:17,919
the two space walker suits

435
00:30:22,470 --> 00:30:20,399
before the depressurization continues

436
00:30:24,549 --> 00:30:22,480
down to vacuum

437
00:30:26,549 --> 00:30:24,559
that then will be followed by final

438
00:30:29,110 --> 00:30:26,559

communications checks

439

00:30:31,510 --> 00:30:29,120

and the opening of the hatch to the

440

00:30:33,750 --> 00:30:31,520

quest airlock the official start of

441

00:30:36,870 --> 00:30:33,760

today's spacewalk as it always is will

442

00:32:14,149 --> 00:30:36,880

be measured at the time that the crew

443

00:32:18,230 --> 00:32:16,070

this is mission control houston mark

444

00:32:19,350 --> 00:32:18,240

vande high now has closed and latched

445

00:32:21,190 --> 00:32:19,360

the hatch

446

00:32:23,990 --> 00:32:21,200

separating the equipment lock section

447

00:32:29,269 --> 00:32:24,000

that he and megan mcarthur are in

448

00:32:31,509 --> 00:32:29,279

we are complete with steps 72 and 73

449

00:32:34,470 --> 00:32:31,519

good morning megan and crew great to

450

00:32:36,630 --> 00:32:34,480

hear it we copy and we'll start putting

451
00:32:37,990 --> 00:32:36,640
the com config into work so the crew

452
00:32:40,149 --> 00:32:38,000
should have a heads up that they'll be

453
00:32:43,029 --> 00:32:40,159
uh hot mic shortly on space to ground

454
00:32:44,950 --> 00:32:43,039
one

455
00:32:47,029 --> 00:32:44,960
okay drew we copy that great to hear

456
00:32:48,950 --> 00:32:47,039
your voice welcome to the over 2 team

457
00:32:52,149 --> 00:32:48,960
and many thanks to the orbit 1 team for

458
00:32:59,029 --> 00:32:53,430
they're still working their way out of

459
00:33:03,269 --> 00:33:01,110
the orbit 2 team of flight controllers

460
00:33:05,750 --> 00:33:03,279
beginning a handover here in the flight

461
00:33:07,509 --> 00:33:05,760
control room here in mission control

462
00:33:09,509 --> 00:33:07,519
the voice you just heard was that of

463
00:33:10,630 --> 00:33:09,519

veteran astronaut and spacewalker drew

464

00:33:12,870 --> 00:33:10,640

feustel

465

00:33:13,750 --> 00:33:12,880

he will be

466

00:33:15,909 --> 00:33:13,760

the

467

00:33:17,830 --> 00:33:15,919

capcom or spacecraft communicator

468

00:33:18,950 --> 00:33:17,840

talking to megan macarthur and mark

469

00:33:20,789 --> 00:33:18,960

vande high

470

00:33:22,710 --> 00:33:20,799

and the two spacewalkers who are now on

471

00:33:25,990 --> 00:33:22,720

the other side of the

472

00:33:27,669 --> 00:33:26,000

hatch in the crew lock section of quest

473

00:33:29,350 --> 00:33:27,679

up through the time that the

474

00:33:31,590 --> 00:33:29,360

depressurization

475

00:33:32,789 --> 00:33:31,600

of the crew lock section of quest is

476
00:33:34,710 --> 00:33:32,799
complete

477
00:33:36,870 --> 00:33:34,720
then communications chores will be

478
00:33:39,430 --> 00:33:36,880
handed over to canadian space agency

479
00:33:40,389 --> 00:33:39,440
astronaut jenny seidi who will be the

480
00:33:42,630 --> 00:33:40,399
voice

481
00:33:45,190 --> 00:33:42,640
and the choreographer talking the two

482
00:33:46,470 --> 00:33:45,200
space walkers through their procedures

483
00:36:09,349 --> 00:33:46,480
throughout the course of today's

484
00:36:09,359 --> 00:37:29,910
uh

485
00:37:29,920 --> 00:38:25,990
so

486
00:38:29,349 --> 00:38:27,910
this is mission control houston as you

487
00:38:30,390 --> 00:38:29,359
can see

488
00:38:32,390 --> 00:38:30,400

we are

489

00:38:33,990 --> 00:38:32,400

watching the activities in the quest

490

00:38:36,390 --> 00:38:34,000

airlock of the international space

491

00:38:38,950 --> 00:38:36,400

station mark vande high on the right

492

00:38:42,230 --> 00:38:38,960

on the left is megan mcarthur

493

00:38:44,230 --> 00:38:42,240

they have completed the preparations for

494

00:38:45,190 --> 00:38:44,240

shane kimbrough and thomas pesquet to

495

00:38:47,990 --> 00:38:45,200

begin

496

00:38:50,150 --> 00:38:48,000

the 241st spacewalk in support of space

497

00:38:53,510 --> 00:38:50,160

station assembly maintenance and

498

00:38:56,550 --> 00:38:53,520

upgrades today's activities uh the third

499

00:38:59,589 --> 00:38:56,560

in the series over the past nine days to

500

00:39:02,950 --> 00:38:59,599

install today the second in the series

501
00:39:05,510 --> 00:39:02,960
of iss rollout solar arrays this one

502
00:39:07,990 --> 00:39:05,520
also on the p6 or port 6 truss of the

503
00:39:10,470 --> 00:39:08,000
international space station this one for

504
00:39:11,670 --> 00:39:10,480
the 4b power channel on the opposite

505
00:39:13,990 --> 00:39:11,680
side

506
00:39:14,870 --> 00:39:14,000
to which the 2b

507
00:39:17,349 --> 00:39:14,880
channel

508
00:39:20,950 --> 00:39:17,359
iss solar array was installed and

509
00:39:24,950 --> 00:39:23,430
the two spacewalkers are suited up they

510
00:39:27,190 --> 00:39:24,960
have pre-breathed

511
00:39:28,710 --> 00:39:27,200
pure oxygen to cleanse the nitrogen out

512
00:39:31,190 --> 00:39:28,720
of their bloodstreams they've been moved

513
00:39:33,430 --> 00:39:31,200

inside the crew lock section of quest

514

00:39:35,910 --> 00:39:33,440

the hatch of course now closed

515

00:39:37,910 --> 00:39:35,920

as we stand by for the start of the

516

00:39:40,310 --> 00:39:37,920

depressurization of the crew lock about

517

00:39:42,470 --> 00:39:40,320

six and a half minutes from now taking

518

00:39:44,870 --> 00:39:42,480

the crew lock down to vacuum

519

00:39:46,550 --> 00:39:44,880

as the precursor to the opening of the

520

00:39:49,190 --> 00:39:46,560

outer thermal cover

521

00:39:52,069 --> 00:39:49,200

and the outer hatch to quest

522

00:39:54,390 --> 00:39:52,079

and the initiation of battery power on

523

00:39:55,990 --> 00:39:54,400

the two spacesuits for kimbrough and

524

00:39:57,910 --> 00:39:56,000

pesquet that will start the clock

525

00:40:00,710 --> 00:39:57,920

running and the official start of

526

00:40:03,109 --> 00:40:00,720

today's excursion

527

00:40:05,750 --> 00:40:03,119

this is the ninth space walk for shane

528

00:40:07,670 --> 00:40:05,760

kimbrough the fifth for tomah pesquet in

529

00:40:35,589 --> 00:40:07,680

the ninth to be conducted out of the

530

00:40:38,710 --> 00:40:37,349

station houston space to ground watch

531

00:40:40,470 --> 00:40:38,720

his heads up for the crew you guys are

532

00:40:41,829 --> 00:40:40,480

now hot mike good morning tomorrow and

533

00:40:45,030 --> 00:40:41,839

shane looking forward to seeing you guys

534

00:40:48,710 --> 00:40:46,230

hey good morning drew's good to see you

535

00:40:50,230 --> 00:40:48,720

here your voice and uh if they're not

536

00:40:52,150 --> 00:40:50,240

out yet but we heard they're out the

537

00:40:54,470 --> 00:40:52,160

door congrats on the old v1 team for

538

00:40:58,150 --> 00:40:54,480

getting us ready

539

00:40:58,160 --> 00:41:07,510

thanks

540

00:41:12,550 --> 00:41:09,589

shane on the uia you can check the

541

00:41:15,430 --> 00:41:12,560

depressed pump power is off

542

00:41:17,270 --> 00:41:15,440

and the depress pump enable led is

543

00:41:23,349 --> 00:41:17,280

off

544

00:41:28,150 --> 00:41:23,359

and houston we are standing by for your

545

00:41:32,069 --> 00:41:30,630

copy stand by we need to get a go around

546

00:41:42,630 --> 00:41:32,079

the room and then we'll be back with you

547

00:41:46,710 --> 00:41:45,030

and houston or station just a heads up

548

00:41:48,710 --> 00:41:46,720

we're showing still about five minutes

549

00:41:50,390 --> 00:41:48,720

for the gopher depressed anyways with

550

00:43:07,430 --> 00:41:50,400

the timer so we'll be standing by for

551
00:43:10,790 --> 00:43:09,349
megan macarthur on the left side of your

552
00:43:11,750 --> 00:43:10,800
screen was one of the crew members

553
00:43:13,670 --> 00:43:11,760
launched

554
00:43:16,550 --> 00:43:13,680
to the international space station on a

555
00:43:18,630 --> 00:43:16,560
spacex falcon 9 rocket aboard the

556
00:43:20,230 --> 00:43:18,640
crew dragon endeavour

557
00:43:22,069 --> 00:43:20,240
back in april

558
00:43:23,670 --> 00:43:22,079
just two weeks after mark vande high

559
00:43:25,270 --> 00:43:23,680
who's on the right side of your screen

560
00:43:28,390 --> 00:43:25,280
launched to the station

561
00:43:29,430 --> 00:43:28,400
with oleg novitskiy and piotr duderov

562
00:43:37,589 --> 00:43:29,440
on

563
00:43:42,870 --> 00:43:39,270

here's a picture of the

564

00:43:45,270 --> 00:43:42,880

entire expedition 65 crew

565

00:43:47,750 --> 00:43:45,280

from left to right is dubrov shane

566

00:43:50,150 --> 00:43:47,760

kimbrough megan macarthur thomas pesquet

567

00:43:51,829 --> 00:43:50,160

aki hoshide who's the current commander

568

00:43:53,750 --> 00:43:51,839

of the complex

569

00:43:55,510 --> 00:43:53,760

oleg novitskiy

570

00:43:58,550 --> 00:43:55,520

and mark vande high

571

00:44:01,030 --> 00:43:58,560

dubrov and nowitzki will be quite busy

572

00:44:03,430 --> 00:44:01,040

during the month of july

573

00:44:06,230 --> 00:44:03,440

with the impending launch of the new

574

00:44:07,589 --> 00:44:06,240

nyoka multipurpose laboratory module in

575

00:44:10,069 --> 00:44:07,599

the offing

576

00:44:12,790 --> 00:44:10,079

on july 15th from the baikonur

577

00:44:15,270 --> 00:44:12,800

cosmodrome in kazakhstan atop a

578

00:44:18,470 --> 00:44:15,280

krunichev proton rocket

579

00:44:20,710 --> 00:44:18,480

it will take eight days in transit

580

00:44:24,150 --> 00:44:20,720

for an automated docking

581

00:44:25,430 --> 00:44:24,160

to the earth-facing port

582

00:44:27,109 --> 00:44:25,440

of the russian segment of the

583

00:44:28,790 --> 00:44:27,119

international space station currently

584

00:44:30,309 --> 00:44:28,800

occupied by the piers docking

585

00:44:31,670 --> 00:44:30,319

compartment

586

00:44:34,870 --> 00:44:31,680

which has uh

587

00:44:38,150 --> 00:44:34,880

been a docking port and spacewalking

588

00:44:40,069 --> 00:44:38,160

airlock for russian-based spacewalks for

589

00:44:43,109 --> 00:44:40,079

the past 20 years

590

00:44:45,349 --> 00:44:43,119

piers has now been deactivated

591

00:44:46,670 --> 00:44:45,359

and will be undocked

592

00:44:50,230 --> 00:44:46,680

via a

593

00:44:52,710 --> 00:44:50,240

unpiloted iss progress 77 cargo ship

594

00:44:54,870 --> 00:44:52,720

that is currently docked to piers

595

00:44:57,510 --> 00:44:54,880

the undocking of

596

00:45:00,550 --> 00:44:57,520

iss progress 77 and piers scheduled for

597

00:45:02,470 --> 00:45:00,560

july 17th two days after the

598

00:45:04,790 --> 00:45:02,480

multipurpose laboratory module is

599

00:45:06,790 --> 00:45:04,800

launched out of baikonur

600

00:45:09,750 --> 00:45:06,800

the progress will use its engines to

601
00:45:12,950 --> 00:45:09,760
deorbit and dispose of itself and piers

602
00:45:14,790 --> 00:45:12,960
to a fiery demise in the pacific ocean

603
00:45:17,190 --> 00:45:14,800
appears his

604
00:45:19,589 --> 00:45:17,200
lifetime aboard the station has come to

605
00:45:21,750 --> 00:45:19,599
an end and is being replaced

606
00:45:23,829 --> 00:45:21,760
by the huge multi-purpose laboratory

607
00:45:24,950 --> 00:45:23,839
module that will serve as a science uh

608
00:45:27,829 --> 00:45:24,960
platform

609
00:45:29,270 --> 00:45:27,839
as well as a venue for a european

610
00:45:31,270 --> 00:45:29,280
robotic arm

611
00:45:56,710 --> 00:45:31,280
and an airlock from which spacewalks can

612
00:46:01,670 --> 00:45:59,109
and we're standing by just moments from

613
00:46:26,829 --> 00:46:01,680

now for a go for the depressurization of

614

00:46:29,750 --> 00:46:28,150

uh me for now

615

00:46:32,069 --> 00:46:29,760

at some point i'll

616

00:46:33,829 --> 00:46:32,079

actually move forward to open the house

617

00:46:35,910 --> 00:46:33,839

okay okay

618

00:46:38,550 --> 00:46:35,920

station houston space to ground one you

619

00:46:45,589 --> 00:46:38,560

have a go to start on the crew lock

620

00:46:49,349 --> 00:46:46,950

that's in work

621

00:46:53,109 --> 00:46:49,359

all right shane on the uia switch the

622

00:46:56,630 --> 00:46:54,710

power is on

623

00:47:03,030 --> 00:46:56,640

okay wait 10 seconds for a complete

624

00:47:07,589 --> 00:47:04,710

okay 10 seconds

625

00:47:10,980 --> 00:47:07,599

depress pump manual isolation valve to

626

00:47:10,990 --> 00:47:20,230

[Music]

627

00:47:25,109 --> 00:47:22,470

and the depressurization of the crew

628

00:47:26,870 --> 00:47:25,119

lock is now underway

629

00:47:28,630 --> 00:47:26,880

once again this will be in a two-step

630

00:47:30,309 --> 00:47:28,640

fashion first uh

631

00:47:32,950 --> 00:47:30,319

taking the pressure

632

00:47:36,390 --> 00:47:32,960

inside the crew lock or outermost

633

00:47:39,190 --> 00:47:36,400

section of quest down to five psi

634

00:47:41,430 --> 00:47:39,200

we'll pause for leak checks

635

00:47:43,829 --> 00:47:41,440

by the two space walkers of their extra

636

00:47:46,470 --> 00:47:43,839

vehicular mobility units

637

00:47:53,109 --> 00:47:46,480

before the depressurization resumes down

638

00:47:57,829 --> 00:47:55,109

once again answering your questions on

639

00:47:58,790 --> 00:47:57,839

the hashtag ask nasa maggie on twitter

640

00:48:01,510 --> 00:47:58,800

asking

641

00:48:04,230 --> 00:48:01,520

do astronauts always go out on an eva or

642

00:48:06,470 --> 00:48:04,240

spacewalk in a pair do they ever go out

643

00:48:08,309 --> 00:48:06,480

by themselves the answer they're always

644

00:48:10,630 --> 00:48:08,319

in a pair

645

00:48:11,589 --> 00:48:10,640

only one time in human space flight

646

00:48:13,589 --> 00:48:11,599

history

647

00:48:15,829 --> 00:48:13,599

did three astronauts go out on a

648

00:48:19,030 --> 00:48:15,839

spacewalk that was on the maiden launch

649

00:48:21,589 --> 00:48:19,040

of the shuttle endeavour on the sts-49

650

00:48:24,150 --> 00:48:21,599

mission

651
00:48:25,670 --> 00:48:24,160
in which rick tom akers and pierre

652
00:48:29,030 --> 00:48:25,680
thuet went out

653
00:48:30,150 --> 00:48:29,040
to perform a manual grab of the intelsat

654
00:48:31,829 --> 00:48:30,160
satellite

655
00:48:35,910 --> 00:48:31,839
that encountered

656
00:48:35,920 --> 00:48:41,430
with its retrieval for repairs

657
00:48:44,710 --> 00:48:42,230
but

658
00:48:47,270 --> 00:48:44,720
typically astronauts will conduct

659
00:48:49,270 --> 00:48:47,280
spacewalks in pairs

660
00:48:51,829 --> 00:48:49,280
because of the volume of work that's

661
00:48:54,150 --> 00:48:51,839
required and because of the necessity

662
00:48:57,109 --> 00:48:54,160
for safety reasons to make sure that a

663
00:48:58,230 --> 00:48:57,119

so-called buddy system is in work

664

00:49:00,470 --> 00:48:58,240

to allow

665

00:49:02,549 --> 00:49:00,480

the two space walkers to have

666

00:49:04,150 --> 00:49:02,559

another crew member out there with them

667

00:49:05,829 --> 00:49:04,160

to assist

668

00:49:21,910 --> 00:49:05,839

in the unlikely event a problem would

669

00:49:21,920 --> 00:49:32,150

stable

670

00:49:32,160 --> 00:49:43,670

playing for me

671

00:49:43,680 --> 00:50:52,870

[Applause]

672

00:50:52,880 --> 00:51:21,349

uh

673

00:51:21,359 --> 00:51:50,710

happy

674

00:53:51,030 --> 00:53:28,470

um

675

00:53:55,510 --> 00:53:53,190

we've got about one psi to get to this

676
00:53:57,829 --> 00:53:55,520
but when the crew lock is at 6.0 and

677
00:54:21,190 --> 00:53:57,839
both of you can expect an alert tone

678
00:54:21,200 --> 00:55:15,109
huh

679
00:55:15,119 --> 00:55:44,230
6.0

680
00:55:56,390 --> 00:55:46,150
and shane we're waiting for the next

681
00:56:00,470 --> 00:55:58,390
mark vande high

682
00:56:03,109 --> 00:56:00,480
keeping the two space walkers on the

683
00:56:05,910 --> 00:56:03,119
other side of the hatch up to speed as

684
00:56:07,109 --> 00:56:05,920
the depressurization continues down to 5

685
00:56:08,710 --> 00:56:07,119
psi

686
00:56:11,829 --> 00:56:08,720
in the crew lock

687
00:56:14,390 --> 00:56:11,839
and again at that point we'll pause

688
00:56:17,270 --> 00:56:14,400

to permit systems checks leak checks of

689

00:56:18,309 --> 00:56:17,280

the two space walkers suits to take

690

00:56:20,549 --> 00:56:18,319

place

691

00:56:38,950 --> 00:56:20,559

before resuming the depressurization of

692

00:56:42,549 --> 00:56:40,549

here in the flight control room at

693

00:56:45,990 --> 00:56:42,559

mission control in houston the orbit 2

694

00:56:48,470 --> 00:56:46,000

team of flight controllers has now taken

695

00:56:50,309 --> 00:56:48,480

their positions on console to execute

696

00:56:51,349 --> 00:56:50,319

today's spacewalk

697

00:56:53,829 --> 00:56:51,359

today's

698

00:56:56,710 --> 00:56:53,839

team is led by flight director puja

699

00:56:59,190 --> 00:56:56,720

gesrani at the bottom of your screen

700

00:57:01,990 --> 00:56:59,200

to her right in the white jacket is uh

701
00:57:04,549 --> 00:57:02,000
the ground iv or spacewalk communicator

702
00:57:06,710 --> 00:57:04,559
jenny seidi canadian space agency

703
00:57:08,390 --> 00:57:06,720
astronaut she'll be talking directly to

704
00:57:10,470 --> 00:57:08,400
the spacewalkers during the course of

705
00:57:12,870 --> 00:57:10,480
their excursion outside of the

706
00:57:14,630 --> 00:57:12,880
international space station and to her

707
00:57:16,390 --> 00:57:14,640
right is veteran astronaut and space

708
00:57:18,470 --> 00:57:16,400
walker drew feustel

709
00:57:21,030 --> 00:57:18,480
who is guiding the space walkers through

710
00:57:22,870 --> 00:57:21,040
this portion of the pre-spacewalk

711
00:57:25,349 --> 00:57:22,880
preparations he will also be

712
00:57:27,430 --> 00:57:25,359
communicating when required to megan

713
00:57:30,069 --> 00:57:27,440

macarthur and mark vande high inside the

714

00:57:31,990 --> 00:57:30,079

international space station while thomas

715

00:57:35,670 --> 00:57:32,000

pesquet and shane kimbrough are

716

00:57:37,109 --> 00:57:35,680

conducting their work outside

717

00:57:38,230 --> 00:57:37,119

follow the display instructions and let

718

00:57:42,150 --> 00:57:38,240

me know when you have leak check

719

00:57:42,160 --> 00:57:49,670

work

720

00:57:54,230 --> 00:57:52,069

and on console in the back row here in

721

00:57:56,230 --> 00:57:54,240

mission control is the lead space walk

722

00:57:59,670 --> 00:57:56,240

officer keith johnson

723

00:58:02,230 --> 00:57:59,680

veteran spacewalk officer who has

724

00:58:06,390 --> 00:58:02,240

presided over all of the spacewalks

725

00:58:08,789 --> 00:58:06,400

associated with the iss solar array

726
00:58:10,870 --> 00:58:08,799
activity these roll out solar arrays and

727
00:58:12,309 --> 00:58:10,880
all of the procedures associated with

728
00:58:14,710 --> 00:58:12,319
this activity

729
00:58:16,230 --> 00:58:14,720
he will be talking to his back room

730
00:58:17,990 --> 00:58:16,240
engineers

731
00:58:19,349 --> 00:58:18,000
as

732
00:58:22,630 --> 00:58:19,359
they work their way through the

733
00:58:24,710 --> 00:58:22,640
procedures checklists and when required

734
00:58:43,750 --> 00:58:24,720
make amendments to the timeline through

735
00:58:47,750 --> 00:58:45,829
check complete for everyone

736
00:58:49,510 --> 00:58:47,760
please dvd

737
00:58:51,589 --> 00:58:49,520
happy we checked and please

738
00:58:54,710 --> 00:58:51,599

and ev2 both of you switch your make

739

00:59:53,670 --> 00:58:54,720

confirm your o2 actuators or eva

740

00:59:57,510 --> 00:59:55,030

all right eva

741

00:59:59,510 --> 00:59:57,520

i'm an eva freebt

742

01:00:01,190 --> 00:59:59,520

eva v2

743

01:00:03,109 --> 01:00:01,200

has switched the depress pump manual

744

01:00:04,870 --> 01:00:03,119

manual isolation valve to open and

745

01:00:09,670 --> 01:00:04,880

expect an alert tone

746

01:00:14,069 --> 01:00:12,150

the emergency mpv is now open and on

747

01:00:16,870 --> 01:00:14,079

your dcm's monitor the seat pressure

748

01:00:18,549 --> 01:00:16,880

gauge stays less than five decimal five

749

01:00:23,670 --> 01:00:18,559

our next trigger will be when you get

750

01:00:26,870 --> 01:00:25,270

we're in a brief handover between

751
01:00:29,190 --> 01:00:26,880
satellites on our tracking and data

752
01:00:31,829 --> 01:00:29,200
relay satellite system about to regain

753
01:00:33,430 --> 01:00:31,839
our downlink video from the station and

754
01:00:35,990 --> 01:00:33,440
there it is

755
01:00:38,069 --> 01:00:36,000
the depressurization of the crewlock

756
01:00:40,549 --> 01:00:38,079
section of quest has resumed after a

757
01:00:43,349 --> 01:00:40,559
brief pause good leak checks on the

758
01:00:44,950 --> 01:00:43,359
crew's spacesuits everything in order

759
01:01:02,549 --> 01:00:44,960
for the start of today's spacewalk

760
01:01:02,559 --> 01:01:33,750
uh

761
01:01:33,760 --> 01:01:39,430
please try to save always one

762
01:01:39,440 --> 01:02:06,549
2p53

763
01:02:12,710 --> 01:02:08,710

once again if you're just joining us on

764

01:02:15,430 --> 01:02:12,720

nasa television and on the web

765

01:02:17,750 --> 01:02:15,440

we are moments away from the start of uh

766

01:02:19,589 --> 01:02:17,760

the third spacewalk in the past nine

767

01:02:22,470 --> 01:02:19,599

days by shane kimbrough and thomas

768

01:02:25,270 --> 01:02:22,480

pesquet of the european space agency

769

01:02:26,309 --> 01:02:25,280

today's spacewalk to

770

01:02:28,309 --> 01:02:26,319

remove

771

01:02:31,270 --> 01:02:28,319

from flight support equipment the second

772

01:02:33,430 --> 01:02:31,280

of the two iss rollout solar arrays

773

01:02:35,190 --> 01:02:33,440

brand new solar arrays designed to

774

01:02:37,270 --> 01:02:35,200

augment the power capability of the

775

01:02:39,990 --> 01:02:37,280

international space station

776

01:02:43,990 --> 01:02:40,000

this particular array to be moved

777

01:02:45,510 --> 01:02:44,000

over to the far port truss the p6 truss

778

01:02:47,029 --> 01:02:45,520

on the left side of the international

779

01:02:48,549 --> 01:02:47,039

space station to be installed on a

780

01:02:51,670 --> 01:02:48,559

mounting bracket

781

01:02:54,390 --> 01:02:51,680

and then unfolded and unfurled

782

01:02:56,789 --> 01:02:54,400

for the 4b power channel joining a

783

01:02:59,910 --> 01:02:56,799

similar array that was installed this

784

01:03:02,230 --> 01:02:59,920

past sunday and unfolded for the 2b

785

01:03:04,230 --> 01:03:02,240

power channel that array is up and

786

01:03:58,069 --> 01:03:04,240

running and generating great electric

787

01:04:09,109 --> 01:03:59,750

right now

788

01:04:13,510 --> 01:04:11,270

all right with the reading of 2.0 chain

789

01:04:15,430 --> 01:04:13,520

you can switch the defense pump manual

790

01:04:17,270 --> 01:04:15,440

isolation valve to close

791

01:04:19,829 --> 01:04:17,280

all right so it's closed

792

01:04:21,670 --> 01:04:19,839

on the ui chain switch the depress pump

793

01:04:23,829 --> 01:04:21,680

power to off

794

01:04:25,270 --> 01:04:23,839

depress pump power is off

795

01:04:26,950 --> 01:04:25,280

copy off

796

01:04:29,670 --> 01:04:26,960

go ahead and report your initial tether

797

01:04:31,029 --> 01:04:29,680

configuration for egress

798

01:04:33,029 --> 01:04:31,039

all right

799

01:04:36,230 --> 01:04:33,039

i'll start from my left steering

800

01:04:38,069 --> 01:04:36,240

extender i have my red hook closed and

801
01:04:41,430 --> 01:04:38,079
locked black on black

802
01:04:42,950 --> 01:04:41,440
goes to my red reel to unlock

803
01:04:44,309 --> 01:04:42,960
the yellow hook goes to right media

804
01:04:46,630 --> 01:04:44,319
workstation

805
01:04:47,910 --> 01:04:46,640
on my red reel i have shane's yellow

806
01:04:51,029 --> 01:04:47,920
hook

807
01:04:53,670 --> 01:04:51,039
closed locked black home block

808
01:04:55,589 --> 01:04:53,680
ghost squeeze red wheel that i see

809
01:04:56,950 --> 01:04:55,599
unlocked and uh

810
01:05:01,430 --> 01:04:56,960
you can pick it up from there because i

811
01:05:05,829 --> 01:05:03,190
i have my right waist tether on my

812
01:05:08,950 --> 01:05:05,839
interlock waist tether

813
01:05:10,309 --> 01:05:08,960

and i see one two three four hooks are

814

01:05:12,730 --> 01:05:10,319

locked

815

01:05:14,630 --> 01:05:12,740

let's get config and then my left

816

01:05:18,230 --> 01:05:14,640

[Applause]

817

01:05:25,510 --> 01:05:21,109

red is uh red hook is on my left earring

818

01:05:28,870 --> 01:05:27,510

okay i see that as a safe consecutive

819

01:05:30,710 --> 01:05:28,880

ground wants to double check something

820

01:05:33,589 --> 01:05:30,720

they can give us a call i'm going to

821

01:05:38,069 --> 01:05:35,990

so when the crew lock the pdt is

822

01:05:42,390 --> 01:05:38,079

approximately zero you both can expect

823

01:05:44,789 --> 01:05:43,270

and

824

01:05:47,910 --> 01:05:44,799

when we get

825

01:05:50,470 --> 01:05:47,920

a half psi on the pcs here i'll call the

826

01:05:52,630 --> 01:05:50,480

ground to confirm that they agree that

827

01:05:56,870 --> 01:05:52,640

we've gotten to less than half psi

828

01:06:03,109 --> 01:05:58,630

ground copies and concurs and that's a

829

01:06:09,190 --> 01:06:04,630

hi jenny and i

830

01:06:13,349 --> 01:06:11,670

the uh pressure inside the crew lock

831

01:06:16,549 --> 01:06:13,359

across the hatch from where you're

832

01:06:19,270 --> 01:06:16,559

looking right now where mark vande is

833

01:06:22,150 --> 01:06:19,280

the two space walkers are jammed inside

834

01:06:23,990 --> 01:06:22,160

the crew lock side by side

835

01:06:27,270 --> 01:06:24,000

standing by for

836

01:06:28,789 --> 01:06:27,280

the crew lock to go down to vacuum

837

01:06:33,029 --> 01:06:28,799

at which point they'll

838

01:06:34,870 --> 01:06:33,039

be allowed to open the hatch first the

839

01:06:35,829 --> 01:06:34,880

outer thermal cover will pop open

840

01:06:38,470 --> 01:06:35,839

following

841

01:06:40,150 --> 01:06:38,480

that the hatch will be open

842

01:06:41,910 --> 01:06:40,160

the crew members will place their suits

843

01:07:46,390 --> 01:06:41,920

on internal battery power to mark the

844

01:07:50,549 --> 01:07:47,190

the

845

01:07:51,990 --> 01:07:50,559

new iss rollout solar arrays

846

01:07:53,670 --> 01:07:52,000

that are in the process of being

847

01:07:56,470 --> 01:07:53,680

installed on the station today the

848

01:07:58,950 --> 01:07:56,480

second of six such arrays

849

01:08:01,430 --> 01:07:58,960

are the precursors uh

850

01:08:04,230 --> 01:08:01,440

to a derivative of those that will be

851

01:08:07,750 --> 01:08:04,240

used for the gateway program the gateway

852

01:08:10,630 --> 01:08:07,760

program uh developing uh an outpost that

853

01:08:12,789 --> 01:08:10,640

will orbit the moon to provide support

854

01:08:15,349 --> 01:08:12,799

for the long-term human return to the

855

01:08:17,349 --> 01:08:15,359

lunar surface as well as a staging point

856

01:08:20,229 --> 01:08:17,359

for deep space exploration you can see

857

01:08:23,749 --> 01:08:20,239

the difference in the current iss the

858

01:08:25,510 --> 01:08:23,759

so-called legacy or heritage iss solar

859

01:08:27,030 --> 01:08:25,520

array wings

860

01:08:29,110 --> 01:08:27,040

for the eight power channels on the

861

01:08:31,110 --> 01:08:29,120

international space station

862

01:08:33,189 --> 01:08:31,120

the uh smaller

863

01:08:34,789 --> 01:08:33,199

roll out solar arrays

864

01:08:37,110 --> 01:08:34,799

that are in the process of being

865

01:08:39,590 --> 01:08:37,120

installed on the station to increase the

866

01:08:42,870 --> 01:08:39,600

power capability of the complex

867

01:08:45,269 --> 01:08:42,880

by some 120 kilowatts when they're all

868

01:08:47,829 --> 01:08:45,279

installed all six of them

869

01:08:49,990 --> 01:08:47,839

and the ppe or power and propulsion

870

01:08:51,269 --> 01:08:50,000

propulsion element

871

01:08:56,870 --> 01:08:51,279

solar array

872

01:08:59,269 --> 01:08:56,880

that will be developed from the

873

01:09:00,950 --> 01:08:59,279

technology being gleaned from the

874

01:09:03,030 --> 01:09:00,960

current set of solar arrays being

875

01:09:05,189 --> 01:09:03,040

installed on the station

876
01:09:07,749 --> 01:09:05,199
for the gateway program elements will be

877
01:09:10,709 --> 01:09:07,759
about 60 feet long by 32 feet wide

878
01:09:13,269 --> 01:09:10,719
weighing about 950 pounds of mass

879
01:09:15,189 --> 01:09:13,279
so today's activities and four

880
01:09:17,349 --> 01:09:15,199
additional solar arrays to be installed

881
01:09:20,709 --> 01:09:17,359
on the station after today

882
01:09:22,950 --> 01:09:20,719
will be the forerunner for the types of

883
01:09:25,430 --> 01:09:22,960
power generation systems that will be

884
01:09:51,269 --> 01:09:25,440
used for the gateway program around the

885
01:09:55,830 --> 01:09:53,910
we are approaching one pound

886
01:09:57,750 --> 01:09:55,840
of pressure per square inch in the crew

887
01:09:58,630 --> 01:09:57,760
lock section of quest

888
01:10:01,430 --> 01:09:58,640

the

889

01:10:04,149 --> 01:10:01,440

space walking team in mission control

890

01:10:05,830 --> 01:10:04,159

reporting uh two good suits for pesquet

891

01:10:08,229 --> 01:10:05,840

and kimbrough

892

01:11:34,229 --> 01:10:08,239

as they stand by for

893

01:11:49,830 --> 01:11:36,070

airlock houston on one we're tracking

894

01:11:49,840 --> 01:11:55,270

happy

895

01:11:55,280 --> 01:12:59,430

hmm

896

01:13:04,709 --> 01:13:01,669

pressure in the crew lock steadily

897

01:13:05,910 --> 01:13:04,719

creeping down to zero a view through the

898

01:13:07,669 --> 01:13:05,920

porthole

899

01:13:09,350 --> 01:13:07,679

at the hatchway between the equipment

900

01:13:11,350 --> 01:13:09,360

lock and the crew lock

901
01:13:14,149 --> 01:13:11,360
you can see a movement by one of the two

902
01:13:37,669 --> 01:13:14,159
space walkers on through the

903
01:13:42,229 --> 01:13:39,189
the international space station is

904
01:13:43,430 --> 01:13:42,239
currently flying 255 statute miles over

905
01:13:44,950 --> 01:13:43,440
newfoundland

906
01:13:46,950 --> 01:13:44,960
about to begin a northwest to

907
01:13:50,149 --> 01:13:46,960
southeasterly track across the north

908
01:14:35,830 --> 01:13:50,159
atlantic in an orbit inclined 51.6

909
01:14:35,840 --> 01:15:32,870
uh

910
01:15:37,830 --> 01:15:35,189
just a few more minutes before we reach

911
01:15:38,709 --> 01:15:37,840
vacuum everything proceeding on time on

912
01:15:41,189 --> 01:15:38,719
track

913
01:15:43,430 --> 01:15:41,199

for the start of today's spacewalk the

914

01:15:44,870 --> 01:15:43,440

third in the past

915

01:15:47,270 --> 01:15:44,880

nine days

916

01:15:49,270 --> 01:15:47,280

in support of the the deployment and

917

01:15:52,470 --> 01:15:49,280

unfolding and unfurling

918

01:19:03,350 --> 01:15:52,480

of the first two iss rollout solar

919

01:19:08,070 --> 01:19:06,229

almost at vacuum megan mcarthur

920

01:19:10,390 --> 01:19:08,080

in the field of view there momentarily

921

01:19:12,149 --> 01:19:10,400

she'll be driving uh the canadarm2

922

01:19:14,709 --> 01:19:12,159

robotic arm today

923

01:19:16,790 --> 01:19:14,719

with tomah pesquet at the end of the arm

924

01:19:19,910 --> 01:19:16,800

who will be hauling

925

01:19:22,070 --> 01:19:19,920

the iss rollout solar array from

926

01:19:23,750 --> 01:19:22,080

the flight support structure that it is

927

01:19:27,110 --> 01:19:23,760

currently attached to

928

01:19:29,030 --> 01:19:27,120

over to the port 6 truss work site

929

01:19:31,510 --> 01:19:29,040

he'll then hand it off to shane

930

01:19:33,510 --> 01:19:31,520

kimbrough he'll get out of a foot

931

01:19:36,470 --> 01:19:33,520

restraint at the end of the arm

932

01:19:38,870 --> 01:19:36,480

and receive a handoff back

933

01:19:41,110 --> 01:19:38,880

from kimbrough of the array

934

01:19:43,270 --> 01:19:41,120

as the two work in tandem to install it

935

01:19:46,709 --> 01:19:43,280

on a mounting bracket on the so-called

936

01:19:48,709 --> 01:19:46,719

mod kit previously installed on a past

937

01:19:51,110 --> 01:19:48,719

spacewalk

938

01:19:53,510 --> 01:19:51,120

as uh one of the key moments in uh

939

01:19:56,550 --> 01:19:53,520

today's activities uh to install and

940

01:19:59,500 --> 01:19:56,560

unfurl the second of six planned rollout

941

01:20:00,540 --> 01:19:59,510

solar arrays

942

01:20:02,550 --> 01:20:00,550

[Music]

943

01:20:11,270 --> 01:20:02,560

[Applause]

944

01:20:11,280 --> 01:20:27,030

can you screw over to your right

945

01:20:27,040 --> 01:20:43,270

i'd be happy unlocked

946

01:20:43,280 --> 01:20:50,709

anything open

947

01:20:56,149 --> 01:20:52,629

with that i'm turning the emergency mpv

948

01:20:56,159 --> 01:20:58,709

up

949

01:21:03,510 --> 01:21:01,110

the hatch is open to the crew lock

950

01:21:05,669 --> 01:21:03,520

section of quest assisting youtube today

951
01:21:06,950 --> 01:21:05,679
good luck and jenny

952
01:21:08,070 --> 01:21:06,960
we're looking forward to working with

953
01:21:09,750 --> 01:21:08,080
you as well

954
01:21:10,790 --> 01:21:09,760
over to you

955
01:21:12,709 --> 01:21:10,800
nicole

956
01:21:15,189 --> 01:21:12,719
thank you mark and megan well done i am

957
01:21:17,669 --> 01:21:15,199
ready to pick up in post depress

958
01:21:19,350 --> 01:21:17,679
tomorrow and shane switch power to back

959
01:21:32,149 --> 01:21:19,360
stagger your switch throws expect

960
01:21:39,350 --> 01:21:34,229
copy check your display switches

961
01:21:39,360 --> 01:21:43,830
switches functionality

962
01:21:50,550 --> 01:21:46,070
display switch is functional on the uia

963
01:21:53,590 --> 01:21:50,560

switch power ev1 and 2 off o f f and

964

01:21:57,510 --> 01:21:53,600

check power ev1 and 2 leds all four are

965

01:22:02,870 --> 01:22:01,030

our ev1 and 2 switches are off leds are

966

01:22:05,669 --> 01:22:02,880

off

967

01:22:07,669 --> 01:22:05,679

disconnect your scu's from your dcms

968

01:22:16,550 --> 01:22:07,679

install your dcm covers and stow your

969

01:22:16,560 --> 01:22:49,990

good work

970

01:22:50,000 --> 01:22:55,669

check depress pump man iso valve closed

971

01:23:11,910 --> 01:22:58,550

and iso valve is closed

972

01:23:15,830 --> 01:23:14,070

this is mission control houston uh

973

01:23:18,310 --> 01:23:15,840

kimbrough and pesquet have placed their

974

01:23:22,390 --> 01:23:18,320

suits on battery power

975

01:23:24,709 --> 01:23:22,400

at 6 52 a.m central time 7 52 a.m

976
01:23:28,310 --> 01:23:24,719
eastern time marking the start of

977
01:23:29,990 --> 01:23:28,320
today's spacewalk the 241st spacewalk in

978
01:23:31,910 --> 01:23:30,000
support of space station assembly

979
01:23:34,709 --> 01:23:31,920
maintenance and upgrades again our

980
01:23:36,870 --> 01:23:34,719
spacewalk now officially underway

981
01:23:38,950 --> 01:23:36,880
as pesquet and kimbrough have placed

982
01:23:42,709 --> 01:23:38,960
their suits on battery power

983
01:23:47,189 --> 01:23:42,719
6 52 a.m central time 7 52 a.m eastern

984
01:23:50,629 --> 01:23:48,950
we copy shane that's expected in the

985
01:23:54,950 --> 01:23:50,639
depress we're not concerned with the

986
01:23:54,960 --> 01:23:57,910
great

987
01:24:02,390 --> 01:23:59,510
okay so we've got temperature control

988
01:24:05,110 --> 01:24:02,400

valves in max hot foil

989

01:24:06,790 --> 01:24:05,120

and that's hard easy too

990

01:24:12,390 --> 01:24:06,800

copy temperature control valve and max

991

01:24:17,590 --> 01:24:14,790

water is on easy one

992

01:24:23,510 --> 01:24:17,600

water on 8v2

993

01:24:29,430 --> 01:24:26,070

spike off snipe off yours

994

01:24:33,710 --> 01:24:29,440

cm fight off ev2

995

01:24:38,310 --> 01:24:35,990

[Applause]

996

01:24:40,390 --> 01:24:38,320

spacewalk communicator jenny seidi a

997

01:24:41,830 --> 01:24:40,400

canadian space agency astronaut here in

998

01:24:44,550 --> 01:24:41,840

mission control

999

01:24:46,390 --> 01:24:44,560

running through the post battery power

1000

01:24:51,590 --> 01:24:46,400

steps with the crew

1001
01:24:54,950 --> 01:24:53,590
waiting for the outer thermal cover to

1002
01:24:57,110 --> 01:24:54,960
be open

1003
01:24:59,990 --> 01:24:57,120
pesquet will be first out he's wearing

1004
01:25:02,390 --> 01:25:00,000
the suit with the red stripes as ev1 or

1005
01:25:05,990 --> 01:25:02,400
extra vehicular crew member number one

1006
01:25:07,990 --> 01:25:06,000
the helmet cam number will be 20

1007
01:25:09,750 --> 01:25:08,000
for pesque

1008
01:25:11,510 --> 01:25:09,760
shane kimbrough's helmet camera number

1009
01:25:18,470 --> 01:25:11,520
is 22.

1010
01:25:22,229 --> 01:25:20,709
okay and with that toma you can open the

1011
01:25:23,750 --> 01:25:22,239
hatch thermal cover

1012
01:25:26,149 --> 01:25:23,760
still the hook on the stiffener tether

1013
01:25:57,270 --> 01:25:26,159

point and cinch strap until snug we're

1014

01:26:02,470 --> 01:26:00,149

extends our six lines and i'm opening

1015

01:26:17,590 --> 01:26:02,480

the thermal cover

1016

01:26:21,110 --> 01:26:19,270

hey firm you can egress the airlock

1017

01:26:23,350 --> 01:26:21,120

tomorrow you're taking crew lock bag one

1018

01:26:57,830 --> 01:26:23,360

with you verify forward half pitch been

1019

01:26:57,840 --> 01:27:03,990

all right

1020

01:27:04,000 --> 01:27:08,460

we're ready for coolback one

1021

01:27:08,470 --> 01:27:21,830

[Music]

1022

01:27:21,840 --> 01:27:28,980

hmm

1023

01:27:28,990 --> 01:27:34,430

[Applause]

1024

01:27:50,709 --> 01:27:36,070

[Music]

1025

01:27:55,590 --> 01:27:53,030

our first view of the quest airlock

1026
01:27:58,470 --> 01:27:55,600
about to celebrate the 20th anniversary

1027
01:28:00,390 --> 01:27:58,480
of its use having been installed

1028
01:28:02,390 --> 01:28:00,400
on a mission of the shuttle atlantis to

1029
01:28:06,149 --> 01:28:02,400
the international space station in july

1030
01:28:09,030 --> 01:28:06,159
of 2001 on the sts-104 mission

1031
01:28:27,110 --> 01:28:09,040
tomorrow pesquet first out beginning the

1032
01:28:31,270 --> 01:28:29,590
you can agree you can store your prolog

1033
01:28:32,790 --> 01:28:31,280
bag on your brt we'll also have you turn

1034
01:28:34,229 --> 01:28:32,800
on your heka and then you're correct

1035
01:28:35,030 --> 01:28:34,239
you'll move on to

1036
01:28:37,189 --> 01:28:35,040
uh

1037
01:28:39,189 --> 01:28:37,199
inspecting the load alleviating straps

1038
01:28:41,660 --> 01:28:39,199

on the tethers

1039

01:28:54,070 --> 01:28:41,670

so that is

1040

01:28:59,350 --> 01:28:57,270

have you turned on your hecka

1041

01:29:00,790 --> 01:28:59,360

yes virginia america

1042

01:29:03,430 --> 01:29:00,800

okay and you inspected those little

1043

01:29:05,590 --> 01:29:03,440

league 80s straps

1044

01:29:13,830 --> 01:29:05,600

yes i've reported this this is done for

1045

01:29:18,790 --> 01:29:16,149

okay copy you can attach

1046

01:29:33,830 --> 01:29:18,800

the forward safety tether green hook to

1047

01:29:38,390 --> 01:29:35,910

once pesque has completed the

1048

01:29:40,629 --> 01:29:38,400

configuration of his tethers at the

1049

01:29:42,870 --> 01:29:40,639

vicinity of the hatchway

1050

01:29:51,110 --> 01:29:42,880

to the quest airlock shane kimbrough

1051
01:29:55,750 --> 01:29:53,830
that's a good out you can attach shane's

1052
01:29:59,220 --> 01:29:55,760
yellow hook to the green wheel on the

1053
01:29:59,800 --> 01:29:59,230
aft external d-ring

1054
01:30:19,590 --> 01:29:59,810
[Applause]

1055
01:30:23,590 --> 01:30:22,629
and james yellow hook is now attached

1056
01:30:25,030 --> 01:30:23,600
to

1057
01:30:26,310 --> 01:30:25,040
he asked

1058
01:30:27,430 --> 01:30:26,320
green reel

1059
01:30:29,990 --> 01:30:27,440
the hook

1060
01:30:32,229 --> 01:30:30,000
is closed and locked michael black green

1061
01:30:35,189 --> 01:30:32,239
reel is unlocked

1062
01:30:56,629 --> 01:30:35,199
cubby attached shane's green hook to his

1063
01:31:00,149 --> 01:30:58,550

saying the green hook is now attached to

1064

01:31:03,510 --> 01:31:00,159

his red wheel

1065

01:31:05,910 --> 01:31:03,520

and the reel is unlocked

1066

01:31:08,070 --> 01:31:05,920

we're tracking a good tether config with

1067

01:31:09,910 --> 01:31:08,080

good checks so you can give shane a go

1068

01:31:14,830 --> 01:31:09,920

to release his waste tether from the

1069

01:31:19,910 --> 01:31:17,110

airlock saying that

1070

01:31:21,590 --> 01:31:19,920

i go through the yellow box

1071

01:31:25,110 --> 01:31:21,600

no you're in a good conflict okay

1072

01:31:27,430 --> 01:31:25,120

racetrack is released my hacker is on

1073

01:31:30,390 --> 01:31:27,440

i will start coming out

1074

01:31:30,400 --> 01:31:45,340

puppy

1075

01:31:45,350 --> 01:31:58,629

[Applause]

1076
01:32:08,470 --> 01:32:01,110
all right come on see you there

1077
01:32:08,480 --> 01:32:23,990
get out of your way

1078
01:32:24,000 --> 01:32:31,070
all right here we go

1079
01:32:35,990 --> 01:32:33,750
[Applause]

1080
01:32:38,070 --> 01:32:36,000
close-up view of thomas pesquet on the

1081
01:32:39,830 --> 01:32:38,080
left shane kimbrough emerging from the

1082
01:32:43,270 --> 01:32:39,840
quest airlock on your right the

1083
01:32:46,390 --> 01:32:43,280
international space station flying 255

1084
01:32:50,840 --> 01:32:46,400
miles over chad in central africa

1085
01:32:50,850 --> 01:32:55,830
[Applause]

1086
01:32:55,840 --> 01:33:10,310
oh

1087
01:33:14,070 --> 01:33:11,669
all right let's discover a crew i

1088
01:33:16,950 --> 01:33:14,080

thought i got my vrt and

1089

01:33:19,270 --> 01:33:16,960

brt rex

1090

01:33:24,310 --> 01:33:19,280

that's one

1091

01:33:29,590 --> 01:33:26,550

normal cover you ready for that

1092

01:33:48,870 --> 01:33:31,270

when you close the thermal cover i have

1093

01:33:48,880 --> 01:33:55,189

now

1094

01:33:58,870 --> 01:33:57,110

that's anything looks like it's staying

1095

01:34:06,550 --> 01:33:58,880

closed

1096

01:34:10,950 --> 01:34:08,709

to be safe we are going to put the wire

1097

01:34:13,350 --> 01:34:10,960

tie on anyway so the wire tie which you

1098

01:34:15,590 --> 01:34:13,360

pre-staged you can loop around the

1099

01:34:17,270 --> 01:34:15,600

thermal cover soft goods handle and keep

1100

01:34:23,590 --> 01:34:17,280

in mind we don't have helmet cams until

1101
01:34:27,550 --> 01:34:25,600
working on

1102
01:34:30,990 --> 01:34:27,560
[Music]

1103
01:34:42,390 --> 01:34:31,000
this complete complete

1104
01:34:46,629 --> 01:34:43,430
uh

1105
01:34:51,830 --> 01:34:46,639
you have two green leds

1106
01:35:01,189 --> 01:34:52,950
e

1107
01:35:03,350 --> 01:35:01,199
down and that your

1108
01:35:05,189 --> 01:35:03,360
feather is in a good config you get your

1109
01:35:06,470 --> 01:35:05,199
background brt

1110
01:35:07,510 --> 01:35:06,480
the red

1111
01:35:09,590 --> 01:35:07,520
good

1112
01:35:12,790 --> 01:35:09,600
okay tomorrow i see you have two green

1113
01:35:15,350 --> 01:35:12,800

leds your lights are on

1114

01:35:17,350 --> 01:35:15,360

your prt your

1115

01:35:19,350 --> 01:35:17,360

tab is up

1116

01:35:21,350 --> 01:35:19,360

one two my knee workstation path through

1117

01:35:23,510 --> 01:35:21,360

up

1118

01:35:27,109 --> 01:35:23,520

left safer handles down i can't see your

1119

01:35:35,590 --> 01:35:28,629

and

1120

01:35:38,229 --> 01:35:35,600

out your right side

1121

01:35:39,109 --> 01:35:38,239

that looks good and i have a dry hat for

1122

01:35:41,030 --> 01:35:39,119

you

1123

01:35:42,950 --> 01:35:41,040

okay

1124

01:35:45,750 --> 01:35:42,960

better starts from my left right it goes

1125

01:35:48,310 --> 01:35:45,760

across to my right um yeah so see that

1126
01:35:50,229 --> 01:35:48,320
mario okay go on to your right side yes

1127
01:35:54,470 --> 01:35:50,239
sounds good

1128
01:35:59,910 --> 01:35:57,430
copy that is a good config well done we

1129
01:36:03,510 --> 01:35:59,920
will start with shane translating out to

1130
01:36:05,350 --> 01:36:03,520
the fse tower handrail

1131
01:36:10,740 --> 01:36:05,360
tomorrow you can follow

1132
01:36:10,750 --> 01:36:15,940
[Music]

1133
01:36:15,950 --> 01:36:29,990
[Applause]

1134
01:36:35,189 --> 01:36:32,790
having uh conducted initial so-called

1135
01:36:36,709 --> 01:36:35,199
body checks making sure

1136
01:36:39,270 --> 01:36:36,719
each other's suits are in the right

1137
01:36:41,590 --> 01:36:39,280
configuration pesky and kimbrough now

1138
01:36:44,870 --> 01:36:41,600

have completed the first phase of their

1139

01:36:47,030 --> 01:36:44,880

post egress activities pesquet about to

1140

01:36:49,109 --> 01:36:47,040

make his way now over to the flight

1141

01:36:53,880 --> 01:36:49,119

support equipment that houses the second

1142

01:36:59,270 --> 01:36:56,709

[Applause]

1143

01:37:01,830 --> 01:36:59,280

he will be joined

1144

01:37:04,229 --> 01:37:01,840

at the port 6 worksite by shane

1145

01:37:06,470 --> 01:37:04,239

kimbrough a short time from now

1146

01:37:09,350 --> 01:37:06,480

the first order of business for pesquet

1147

01:37:12,709 --> 01:37:09,360

will be to use a pistol grip tool

1148

01:37:14,470 --> 01:37:12,719

to release uh two bolts boom end launch

1149

01:37:16,950 --> 01:37:14,480

restraint bolts

1150

01:37:18,629 --> 01:37:16,960

in the first phase of uh ongoing

1151

01:37:21,270 --> 01:37:18,639

activity that will

1152

01:37:23,669 --> 01:37:21,280

ultimately result in the release of the

1153

01:37:25,510 --> 01:37:23,679

array from its flight support equipment

1154

01:37:26,870 --> 01:37:25,520

that flight support equipment will be

1155

01:37:29,510 --> 01:37:26,880

robotically

1156

01:37:32,550 --> 01:37:29,520

transferred back to the trunk of the

1157

01:37:36,390 --> 01:37:32,560

spacex cargo dragon vehicle

1158

01:37:39,189 --> 01:37:36,400

to be later disposed of spacex uh

1159

01:37:40,950 --> 01:37:39,199

that cargo a vehicle uh to be undocked

1160

01:37:42,629 --> 01:37:40,960

from the international space station on

1161

01:37:44,870 --> 01:37:42,639

july 6th

1162

01:37:47,109 --> 01:37:44,880

for an entry and splashdown

1163

01:37:49,030 --> 01:37:47,119

in the atlantic ocean on july 7th

1164

01:37:51,109 --> 01:37:49,040

returning scientific payloads and other

1165

01:37:54,229 --> 01:37:51,119

cargo from the station

1166

01:37:56,629 --> 01:37:54,239

before a splashdown the trunk of dragon

1167

01:37:58,390 --> 01:37:56,639

will be jettisoned and along with it the

1168

01:38:01,270 --> 01:37:58,400

flight support equipment that carried up

1169

01:38:03,270 --> 01:38:01,280

these first two solar arrays no sudden

1170

01:38:04,629 --> 01:38:03,280

movements quick stops quick grabs on the

1171

01:38:07,270 --> 01:38:04,639

fse

1172

01:38:09,430 --> 01:38:07,280

wait until fsc motion dampens out before

1173

01:38:11,430 --> 01:38:09,440

imparting any loads

1174

01:38:14,310 --> 01:38:11,440

while working on the fse you must not

1175

01:38:16,149 --> 01:38:14,320

simultaneously impart loads and do not

1176

01:38:20,870 --> 01:38:16,159

contact by rosa blankets these solar

1177

01:38:25,350 --> 01:38:22,950

we copy all journey refresh recovery

1178

01:38:27,350 --> 01:38:25,360

couplings graphical fixture bus cable

1179

01:38:29,030 --> 01:38:27,360

and gentle on the face

1180

01:39:48,950 --> 01:38:29,040

52 copies

1181

01:39:48,960 --> 01:40:10,070

uh

1182

01:40:12,790 --> 01:40:11,990

one of the reels is not retracting very

1183

01:40:14,070 --> 01:40:12,800

well

1184

01:40:16,310 --> 01:40:14,080

yeah

1185

01:40:19,189 --> 01:40:16,320

it's like one of mine

1186

01:40:34,709 --> 01:40:19,199

they're getting close to

1187

01:40:34,719 --> 01:40:55,350

copies

1188

01:40:58,950 --> 01:40:57,350

okay i cycled if it seems to be working

1189

01:41:00,950 --> 01:40:58,960

better now

1190

01:41:16,870 --> 01:41:00,960

let's work

1191

01:41:16,880 --> 01:41:21,189

[Applause]

1192

01:41:26,790 --> 01:41:24,470

okay i see ev1's anchor hook

1193

01:41:30,149 --> 01:41:26,800

goes unlocked

1194

01:41:32,870 --> 01:41:30,159

dbt is closing locked and uh

1195

01:41:34,550 --> 01:41:32,880

he tunes it fifty two i think she wants

1196

01:41:35,510 --> 01:41:34,560

to

1197

01:41:37,590 --> 01:41:35,520

take a good number

1198

01:41:41,910 --> 01:41:37,600

on 51.

1199

01:41:45,189 --> 01:41:43,430

concur

1200

01:41:47,189 --> 01:41:45,199

shane you can continue translating

1201

01:41:49,270 --> 01:41:47,199

you're translating outboard to p6 and

1202

01:41:56,149 --> 01:41:49,280

it's tomah who's translating to the fsc

1203

01:42:00,629 --> 01:41:58,470

pesky and kimbrough now making their way

1204

01:42:02,790 --> 01:42:00,639

to their respective work sites

1205

01:42:04,950 --> 01:42:02,800

pesquet to the flight support equipment

1206

01:42:08,070 --> 01:42:04,960

housing the second of the

1207

01:42:11,109 --> 01:42:08,080

first two iss rollout solar arrays

1208

01:42:13,030 --> 01:42:11,119

kimbrough making his way to the far port

1209

01:42:15,030 --> 01:42:13,040

trust side

1210

01:42:18,390 --> 01:42:15,040

of the international space station to

1211

01:42:20,149 --> 01:42:18,400

await pescades arrival with that array

1212

01:42:22,229 --> 01:42:20,159

the international space station about to

1213

01:42:24,550 --> 01:42:22,239

cross the southeastern coast of africa

1214

01:42:27,510 --> 01:42:24,560

moving to the south of madagascar and

1215

01:42:30,310 --> 01:42:27,520

over the indian ocean

1216

01:42:32,149 --> 01:42:30,320

we are in a handover between satellites

1217

01:42:34,229 --> 01:42:32,159

on our tracking and data relay satellite

1218

01:42:45,669 --> 01:42:34,239

system will regain our downlink

1219

01:42:45,679 --> 01:42:58,149

yes

1220

01:43:02,149 --> 01:43:00,550

we're back with you after a handover

1221

01:43:07,310 --> 01:43:02,159

shane i have warnings and cautions for

1222

01:43:07,320 --> 01:43:11,830

ready go ahead jenny

1223

01:43:16,550 --> 01:43:14,149

edge hazards on the mt rail attachment

1224

01:43:18,470 --> 01:43:16,560

lug near the two bravo iea inboard

1225

01:43:20,229 --> 01:43:18,480

radiator corner and the pit pins on the

1226

01:43:22,470 --> 01:43:20,239

ticker and the sticker do not meet eva

1227

01:43:23,910 --> 01:43:22,480

kick loads

1228

01:43:25,430 --> 01:43:23,920

as you continue to translate outboard

1229

01:43:27,510 --> 01:43:25,440

avoid contact with the deployed and

1230

01:43:29,669 --> 01:43:27,520

stowed radiators and the body battery

1231

01:43:43,189 --> 01:43:29,679

adapter plate cables on the iea are a

1232

01:43:47,109 --> 01:43:44,870

cautionary instructions for shane

1233

01:43:49,270 --> 01:43:47,119

kimbrough from spacewalk uh

1234

01:43:50,870 --> 01:43:49,280

communicator jenny seidi here in mission

1235

01:43:53,510 --> 01:43:50,880

control

1236

01:43:54,709 --> 01:43:53,520

once uh pesquet is at the flight support

1237

01:43:55,990 --> 01:43:54,719

equipment

1238

01:43:57,990 --> 01:43:56,000

he will

1239

01:44:00,470 --> 01:43:58,000

use a pistol grip tool

1240

01:44:06,390 --> 01:44:00,480

to release a pair of bolts

1241

01:44:11,430 --> 01:44:08,950

the first in a series of such uh

1242

01:44:13,669 --> 01:44:11,440

usage of the pistol grip tool throughout

1243

01:44:15,910 --> 01:44:13,679

the course of the space walk that will

1244

01:44:18,709 --> 01:44:15,920

free up the array and enable pesky to

1245

01:44:20,470 --> 01:44:18,719

transport it while affixed to a foot

1246

01:44:23,350 --> 01:44:20,480

restraint at the end of the canadarm2

1247

01:44:25,510 --> 01:44:23,360

robotic arm he will be driven to the

1248

01:44:28,470 --> 01:44:25,520

work site to join kimbrough

1249

01:44:31,030 --> 01:44:28,480

the robotics off the robotics operator

1250

01:44:34,709 --> 01:44:31,040

inside this station today is nasa

1251

01:44:36,709 --> 01:44:34,719

astronaut megan mcarthur

1252

01:44:39,109 --> 01:44:36,719

copy you can continue to translate

1253

01:44:48,110 --> 01:44:39,119

outboard to p6 i have a green hook

1254

01:44:48,120 --> 01:44:54,629

[Music]

1255

01:44:54,639 --> 01:45:21,480

you're looking for handrail 5388 shane

1256

01:45:41,510 --> 01:45:25,750

[Applause]

1257

01:45:45,510 --> 01:45:44,550

a good view of the second

1258

01:45:47,990 --> 01:45:45,520

of the

1259

01:45:51,270 --> 01:45:48,000

iss roll out solar arrays there will be

1260

01:45:53,189 --> 01:45:51,280

six such arrays attached

1261

01:45:54,790 --> 01:45:53,199

and unfurled at the international space

1262

01:45:56,470 --> 01:45:54,800

station on the port and starboard

1263

01:45:59,030 --> 01:45:56,480

trusses of the station for six of the

1264

01:46:00,709 --> 01:45:59,040

eight power channels of the complex

1265

01:46:02,950 --> 01:46:00,719

the six

1266

01:46:06,229 --> 01:46:02,960

power channels to be augmented with 20

1267

01:46:09,430 --> 01:46:06,239

kilowatts of power from each array

1268

01:46:12,070 --> 01:46:09,440

specifically selected because of the

1269

01:46:53,510 --> 01:46:12,080

power demand for various systems that

1270

01:46:53,520 --> 01:47:15,590

uh

1271

01:47:15,600 --> 01:47:42,629

yes

1272

01:48:12,629 --> 01:47:44,950

hi jenny i'm at my green north location

1273

01:48:12,639 --> 01:48:25,910

uh

1274

01:48:32,629 --> 01:48:30,149

a green icon five three eight eight

1275

01:48:43,350 --> 01:48:32,639

copy shane you can translate to the mod

1276

01:48:47,990 --> 01:48:45,750

shane kimbrough just about at the

1277

01:48:49,109 --> 01:48:48,000

worksite at the port 6 truss of the

1278

01:48:51,750 --> 01:48:49,119

station

1279

01:48:55,910 --> 01:48:51,760

at the mounting bracket or so-called mod

1280

01:48:57,990 --> 01:48:55,920

kit previously installed on a past eva

1281

01:49:00,070 --> 01:48:58,000

he'll be stowing a crew lock bag with

1282

01:49:02,070 --> 01:49:00,080

various equipment and tools that he and

1283

01:49:05,270 --> 01:49:02,080

pesquet will be using for the

1284

01:49:06,310 --> 01:49:05,280

installation of the iss rollout solar

1285

01:49:08,550 --> 01:49:06,320

array

1286

01:49:11,350 --> 01:49:08,560

at the opposite side

1287

01:49:13,669 --> 01:49:11,360

of the truss to which the 2b

1288

01:49:29,120 --> 01:49:13,679

uh rollout solar array was installed

1289

01:49:35,510 --> 01:49:33,990

[Music]

1290

01:49:42,149 --> 01:49:35,520

shane i have a caution for you when

1291

01:49:46,229 --> 01:49:43,990

no sudden movements on the mass canister

1292

01:50:05,530 --> 01:49:46,239

or mod kit translate slowly and avoid

1293

01:50:05,540 --> 01:50:09,189

[Music]

1294

01:50:14,790 --> 01:50:12,709

tomah next we'll be releasing r1 and r2

1295

01:50:24,070 --> 01:50:14,800

so you can translate to the zenith boom

1296

01:50:27,350 --> 01:50:25,990

and r2 referred to by spacewalk

1297

01:50:29,510 --> 01:50:27,360

communicator

1298

01:50:32,070 --> 01:50:29,520

jenny seidi are the uh

1299

01:50:34,870 --> 01:50:32,080

boom end launch restraint bolts

1300

01:50:36,470 --> 01:50:34,880

the first of uh four bolts there will be

1301

01:50:39,990 --> 01:50:36,480

two additional bolts for the outer

1302

01:50:42,870 --> 01:50:40,000

deployment restraints on the irosa or

1303

01:50:43,990 --> 01:50:42,880

iss rollout solar array a good shot of

1304

01:50:46,149 --> 01:50:44,000

pesquet

1305

01:50:48,470 --> 01:50:46,159

from a truss camera on the station as he

1306

01:50:50,790 --> 01:50:48,480

begins work with a pistol grip tool to

1307

01:50:53,750 --> 01:50:50,800

free up the array that he will transport

1308

01:50:56,149 --> 01:50:53,760

over to the far port end of the truss or

1309

01:50:57,830 --> 01:50:56,159

backbone of the station to hand off to

1310

01:50:59,830 --> 01:50:57,840

shane kimbrough

1311

01:51:01,669 --> 01:50:59,840

in this choreography that

1312

01:51:03,910 --> 01:51:01,679

is expected to result in the

1313

01:51:06,390 --> 01:51:03,920

installation of the array

1314

01:51:08,870 --> 01:51:06,400

on the mounting bracket or mod kit

1315

01:51:10,950 --> 01:51:08,880

for the 4b power channel

1316

01:51:12,629 --> 01:51:10,960

of the port 6 truss of the international

1317

01:51:15,990 --> 01:51:12,639

space station

1318

01:51:36,400 --> 01:51:16,000

that will be then unfolded and unfurled

1319

01:51:36,410 --> 01:51:44,229

[Music]

1320

01:51:48,470 --> 01:51:46,790

just give us words on uh how you do that

1321

01:51:53,830 --> 01:51:48,480

this is the rich man's you told us about

1322

01:51:53,840 --> 01:51:58,149

[Music]

1323

01:52:43,510 --> 01:52:00,950

copy 5359 for your safety tether fair

1324

01:52:43,520 --> 01:52:49,430

copy you ready for settings

1325

01:52:53,189 --> 01:52:51,589

let me calibrate my pc

1326

01:52:55,270 --> 01:52:53,199

and i'll be ready

1327

01:52:57,510 --> 01:52:55,280

copy sounds good

1328

01:53:00,149 --> 01:52:57,520

shane you'll be stowing the crewlock bag

1329

01:53:02,070 --> 01:53:00,159

on the left lower strut handrail closest

1330

01:53:23,109 --> 01:53:02,080

to the mounting bracket

1331

01:53:39,910 --> 01:53:24,470

alpha 4

1332

01:53:46,229 --> 01:53:42,550

good reback again counter two

1333

01:53:48,390 --> 01:53:46,239

you will be releasing r1 and r2 10 to 13

1334

01:53:49,910 --> 01:53:48,400

turns each the bolts will spring out

1335

01:53:53,430 --> 01:53:49,920

when fully released

1336

01:54:00,390 --> 01:53:53,440

and it's about three minutes until our

1337

01:54:02,790 --> 01:54:00,680

um

1338

01:54:04,550 --> 01:54:02,800

[Music]

1339

01:54:06,310 --> 01:54:04,560

again i think bumped it too off can you

1340

01:54:08,470 --> 01:54:06,320

give me those settings or a number of

1341

01:54:10,629 --> 01:54:08,480

turns one more time just to be sure no

1342

01:54:12,470 --> 01:54:10,639

problem alpha four

1343

01:54:18,070 --> 01:54:12,480

counter two

1344

01:55:00,470 --> 01:54:19,589

thirteen times

1345

01:55:02,470 --> 01:55:01,120

then you have

1346

01:55:04,710 --> 01:55:02,480

[Music]

1347

01:55:08,070 --> 01:55:04,720

12 terms

1348

01:55:16,470 --> 01:55:10,390

copy 12 turns the bolt popped out was

1349

01:55:22,229 --> 01:55:19,109

pesky using a pistol grip tool at the 34

1350

01:55:23,430 --> 01:55:22,239

minute mark into today's space walk by

1351

01:55:26,149 --> 01:55:23,440

uh

1352

01:55:28,709 --> 01:55:26,159

pesquet and kimbrough

1353

01:55:30,790 --> 01:55:28,719

with the red stripes says ev1

1354

01:55:31,750 --> 01:55:30,800

or extra vehicular crew member number

1355

01:55:35,270 --> 01:55:31,760

one

1356

01:55:36,229 --> 01:55:35,280

using this device to release a pair of

1357

01:55:40,790 --> 01:55:36,239

bolts

1358

01:55:43,109 --> 01:55:40,800

that will free up the

1359

01:55:45,350 --> 01:55:43,119

rollout solar array so it can be removed

1360

01:55:47,669 --> 01:55:45,360

from its flight support equipment to be

1361

01:55:50,550 --> 01:55:47,679

transported by pesquet at the end of the

1362

01:55:53,109 --> 01:55:50,560

station's robotic arm over to join shane

1363

01:55:54,709 --> 01:55:53,119

kimbrough who is now at the port six or

1364

01:55:56,149 --> 01:55:54,719

far port truss

1365

01:55:58,790 --> 01:55:56,159

at the end of the backbone of the

1366

01:56:12,950 --> 01:55:58,800

station on the left side of the station

1367

01:56:18,149 --> 01:56:15,030

point five turns

1368

01:56:21,350 --> 01:56:18,159

actually popped out on r2

1369

01:56:22,790 --> 01:56:21,360

copy 11.5 turns on r2 the bolt is fully

1370

01:56:25,189 --> 01:56:22,800

popped out

1371

01:56:26,709 --> 01:56:25,199

you can rotate both boom deployment

1372

01:56:33,910 --> 01:56:26,719

system rollers

1373

01:56:33,920 --> 01:56:50,070

it works

1374

01:57:03,750 --> 01:56:52,270

right now

1375

01:57:09,030 --> 01:57:05,990

for both of you this time i'll need us

1376
01:57:21,550 --> 01:57:09,040
to turn on our hekas one more time and

1377
01:57:21,560 --> 01:57:35,669
please on green

1378
01:57:35,679 --> 01:57:50,790
let's cycle it

1379
01:57:59,030 --> 01:57:53,669
is back all of the green id

1380
01:58:02,070 --> 01:58:00,229
tomorrow with

1381
01:58:09,510 --> 01:58:02,080
the boom deployment system rollers

1382
01:58:38,550 --> 01:58:11,109
i'm still working on all throughout

1383
01:58:41,589 --> 01:58:39,830
shane you cut out a bit there i

1384
01:58:52,070 --> 01:58:41,599
understand the scoop is installed and

1385
01:58:56,070 --> 01:58:54,870
okay copy shane your next task is to

1386
01:58:58,709 --> 01:58:56,080
route the

1387
01:58:59,669 --> 01:58:58,719
wire cables on the right side of the mod

1388
01:59:01,669 --> 01:58:59,679

kit

1389

01:59:03,270 --> 01:59:01,679

you can head to the cable bag now let me

1390

01:59:16,180 --> 01:59:03,280

know if you need additional words on

1391

01:59:16,190 --> 01:59:28,470

[Music]

1392

01:59:32,790 --> 01:59:30,709

you're going to start with r4 understood

1393

01:59:36,550 --> 01:59:32,800

and these are the bolts as a reminder

1394

01:59:39,109 --> 01:59:36,560

that we will be releasing 245 turns so

1395

01:59:41,990 --> 01:59:39,119

we'll verify the pgt turn count is zero

1396

01:59:43,669 --> 01:59:42,000

before we start and if you call out the

1397

01:59:45,270 --> 01:59:43,679

turns

1398

01:59:51,910 --> 01:59:45,280

at an interval of your choosing we'll

1399

01:59:57,030 --> 01:59:55,109

r3 and r4 are a pair of outer deployment

1400

02:00:00,550 --> 01:59:57,040

restraint bolts

1401
02:00:01,830 --> 02:00:00,560
the second pair of bolts that pesquet is

1402
02:00:03,510 --> 02:00:01,840
releasing

1403
02:00:05,990 --> 02:00:03,520
to enable the

1404
02:00:12,629 --> 02:00:06,000
solar ray to be removed from its flight

1405
02:01:00,229 --> 02:00:15,350
go ahead and drag all four

1406
02:01:00,239 --> 02:01:35,380
foreign

1407
02:01:35,390 --> 02:01:39,990
[Music]

1408
02:01:40,000 --> 02:01:55,030
get your cables here

1409
02:02:01,750 --> 02:01:55,750
these guys

1410
02:02:37,430 --> 02:02:05,350
right on your bike cables

1411
02:02:37,440 --> 02:03:06,070
copy

1412
02:03:06,080 --> 02:03:25,109
more than 30 times

1413
02:04:15,589 --> 02:03:45,669

okay

1414

02:04:15,599 --> 02:04:35,510

returns

1415

02:04:35,520 --> 02:04:50,310

wow

1416

02:04:50,320 --> 02:05:01,290

number 45

1417

02:05:01,300 --> 02:05:04,790

[Music]

1418

02:05:10,550 --> 02:05:08,470

copy 245 turns on r4

1419

02:05:12,310 --> 02:05:10,560

now we'll check that the tie-down bolt

1420

02:05:14,229 --> 02:05:12,320

protrudes from the base of the arosa

1421

02:05:18,830 --> 02:05:14,239

root beam should be just on the other

1422

02:05:24,629 --> 02:05:21,669

you i can see that very clearly jenny

1423

02:05:26,470 --> 02:05:24,639

protrudes both very nicely

1424

02:05:31,910 --> 02:05:26,480

excellent well done we'll move on to our

1425

02:05:37,270 --> 02:05:34,709

the first two bolts have been uh

1426

02:05:39,189 --> 02:05:37,280

released holding the array in place on

1427

02:05:41,750 --> 02:05:39,199

the flight support structure

1428

02:05:43,669 --> 02:05:41,760

pesquet now will uh press ahead uh to

1429

02:05:46,069 --> 02:05:43,679

release two more bolts the outer

1430

02:05:49,189 --> 02:05:46,079

deployment restraint bolts

1431

02:05:51,030 --> 02:05:49,199

with his pistol grip tool we are now 44

1432

02:06:14,069 --> 02:05:51,040

minutes into the spacewalk the crew

1433

02:06:18,550 --> 02:06:17,030

for those watching nasa television uh

1434

02:06:20,310 --> 02:06:18,560

and who have been following the launch

1435

02:06:22,629 --> 02:06:20,320

of a sounding rocket from the wallops

1436

02:06:23,750 --> 02:06:22,639

flight facility virginia on the media

1437

02:06:26,069 --> 02:06:23,760

channel

1438

02:06:28,390 --> 02:06:26,079

that activity was successfully completed

1439

02:06:30,390 --> 02:06:28,400

a few minutes ago and so we are now

1440

02:06:32,229 --> 02:06:30,400

simulcasting on both the public and

1441

02:06:48,870 --> 02:06:32,239

media channels for the remainder of

1442

02:06:48,880 --> 02:07:33,109

returns

1443

02:07:33,119 --> 02:07:58,229

the five terms

1444

02:08:02,069 --> 02:08:00,790

the turns

1445

02:08:03,270 --> 02:08:02,079

how are those cables through the

1446

02:08:05,669 --> 02:08:03,280

eurozone

1447

02:08:40,629 --> 02:08:05,679

i just got the first uh

1448

02:08:40,639 --> 02:09:03,109

140 trolls

1449

02:09:10,629 --> 02:09:05,910

our head coffee deal now

1450

02:09:10,639 --> 02:09:16,709

thanks

1451
02:09:25,670 --> 02:09:17,730
for 35

1452
02:09:25,680 --> 02:09:29,589
[Music]

1453
02:09:29,599 --> 02:09:45,910
jenny

1454
02:09:51,350 --> 02:09:47,189
all right we copy

1455
02:09:51,360 --> 02:10:09,750
i know russian up on your phones

1456
02:10:09,760 --> 02:10:27,189
30.

1457
02:10:32,310 --> 02:10:28,950
jenny i see the

1458
02:10:34,790 --> 02:10:32,320
indicators popped up actually it did uh

1459
02:10:37,030 --> 02:10:34,800
in 2700 220 charge if that's data that

1460
02:10:38,950 --> 02:10:37,040
you're interested in

1461
02:10:41,830 --> 02:10:38,960
copy that's good for us to know but we

1462
02:10:46,229 --> 02:10:41,840
also copy 245 turns on the

1463
02:10:50,709 --> 02:10:48,390

you can stow your pgt and translate back

1464

02:10:56,229 --> 02:10:50,719

to the tower handrail you'll be stowing

1465

02:10:56,239 --> 02:12:07,910

coffee

1466

02:12:11,669 --> 02:12:10,069

shane after you're finished placing that

1467

02:12:13,189 --> 02:12:11,679

last wire tie

1468

02:12:15,189 --> 02:12:13,199

you'll be

1469

02:12:16,149 --> 02:12:15,199

pre-staging the adjustable equipment

1470

02:12:18,229 --> 02:12:16,159

tethers

1471

02:12:20,870 --> 02:12:18,239

on the upper strut

1472

02:13:23,510 --> 02:12:20,880

and the lower strut handrails for when

1473

02:13:29,589 --> 02:13:26,629

i'm getting my pgt as a red to spell

1474

02:13:33,189 --> 02:13:29,599

handrail i'm gonna go ahead and retrieve

1475

02:13:41,589 --> 02:13:33,199

shane's green pgt from my true love bag

1476
02:13:46,470 --> 02:13:44,950
hey jimmy i got an adjustable on the

1477
02:13:49,669 --> 02:13:46,480
upper handrail

1478
02:13:51,270 --> 02:13:49,679
it's a large small adjustable

1479
02:13:57,109 --> 02:13:51,280
on me

1480
02:14:01,830 --> 02:13:59,910
puppy shane that is a good config you

1481
02:14:03,750 --> 02:14:01,840
can head back to the cable bag and pick

1482
02:14:06,069 --> 02:14:03,760
up the left

1483
02:14:07,510 --> 02:14:06,079
wire cables we'll be doing the

1484
02:14:09,350 --> 02:14:07,520
same thing on the left side of the mod

1485
02:14:11,189 --> 02:14:09,360
kit but keep in mind when you pre-stage

1486
02:14:19,350 --> 02:14:11,199
the tethers you'll probably need to pick

1487
02:14:19,360 --> 02:14:38,550
copy that thank you

1488
02:14:38,560 --> 02:14:55,430

copy shane

1489

02:14:55,440 --> 02:16:02,390

god

1490

02:16:07,830 --> 02:16:04,629

this is mission control houston 55

1491

02:16:10,069 --> 02:16:07,840

minutes into today's spacewalk

1492

02:16:13,510 --> 02:16:10,079

tomorrow pesquet using a pistol grip

1493

02:16:15,189 --> 02:16:13,520

tool has released four bolts

1494

02:16:16,950 --> 02:16:15,199

restraint bolts

1495

02:16:19,589 --> 02:16:16,960

used

1496

02:16:21,910 --> 02:16:19,599

to uh maintain uh the

1497

02:16:23,510 --> 02:16:21,920

iss rollout solar array in a safe

1498

02:16:25,669 --> 02:16:23,520

configuration on flight support

1499

02:16:28,310 --> 02:16:25,679

equipment it launched on

1500

02:16:29,990 --> 02:16:28,320

in the uh trunk of the cargo dragon

1501

02:16:36,309 --> 02:16:30,000

vehicle that arrived at the station a

1502

02:16:39,830 --> 02:16:38,309

okay

1503

02:16:40,950 --> 02:16:39,840

that's on the other side closer to full

1504

02:16:42,070 --> 02:16:40,960

load

1505

02:16:43,110 --> 02:16:42,080

major

1506

02:16:44,469 --> 02:16:43,120

r5

1507

02:16:47,349 --> 02:16:44,479

that's good with you

1508

02:16:49,910 --> 02:16:47,359

that sounds good to me and good words r5

1509

02:16:52,629 --> 02:16:49,920

is next to stanchion bravo so zenith

1510

02:16:55,750 --> 02:16:52,639

inboard by the poa

1511

02:16:58,070 --> 02:16:55,760

the r5 uh bolt uh being referred to by

1512

02:16:59,669 --> 02:16:58,080

spacewalk communicator jenny seidi is a

1513

02:17:01,190 --> 02:16:59,679

hinge restraint

1514

02:17:02,790 --> 02:17:01,200

for the solar array on its flight

1515

02:17:05,349 --> 02:17:02,800

support structure

1516

02:17:06,589 --> 02:17:05,359

next up fort pesquet would be the

1517

02:17:09,110 --> 02:17:06,599

release of

1518

02:17:11,669 --> 02:17:09,120

anti-rotation devices

1519

02:17:14,070 --> 02:17:11,679

this was a feature installed for launch

1520

02:17:15,349 --> 02:17:14,080

to maintain structural integrity for the

1521

02:17:36,629 --> 02:17:15,359

array on the

1522

02:17:36,639 --> 02:17:47,030

hey

1523

02:17:52,950 --> 02:17:49,349

and cr5

1524

02:17:58,549 --> 02:17:54,790

copy and it should be fully sprung out

1525

02:18:03,190 --> 02:18:00,629

there's no marking though but it looks

1526

02:18:05,830 --> 02:18:03,200

like it is protruding a lot from the

1527

02:18:07,429 --> 02:18:05,840

on the face i think it's a good release

1528

02:18:12,709 --> 02:18:07,439

i don't think i can get my hand there

1529

02:18:18,150 --> 02:18:15,669

copy tamar can you uh use the socket of

1530

02:18:25,190 --> 02:18:18,160

the pgf just to check that it is fully

1531

02:18:25,200 --> 02:18:42,870

right

1532

02:18:48,870 --> 02:18:44,709

jenny i have the white cables i'm not

1533

02:18:53,349 --> 02:18:50,870

copy chain and tomah you do have the

1534

02:18:54,790 --> 02:18:53,359

correct socket

1535

02:18:56,870 --> 02:18:54,800

yeah

1536

02:18:59,190 --> 02:18:56,880

jenny i can appreciate green analogy for

1537

02:19:01,030 --> 02:18:59,200

sarcastic

1538

02:19:03,030 --> 02:19:01,040

copy that sounds great to us you can

1539

02:19:05,190 --> 02:19:03,040

stow your pgt and we'll move on to the

1540

02:19:08,629 --> 02:19:05,200

anti-rotation devices

1541

02:19:19,750 --> 02:19:08,639

so that has you starting at c11

1542

02:19:19,760 --> 02:20:37,560

good words

1543

02:20:37,570 --> 02:20:41,910

[Music]

1544

02:20:53,750 --> 02:20:44,070

you can attach your adjustable equipment

1545

02:20:53,760 --> 02:21:18,710

you want judy

1546

02:21:26,389 --> 02:21:20,550

all right uh jimmy same story here i'll

1547

02:21:26,399 --> 02:22:02,309

coffee shane

1548

02:22:06,870 --> 02:22:04,309

this is mission control houston one hour

1549

02:22:09,429 --> 02:22:06,880

into today's spacewalk by tomah pesquet

1550

02:22:11,990 --> 02:22:09,439

of the european space agency and shane

1551
02:22:14,790 --> 02:22:12,000
kimbrough of nasa the third spacewalk

1552
02:22:16,469 --> 02:22:14,800
this duo has conducted in the past nine

1553
02:22:18,870 --> 02:22:16,479
days

1554
02:22:21,110 --> 02:22:18,880
pesquet is in the process of working to

1555
02:22:24,790 --> 02:22:21,120
release a series of bolts holding the

1556
02:22:26,950 --> 02:22:24,800
iss rollout solar array for the two for

1557
02:22:29,910 --> 02:22:26,960
the 4b power channel on the

1558
02:22:31,750 --> 02:22:29,920
international space station's p6 truss

1559
02:22:34,790 --> 02:22:31,760
from its flight support equipment shane

1560
02:22:36,710 --> 02:22:34,800
kimbrough is over at the p6 work site

1561
02:22:39,429 --> 02:22:36,720
as he is uh stowing equipment and

1562
02:22:41,349 --> 02:22:39,439
preparing to route a series of cables

1563
02:22:44,309 --> 02:22:41,359

that ultimately will be used to hook the

1564

02:22:46,150 --> 02:22:44,319

array up to the electronics assembly

1565

02:22:47,990 --> 02:22:46,160

for the p6 truss

1566

02:22:56,230 --> 02:22:48,000

integrated electronics

1567

02:23:01,910 --> 02:22:58,150

the space walk began

1568

02:23:03,510 --> 02:23:01,920

at 6 52 a.m central time 7 52 a.m

1569

02:23:05,670 --> 02:23:03,520

eastern time

1570

02:23:07,830 --> 02:23:05,680

when pesquet and kimbrough placed their

1571

02:23:10,630 --> 02:23:07,840

suits on battery power in the quest

1572

02:23:12,550 --> 02:23:10,640

airlock they moved outside

1573

02:23:14,710 --> 02:23:12,560

configured their tools and tethers and

1574

02:23:16,710 --> 02:23:14,720

then made their way to their respective

1575

02:23:18,790 --> 02:23:16,720

work sites to begin

1576

02:23:21,030 --> 02:23:18,800

the process of removing this array from

1577

02:23:23,590 --> 02:23:21,040

flytus from its flight support equipment

1578

02:23:27,510 --> 02:23:23,600

that it was launched on a few weeks ago

1579

02:23:31,670 --> 02:23:27,520

on the spacex cargo dragon vehicle

1580

02:23:34,150 --> 02:23:31,680

the array will be uh moved by pesquet

1581

02:23:36,550 --> 02:23:34,160

while he is affixed in a foot restraint

1582

02:23:38,230 --> 02:23:36,560

at the end of the canadarm2 robotic arm

1583

02:23:40,389 --> 02:23:38,240

over to the p6 work site the

1584

02:23:43,510 --> 02:23:40,399

installation work site where kimbrough

1585

02:23:48,150 --> 02:23:45,910

he will be uh driven on that arm by

1586

02:23:50,469 --> 02:23:48,160

astronaut megan mcarthur operating the

1587

02:23:53,270 --> 02:23:50,479

arm from a robotics workstation inside

1588

02:23:54,870 --> 02:23:53,280

the international space station

1589

02:23:57,670 --> 02:23:54,880

here in the flight control room flight

1590

02:24:00,070 --> 02:23:57,680

director puja gesrani is watching over

1591

02:24:03,030 --> 02:24:00,080

the work being conducted by the crew

1592

02:24:05,270 --> 02:24:03,040

assisted by spacewalk communicator jenny

1593

02:24:50,389 --> 02:24:05,280

seidy the astronaut from the canadian

1594

02:24:50,399 --> 02:25:12,550

six

1595

02:25:12,560 --> 02:25:18,950

[Music]

1596

02:25:18,960 --> 02:25:27,110

copy that was seven turns tomorrow

1597

02:25:31,670 --> 02:25:29,190

you can release the ard and then i have

1598

02:25:46,309 --> 02:25:31,680

new settings to drive that stop block

1599

02:25:46,319 --> 02:25:54,070

shane

1600

02:26:02,150 --> 02:25:56,950

once pesquet has

1601
02:26:06,790 --> 02:26:05,110
another launch restraint mechanism

1602
02:26:08,870 --> 02:26:06,800
holding the array in place on the flight

1603
02:26:11,190 --> 02:26:08,880
support equipment

1604
02:26:13,510 --> 02:26:11,200
he will then begin to break torque on

1605
02:26:14,950 --> 02:26:13,520
the final bolts holding the array in

1606
02:26:17,670 --> 02:26:14,960
place

1607
02:26:18,790 --> 02:26:17,680
there's a view of the canadarm2 robotic

1608
02:26:20,790 --> 02:26:18,800
arm

1609
02:26:24,389 --> 02:26:20,800
a portable foot restraint will be

1610
02:26:26,309 --> 02:26:24,399
affixed to the end of the arm by pesquet

1611
02:26:27,910 --> 02:26:26,319
he uh will then mount that foot

1612
02:26:30,870 --> 02:26:27,920
restraint

1613
02:26:32,870 --> 02:26:30,880

to move the freed solar array over to

1614

02:26:40,950 --> 02:26:32,880

the p6 work site where kimbrough is

1615

02:26:40,960 --> 02:26:45,990

is released

1616

02:26:46,000 --> 02:26:50,630

i have settings when you're ready

1617

02:26:50,640 --> 02:26:55,910

okay just one second

1618

02:27:10,060 --> 02:26:58,150

i'm ready

1619

02:27:14,150 --> 02:27:12,550

[Music]

1620

02:27:18,280 --> 02:27:14,160

good words you'll be driving the stop

1621

02:27:18,290 --> 02:27:38,710

[Music]

1622

02:27:38,720 --> 02:27:45,830

getting the adjust holder in place

1623

02:27:49,030 --> 02:27:47,030

copy shane

1624

02:27:50,710 --> 02:27:49,040

next step for you is to pre-stage a wire

1625

02:27:54,469 --> 02:27:50,720

tie and tether

1626
02:27:56,870 --> 02:27:54,479
on the middle soft capture feature

1627
02:27:58,870 --> 02:27:56,880
when you do this we want it to be fully

1628
02:28:01,030 --> 02:27:58,880
slack so that the soft capture feature

1629
02:28:06,309 --> 02:28:01,040
is able to engage initially when we're

1630
02:28:11,590 --> 02:28:09,270
we have a 11.9

1631
02:28:13,830 --> 02:28:11,600
torque green light three and a half

1632
02:28:17,590 --> 02:28:13,840
turns but just like last time the

1633
02:28:22,870 --> 02:28:17,600
stopped off rise up on the base

1634
02:28:27,670 --> 02:28:24,870
okay copy tomah that's fine with us you

1635
02:28:30,070 --> 02:28:27,680
got a green light 11.9 on the torque

1636
02:28:33,510 --> 02:28:30,080
that was 8.5 turns

1637
02:28:49,110 --> 02:28:35,110
3.5

1638
02:28:54,309 --> 02:28:51,670

psk is moving smartly along in the

1639

02:28:56,469 --> 02:28:54,319

release of a variety of different bolts

1640

02:28:58,070 --> 02:28:56,479

and launch restraints holding the array

1641

02:28:59,190 --> 02:28:58,080

in place on this flight support

1642

02:29:00,550 --> 02:28:59,200

equipment

1643

02:29:03,030 --> 02:29:00,560

he is uh

1644

02:29:04,790 --> 02:29:03,040

in the process of breaking torque on the

1645

02:29:07,830 --> 02:29:04,800

final bolts

1646

02:29:09,830 --> 02:29:07,840

holding the irosa or the iss rollout

1647

02:29:11,270 --> 02:29:09,840

solar array in place

1648

02:29:13,349 --> 02:29:11,280

meantime shane kimbrough is

1649

02:29:16,309 --> 02:29:13,359

pre-positioning equipment

1650

02:29:18,630 --> 02:29:16,319

along the mast canister at the very base

1651
02:29:22,309 --> 02:29:18,640
of the p6 solar array

1652
02:29:26,790 --> 02:29:22,319
where a mod kit or mounting bracket is

1653
02:29:29,510 --> 02:29:26,800
set up and was installed on a prior eva

1654
02:29:31,110 --> 02:29:29,520
to which this second solar array will be

1655
02:29:34,070 --> 02:29:31,120
attached

1656
02:29:36,630 --> 02:29:34,080
on the opposite side of where the 2b

1657
02:29:56,550 --> 02:29:36,640
roll out solar array was attached during

1658
02:29:56,560 --> 02:29:59,830
i'm in position

1659
02:30:04,790 --> 02:30:02,710
charlie 12 and i'm ready for setting

1660
02:30:09,030 --> 02:30:04,800
copy confirm that you've attached your

1661
02:30:09,040 --> 02:30:21,190
no not yet it's good

1662
02:31:08,160 --> 02:30:23,110
we have about a minute and 30 seconds

1663
02:31:34,389 --> 02:31:13,830

[Music]

1664

02:31:43,670 --> 02:31:36,710

release the stop block bolt 10 turns

1665

02:31:47,590 --> 02:31:45,750

this is mission control continuing to

1666

02:31:50,469 --> 02:31:47,600

take questions in on

1667

02:31:53,030 --> 02:31:50,479

ask nasa from our viewers

1668

02:31:55,190 --> 02:31:53,040

twitter user asks how do the astronauts

1669

02:31:57,990 --> 02:31:55,200

get their tools out of the tool bag

1670

02:32:00,309 --> 02:31:58,000

while space walking

1671

02:32:01,910 --> 02:32:00,319

as they might drift away in space all

1672

02:32:04,150 --> 02:32:01,920

these tools are in

1673

02:32:05,990 --> 02:32:04,160

a device called a tool caddy which is

1674

02:32:07,510 --> 02:32:06,000

essentially a tool bag

1675

02:32:08,630 --> 02:32:07,520

that they carry along with them and

1676

02:32:10,550 --> 02:32:08,640

which is

1677

02:32:13,830 --> 02:32:10,560

double tethered

1678

02:32:15,990 --> 02:32:13,840

to various positions along the paths

1679

02:32:18,230 --> 02:32:16,000

of their movements on the outside of the

1680

02:32:20,389 --> 02:32:18,240

international space station they

1681

02:32:22,070 --> 02:32:20,399

simply reach into the bag

1682

02:32:24,309 --> 02:32:22,080

pull out a tool

1683

02:32:26,550 --> 02:32:24,319

make sure it's securely tethered in

1684

02:32:29,830 --> 02:32:26,560

place so it doesn't float away and then

1685

02:32:31,910 --> 02:32:29,840

use those tools as necessary

1686

02:32:34,309 --> 02:32:31,920

when we need it kate on twitter asks do

1687

02:32:37,670 --> 02:32:34,319

all the astronauts train for solar array

1688

02:32:39,510 --> 02:32:37,680

evas or spacewalks like tomah and shane

1689

02:32:41,429 --> 02:32:39,520

are conducting the answer

1690

02:32:42,710 --> 02:32:41,439

not exactly

1691

02:32:44,309 --> 02:32:42,720

the

1692

02:32:45,830 --> 02:32:44,319

all crews

1693

02:32:47,990 --> 02:32:45,840

flying on the international space

1694

02:32:50,870 --> 02:32:48,000

station have crew members who are

1695

02:32:53,190 --> 02:32:50,880

trained in generic tasks contingency

1696

02:32:56,469 --> 02:32:53,200

tasks in the event certain critical

1697

02:32:58,790 --> 02:32:56,479

hardware is broken and must be replaced

1698

02:33:01,190 --> 02:32:58,800

and then mission specific tasks such as

1699

02:33:02,469 --> 02:33:01,200

the ones we're watching for this solar

1700

02:33:04,309 --> 02:33:02,479

array work

1701
02:33:05,510 --> 02:33:04,319
they are specifically trained for by

1702
02:33:06,950 --> 02:33:05,520
crew members

1703
02:33:08,469 --> 02:33:06,960
on the assumption that they're going to

1704
02:33:10,070 --> 02:33:08,479
be aboard the international space

1705
02:33:21,030 --> 02:33:10,080
station at the time that hardware

1706
02:33:21,040 --> 02:33:36,710
ready to head back to tomorrow

1707
02:33:41,349 --> 02:33:39,349
shane you can verify that the strut mli

1708
02:33:44,070 --> 02:33:41,359
is clear for our rosa install and then

1709
02:33:45,670 --> 02:33:44,080
we'll have you release your fairlead

1710
02:33:51,670 --> 02:33:45,680
pick up your green hook and head back

1711
02:33:51,680 --> 02:34:04,000
you know

1712
02:34:04,010 --> 02:34:10,070
[Music]

1713
02:34:13,990 --> 02:34:11,590

let me know when you're ready for

1714

02:34:17,230 --> 02:34:14,000

settings to drive the stop block bolt to

1715

02:34:24,150 --> 02:34:19,110

[Music]

1716

02:34:24,160 --> 02:35:00,150

one clockwise two

1717

02:35:03,830 --> 02:35:02,309

then yeah eleven point nine on the third

1718

02:35:08,550 --> 02:35:03,840

good green light

1719

02:35:14,230 --> 02:35:12,070

copy tomah 11.9 torque green light 4.2

1720

02:35:37,429 --> 02:35:14,240

on the turns the stop block bolt is

1721

02:35:42,870 --> 02:35:40,389

yourself nicely done

1722

02:35:45,990 --> 02:35:42,880

agreed nicely done toma when you're at

1723

02:35:47,349 --> 02:35:46,000

the crew lock bag you can stow the

1724

02:35:48,710 --> 02:35:47,359

adjustable equipment tether with the

1725

02:35:50,150 --> 02:35:48,720

ards

1726

02:35:52,389 --> 02:35:50,160

retrieve the scoop with the long

1727

02:36:07,670 --> 02:35:52,399

duration tie-down tether and we'll also

1728

02:36:12,150 --> 02:36:09,990

the anti-rotation devices have now been

1729

02:36:13,429 --> 02:36:12,160

released by pesquet

1730

02:36:15,270 --> 02:36:13,439

next up

1731

02:36:17,830 --> 02:36:15,280

breaking torque on the

1732

02:36:20,309 --> 02:36:17,840

final bolts holding the rollout solar

1733

02:36:42,389 --> 02:36:20,319

array on the flight support equipment on

1734

02:36:47,510 --> 02:36:45,030

there's a good view of tomah pesquet at

1735

02:36:49,349 --> 02:36:47,520

the flight support equipment at the top

1736

02:36:52,309 --> 02:36:49,359

of the screen is the

1737

02:36:54,230 --> 02:36:52,319

second of the roll out solar arrays to

1738

02:36:56,070 --> 02:36:54,240

be installed on the

1739

02:36:58,150 --> 02:36:56,080

p6 truss of the international space

1740

02:36:59,270 --> 02:36:58,160

station this one for the 4b power

1741

02:37:01,910 --> 02:36:59,280

channel

1742

02:37:04,150 --> 02:37:01,920

matching the 2b

1743

02:37:23,429 --> 02:37:04,160

channel array that was installed during

1744

02:37:27,429 --> 02:37:25,590

just before we lost our signal during a

1745

02:37:29,750 --> 02:37:27,439

handover between satellites on the

1746

02:37:31,670 --> 02:37:29,760

tracking and data relay satellite system

1747

02:37:33,750 --> 02:37:31,680

the international space station flying

1748

02:37:36,389 --> 02:37:33,760

into an orbital sunrise

1749

02:37:38,389 --> 02:37:36,399

about to cross the coastline

1750

02:37:40,630 --> 02:37:38,399

at the border between california and

1751
02:37:41,830 --> 02:37:40,640
oregon moving from southwest to

1752
02:37:59,990 --> 02:37:41,840
northeast

1753
02:38:04,070 --> 02:38:01,990
we're back with you after a handover i

1754
02:38:06,070 --> 02:38:04,080
copy that you are retrieving the scoop

1755
02:38:09,270 --> 02:38:06,080
from the crew lock bag can you confirm

1756
02:38:11,240 --> 02:38:09,280
whether you sewed the adjustable

1757
02:38:21,670 --> 02:38:11,250
yes

1758
02:38:26,309 --> 02:38:24,469
the rollout solar array technology

1759
02:38:28,070 --> 02:38:26,319
being installed on the space station to

1760
02:38:29,270 --> 02:38:28,080
augment the power capability of the

1761
02:38:31,349 --> 02:38:29,280
complex

1762
02:38:33,349 --> 02:38:31,359
is going to be used

1763
02:38:35,830 --> 02:38:33,359

for the gateway program

1764

02:38:38,870 --> 02:38:35,840

the gateway being an outpost that will

1765

02:38:42,070 --> 02:38:38,880

be developed and orbited

1766

02:38:43,429 --> 02:38:42,080

to fly uh to orbit the moon to provide

1767

02:38:45,910 --> 02:38:43,439

support for

1768

02:38:48,309 --> 02:38:45,920

the human return to the lunar surface

1769

02:38:50,309 --> 02:38:48,319

and a staging point for deep space

1770

02:38:52,710 --> 02:38:50,319

exploration it's a critical component of

1771

02:38:53,990 --> 02:38:52,720

the artemis program you can see in this

1772

02:38:55,429 --> 02:38:54,000

graphic

1773

02:38:58,870 --> 02:38:55,439

the current

1774

02:38:59,830 --> 02:38:58,880

legacy or heritage iss solar array wings

1775

02:39:01,510 --> 02:38:59,840

and their

1776

02:39:04,389 --> 02:39:01,520

vast size

1777

02:39:06,790 --> 02:39:04,399

the comparative size of the

1778

02:39:08,309 --> 02:39:06,800

rollouts solar arrays being installed on

1779

02:39:11,750 --> 02:39:08,319

the international space station to

1780

02:39:14,550 --> 02:39:11,760

provide an additional 120 kilowatts of

1781

02:39:16,150 --> 02:39:14,560

power for station systems payloads and

1782

02:39:19,270 --> 02:39:16,160

new modules to be launched to the

1783

02:39:21,349 --> 02:39:19,280

complex and on the far right what the

1784

02:39:23,429 --> 02:39:21,359

power and propulsion element for gateway

1785

02:39:25,590 --> 02:39:23,439

that solar array wing is going to look

1786

02:39:28,230 --> 02:39:25,600

like for the hardware that will be

1787

02:39:38,710 --> 02:39:28,240

launched to orbit the moon serving as a

1788

02:39:38,720 --> 02:39:43,750

yeah i have my greenhouse coming in

1789

02:39:48,630 --> 02:39:46,309

copy shane you'll be translating to the

1790

02:39:57,389 --> 02:39:48,640

fse grapple tower to coordinate with

1791

02:40:02,630 --> 02:40:01,510

255 miles over idaho thomas pesquet is

1792

02:40:04,870 --> 02:40:02,640

at the

1793

02:40:06,710 --> 02:40:04,880

flight support equipment he'll be

1794

02:40:09,590 --> 02:40:06,720

breaking torque on the final set of

1795

02:40:11,349 --> 02:40:09,600

bolts holding the solar array

1796

02:40:35,190 --> 02:40:11,359

that you see at the top of your screen

1797

02:40:35,200 --> 02:40:50,230

uh

1798

02:40:55,349 --> 02:40:52,630

here after 12 inch seven six

1799

02:41:00,309 --> 02:40:55,359

on the socket cables you could pull test

1800

02:41:42,710 --> 02:41:03,269

copy and good pull test on the 7 16 12

1801

02:41:54,309 --> 02:41:43,980

going

1802

02:41:54,319 --> 02:42:09,429

there

1803

02:42:15,110 --> 02:42:13,030

should i go honest starting to get

1804

02:42:16,950 --> 02:42:15,120

uh new copyright string or breaking up a

1805

02:42:19,110 --> 02:42:16,960

little bit yeah which route should i

1806

02:42:20,950 --> 02:42:19,120

take to get there's another series

1807

02:42:23,510 --> 02:42:20,960

i think uh it doesn't really matter i

1808

02:42:25,750 --> 02:42:23,520

think my 6th better is kind of more

1809

02:42:51,990 --> 02:42:25,760

media right now and i'll go maybe here

1810

02:43:01,590 --> 02:42:55,510

okay another sideways 12 inch on my pgt

1811

02:43:05,190 --> 02:43:02,950

kapitama

1812

02:43:08,469 --> 02:43:05,200

will now be breaking torque on the arosa

1813

02:43:13,269 --> 02:43:08,479

fse bolts charlie 12 and charlie 11.

1814

02:43:13,279 --> 02:43:17,830

happy charlie 12.

1815

02:43:23,910 --> 02:43:19,429

okay shane let me know when you've

1816

02:43:23,920 --> 02:43:31,990

you're coming later i'm coming later

1817

02:43:32,000 --> 02:43:47,429

getting on right now

1818

02:43:47,439 --> 02:43:51,830

each other

1819

02:44:00,070 --> 02:43:55,110

are you on the ssc i am

1820

02:44:04,870 --> 02:44:02,150

shane kimbrough now joining pesquet at

1821

02:44:05,830 --> 02:44:04,880

the flight support equipment to lend a

1822

02:44:07,590 --> 02:44:05,840

hand

1823

02:44:09,910 --> 02:44:07,600

as uh pesquet

1824

02:44:12,150 --> 02:44:09,920

is about to uh

1825

02:44:14,070 --> 02:44:12,160

work with his pistol grip tool to

1826

02:44:17,190 --> 02:44:14,080

release uh

1827

02:44:21,670 --> 02:44:19,190

as a bolts translate

1828

02:44:23,510 --> 02:44:21,680

holding the solar array that you see at

1829

02:44:25,429 --> 02:44:23,520

the very top of your screen to this

1830

02:44:26,309 --> 02:44:25,439

flight support equipment

1831

02:44:28,550 --> 02:44:26,319

the

1832

02:44:30,550 --> 02:44:28,560

two arrays this first pair of arrays

1833

02:44:31,429 --> 02:44:30,560

were launched in the

1834

02:44:33,990 --> 02:44:31,439

trunk

1835

02:44:36,630 --> 02:44:34,000

of the spacex cargo dragon vehicle a few

1836

02:44:39,429 --> 02:44:36,640

weeks ago this flight support equipment

1837

02:44:42,469 --> 02:44:39,439

will be uh robotically detached from its

1838

02:44:46,230 --> 02:44:42,479

location that you see on the truss and

1839

02:44:49,429 --> 02:44:46,240

uh reinstalled in the trunk of dragon

1840

02:44:52,710 --> 02:44:49,439

spacex is scheduled to undock

1841

02:44:54,870 --> 02:44:52,720

the cargo dragon vehicle on july 6th

1842

02:44:57,349 --> 02:44:54,880

and de-orbit for a splashdown in the

1843

02:44:59,510 --> 02:44:57,359

atlantic ocean the following day

1844

02:45:02,070 --> 02:44:59,520

bringing home scientific experiments and

1845

02:45:04,070 --> 02:45:02,080

other cargo

1846

02:45:06,150 --> 02:45:04,080

the trunk of dragon will be uh

1847

02:45:07,990 --> 02:45:06,160

jettisoned and disposed of with that

1848

02:45:10,150 --> 02:45:08,000

flight support equipment

1849

02:45:12,150 --> 02:45:10,160

prior to the re-entry

1850

02:45:14,469 --> 02:45:12,160

of the dragon for its

1851

02:45:17,590 --> 02:45:14,479

parachute assisted splashdown

1852

02:45:19,510 --> 02:45:17,600

in the atlantic ocean breaking torque

1853

02:45:23,429 --> 02:45:19,520

and your settings are bravo three

1854

02:45:26,710 --> 02:45:24,550

um

1855

02:45:28,140 --> 02:45:26,720

what you have done breaking four level

1856

02:45:47,910 --> 02:45:28,150

three tenths

1857

02:45:59,830 --> 02:45:49,349

that's the moment the tower and all

1858

02:46:03,190 --> 02:46:01,269

and shane understand you're holding in

1859

02:46:06,230 --> 02:46:03,200

position i'll have big picture words for

1860

02:46:21,670 --> 02:46:06,240

both of you once tomorrow breaks torque

1861

02:46:27,750 --> 02:46:23,670

you say clockwise two accounts or two

1862

02:46:31,190 --> 02:46:29,750

okay another three

1863

02:46:32,150 --> 02:46:31,200

after two

1864

02:46:33,910 --> 02:46:32,160

challenge

1865

02:46:35,990 --> 02:46:33,920

half a turn

1866

02:46:38,630 --> 02:46:36,000

good grades

1867

02:46:47,910 --> 02:46:38,640

okay that's done

1868

02:46:53,190 --> 02:46:50,870

big picture for you both we are

1869

02:46:54,630 --> 02:46:53,200

more or less on timeline

1870

02:46:57,590 --> 02:46:54,640

p-e-t

1871

02:47:00,070 --> 02:46:57,600

one hour 25 minutes and our limiting

1872

02:47:08,950 --> 02:47:00,080

consumable is seven hour ten minute on

1873

02:47:13,269 --> 02:47:11,030

at this point shane we're going to have

1874

02:47:15,910 --> 02:47:13,279

you hold position i have a couple of

1875

02:47:18,790 --> 02:47:15,920

steps for you but primarily we will be

1876
02:47:20,710 --> 02:47:18,800
waiting to release charlie 11 once tomah

1877
02:47:22,230 --> 02:47:20,720
has configured the arm in the meantime

1878
02:47:27,750 --> 02:47:22,240
i'll take a glove inspection and a half

1879
02:47:27,760 --> 02:47:34,389
everyone's gloves look good no change

1880
02:47:34,399 --> 02:48:02,260
happy

1881
02:48:02,270 --> 02:48:07,269
[Music]

1882
02:48:14,830 --> 02:48:10,469
same settings bravo three counter two

1883
02:48:14,840 --> 02:48:18,230
level or two

1884
02:48:22,790 --> 02:48:21,670
okay talk is broken on solid 11.

1885
02:48:25,269 --> 02:48:22,800
copy

1886
02:48:27,990 --> 02:48:25,279
we'll now be releasing the irosa fse

1887
02:48:30,309 --> 02:48:28,000
bolts so starting with charlie 11 so in

1888
02:48:34,309 --> 02:48:30,319

your current location we'll be releasing

1889

02:48:36,550 --> 02:48:34,319

it 27 turns only which is just halfway

1890

02:48:39,110 --> 02:48:36,560

so not fully releasing the bolt

1891

02:48:49,349 --> 02:48:39,120

and your settings are bravo three

1892

02:48:49,359 --> 02:48:58,070

copy

1893

02:49:02,870 --> 02:49:01,030

shane you can retrieve the square scoop

1894

02:49:04,950 --> 02:49:02,880

from the crewlock bag and stow it on

1895

02:49:07,030 --> 02:49:04,960

your mini workstation and i'll also get

1896

02:49:29,269 --> 02:49:07,040

a confirmation of a green light on your

1897

02:49:33,510 --> 02:49:30,950

this is mission control houston we're

1898

02:49:35,830 --> 02:49:33,520

approaching the one hour 30 minute mark

1899

02:49:37,110 --> 02:49:35,840

into uh today's space walk by pesquet

1900

02:49:39,269 --> 02:49:37,120

and kimbrough

1901

02:49:40,389 --> 02:49:39,279

hey firm the crew just about on the

1902

02:49:43,110 --> 02:49:40,399

timeline

1903

02:49:47,590 --> 02:49:43,120

pesquet is releasing the last of the

1904

02:49:49,910 --> 02:49:47,600

bolts holding the irosa or iss rollout

1905

02:49:52,309 --> 02:49:49,920

solar array in place on the flight

1906

02:49:54,469 --> 02:49:52,319

support equipment being assisted by

1907

02:49:56,230 --> 02:49:54,479

shane kimbrough you can see him using a

1908

02:49:59,510 --> 02:49:56,240

pistol grip tool

1909

02:50:02,150 --> 02:49:59,520

once uh these bolts are released

1910

02:50:04,230 --> 02:50:02,160

pesquet then will set up a portable foot

1911

02:50:06,790 --> 02:50:04,240

restraint at the end of the canadarm2

1912

02:50:07,670 --> 02:50:06,800

robotic arm that he will plant his feet

1913

02:50:10,230 --> 02:50:07,680

in

1914

02:50:12,469 --> 02:50:10,240

for a ride over to the p6 truss while he

1915

02:50:13,510 --> 02:50:12,479

holds the array for a handoff to

1916

02:50:15,190 --> 02:50:13,520

kimbrough

1917

02:50:17,990 --> 02:50:15,200

in the first

1918

02:50:19,670 --> 02:50:18,000

phase of the actual installation process

1919

02:50:22,230 --> 02:50:19,680

on a mounting bracket

1920

02:50:25,510 --> 02:50:22,240

at the base of the mast canister at the

1921

02:50:27,510 --> 02:50:25,520

base of the p6 truss structure you can

1922

02:50:32,870 --> 02:50:27,520

stow your ptt and translate to charlie

1923

02:50:32,880 --> 02:50:37,910

the ev2 has the green light

1924

02:50:37,920 --> 02:50:43,269

copy

1925

02:50:53,269 --> 02:50:44,790

and shane we're also going to take a

1926
02:51:28,290 --> 02:50:54,870
hey firm you're retrieving the scoop and

1927
02:51:35,830 --> 02:51:31,269
[Music]

1928
02:51:35,840 --> 02:51:38,630
number three

1929
02:51:41,590 --> 02:51:40,630
a firm and you'll be releasing charlie

1930
02:51:44,790 --> 02:51:41,600
12

1931
02:51:48,550 --> 02:51:44,800
51 to 54 bolts the bolt will spring out

1932
02:51:54,309 --> 02:51:50,670
we tell you 12

1933
02:52:13,190 --> 02:51:54,319
135 turns 50 14 sorry

1934
02:52:19,830 --> 02:52:14,469
and i'm going to get these laundry

1935
02:52:19,840 --> 02:52:28,630
probably shane

1936
02:52:31,349 --> 02:52:29,990
and shane that's right you will be

1937
02:53:57,429 --> 02:52:31,359
retrieving a long duration tight on

1938
02:54:00,950 --> 02:53:59,030

okay jenny have to work a little bit on

1939

02:54:02,840 --> 02:54:00,960

my body position here she bear with me

1940

02:54:03,990 --> 02:54:02,850

for a second

1941

02:54:43,429 --> 02:54:04,000

[Music]

1942

02:54:43,439 --> 02:55:08,630

station

1943

02:55:11,830 --> 02:55:09,830

okay

1944

02:55:13,269 --> 02:55:11,840

just turned on the feet

1945

02:55:15,750 --> 02:55:13,279

i'm sorry what you're getting some

1946

02:55:17,830 --> 02:55:15,760

serious turns on the

1947

02:55:19,510 --> 02:55:17,840

copyright only here turn on the pgt

1948

02:55:21,670 --> 02:55:19,520

saying that's your question so i said

1949

02:55:23,830 --> 02:55:21,680

you're getting a lot of turns on it i

1950

02:55:25,269 --> 02:55:23,840

know

1951

02:55:30,230 --> 02:55:25,279

i've been starting to get them working

1952

02:55:38,630 --> 02:55:33,830

all right genuine ready for charlie 12

1953

02:55:38,640 --> 02:55:45,750

happy tomorrow

1954

02:55:45,760 --> 02:56:02,469

yeah move a little bit up

1955

02:56:02,479 --> 02:56:11,990

2085

1956

02:56:12,000 --> 02:56:29,030

one

1957

02:56:39,670 --> 02:56:31,510

both out

1958

02:56:46,150 --> 02:56:42,070

copy c12 is fully released popped out

1959

02:56:49,349 --> 02:56:47,510

correct

1960

02:56:51,349 --> 02:56:49,359

i need a couple more now i'm actually

1961

02:56:54,070 --> 02:56:51,359

giving the volt is keeping i think it's

1962

02:56:55,990 --> 02:56:54,080

a good reason i'll be 12.

1963

02:56:57,349 --> 02:56:56,000

okay understood you can stow your pgt

1964

02:57:14,389 --> 02:56:57,359

and then i'll take a glove inspection

1965

02:57:14,399 --> 02:57:39,830

uh

1966

02:57:39,840 --> 02:57:50,550

foreign

1967

02:57:54,389 --> 02:57:52,630

you'll be installing a square scoop on

1968

02:57:55,510 --> 02:57:54,399

the root beam micro square near charlie

1969

02:58:15,349 --> 02:57:55,520

12.

1970

02:58:20,150 --> 02:58:17,510

tomorrow pesquet about to complete the

1971

02:58:22,950 --> 02:58:20,160

loosening of bolts holding the

1972

02:58:59,349 --> 02:58:22,960

iss rollout solar array in place on its

1973

02:59:04,389 --> 02:59:01,429

and this group is marked

1974

02:59:07,110 --> 02:59:04,399

on the meteor on the micro fixture next

1975

02:59:09,349 --> 02:59:07,120

to charlie travel charlie 6.

1976

02:59:12,070 --> 02:59:09,359

stop it remove your rat

1977

02:59:16,309 --> 02:59:12,080

and translate back to the tower handrail

1978

02:59:23,429 --> 02:59:17,990

yeah half drive

1979

02:59:35,750 --> 02:59:24,389

puppy

1980

02:59:40,230 --> 02:59:38,309

as the international space station

1981

02:59:42,710 --> 02:59:40,240

prepares to cross the

1982

02:59:44,870 --> 02:59:42,720

northwest coast of africa

1983

02:59:46,469 --> 02:59:44,880

on a trajectory from northwest to

1984

02:59:48,389 --> 02:59:46,479

southeast

1985

02:59:50,469 --> 02:59:48,399

tomah pesquet has completed the

1986

02:59:54,389 --> 02:59:50,479

loosening of bolts

1987

02:59:55,990 --> 02:59:54,399

that has held the irosa or iss rollout

1988

02:59:57,830 --> 02:59:56,000

solar array in place on its flight

1989

03:00:00,309 --> 02:59:57,840

support equipment

1990

03:00:01,990 --> 03:00:00,319

next up for pesquet who's at the bottom

1991

03:00:05,269 --> 03:00:02,000

of your screen shane kimbrough at the

1992

03:00:06,469 --> 03:00:05,279

top of your screen will be for pesquet

1993

03:00:08,389 --> 03:00:06,479

to set up

1994

03:00:16,309 --> 03:00:08,399

a portable foot restraint at the end of

1995

03:00:16,319 --> 03:00:23,490

i'm sure here comes your uh

1996

03:00:23,500 --> 03:00:34,790

[Music]

1997

03:00:34,800 --> 03:00:38,150

there you go

1998

03:00:38,160 --> 03:01:12,230

here

1999

03:01:12,240 --> 03:01:49,990

now

2000

03:02:37,030 --> 03:01:51,510

nevermind

2001

03:02:37,040 --> 03:02:44,330

okay

2002

03:02:51,269 --> 03:02:50,030

[Music]

2003

03:02:53,830 --> 03:02:51,279

[Applause]

2004

03:02:56,870 --> 03:02:53,840

you can translate to the port cedar cart

2005

03:02:57,750 --> 03:02:56,880

and then we will have you give ssrms a

2006

03:02:59,830 --> 03:02:57,760

go

2007

03:03:05,030 --> 03:02:59,840

when you're ready for the published apfr

2008

03:03:09,990 --> 03:03:08,550

uh okay copy support see that card

2009

03:03:17,510 --> 03:03:10,000

and

2010

03:03:20,389 --> 03:03:17,520

sure you get cleared with your feather

2011

03:03:22,309 --> 03:03:20,399

and mind because before i do anything i

2012

03:03:24,469 --> 03:03:22,319

think it's a good idea

2013

03:03:26,870 --> 03:03:24,479

let me know when you're clear

2014

03:03:28,309 --> 03:03:26,880

the view from tomah pesquet's helmet

2015

03:03:29,990 --> 03:03:28,319

camera

2016

03:03:32,150 --> 03:03:30,000

as he is uh

2017

03:03:34,950 --> 03:03:32,160

right at that flight support equipment

2018

03:03:36,870 --> 03:03:34,960

and looking right at the iss rollout

2019

03:03:38,790 --> 03:03:36,880

solar array

2020

03:03:41,030 --> 03:03:38,800

moments from now

2021

03:03:44,070 --> 03:03:41,040

they'll get the go-ahead

2022

03:03:46,309 --> 03:03:44,080

to begin work to affix a an articulating

2023

03:03:47,030 --> 03:03:46,319

portable foot restraint to the end of

2024

03:03:49,349 --> 03:03:47,040

the

2025

03:03:51,670 --> 03:03:49,359

canadarm2 robotic arm

2026
03:03:53,750 --> 03:03:51,680
megan mcarthur inside the international

2027
03:03:56,389 --> 03:03:53,760
space station at the controls

2028
03:03:58,950 --> 03:03:56,399
of the arm from a robotics workstation

2029
03:04:01,750 --> 03:03:58,960
she'll be maneuvering the arm into the

2030
03:04:03,429 --> 03:04:01,760
proper position for pesquet to install

2031
03:04:05,190 --> 03:04:03,439
that foot restraint at the end of the

2032
03:04:07,269 --> 03:04:05,200
arm he will ultimately

2033
03:04:09,190 --> 03:04:07,279
ride in the foot restraint at the end of

2034
03:04:12,389 --> 03:04:09,200
the arm holding the array

2035
03:04:15,190 --> 03:04:12,399
that will transport him and the array to

2036
03:04:17,750 --> 03:04:15,200
the port 6 truss worksite where it will

2037
03:04:38,070 --> 03:04:17,760
be installed on a mounting bracket for

2038
03:04:42,469 --> 03:04:40,630

and the view of pesquet wearing the suit

2039

03:04:45,830 --> 03:04:42,479

bearing the red stripes

2040

03:04:48,389 --> 03:04:45,840

you can see the canadarm2 poised to

2041

03:04:51,349 --> 03:04:48,399

accept the installation of that

2042

03:04:53,910 --> 03:04:51,359

foot restraint the next task on

2043

03:04:56,389 --> 03:04:53,920

pesquet's list of things to do

2044

03:04:58,710 --> 03:04:56,399

as he and kimbrough work in tandem

2045

03:05:00,550 --> 03:04:58,720

at the one hour 43 minute mark into

2046

03:05:04,150 --> 03:05:00,560

today's spacewalk

2047

03:05:07,670 --> 03:05:06,150

setup position

2048

03:05:10,710 --> 03:05:07,680

copy we've got a public position that

2049

03:05:11,910 --> 03:05:10,720

will move 50 centimeters station zenith

2050

03:05:13,670 --> 03:05:11,920

all right that sounds good and i'm

2051

03:05:16,150 --> 03:05:13,680

driving this ball but i'll let you know

2052

03:05:17,590 --> 03:05:16,160

let's start with 50 10 years and you can

2053

03:05:31,349 --> 03:05:17,600

start

2054

03:05:52,389 --> 03:05:31,359

motion

2055

03:05:57,349 --> 03:05:54,469

macarthur operating the arm vanda high

2056

03:05:59,990 --> 03:05:57,359

providing a visual cues from inside the

2057

03:06:03,030 --> 03:06:00,000

station as the arm makes its way uh

2058

03:06:04,469 --> 03:06:03,040

towards where pesquet is located

2059

03:06:06,469 --> 03:06:04,479

again he

2060

03:06:08,550 --> 03:06:06,479

soon will be installing uh this

2061

03:06:10,309 --> 03:06:08,560

articulating portable foot restraint to

2062

03:06:12,830 --> 03:06:10,319

the end of the arm

2063

03:06:15,269 --> 03:06:12,840

to serve as a foot platform a work

2064

03:06:18,070 --> 03:06:15,279

platform for his transport over to the

2065

03:06:20,710 --> 03:06:18,080

p6 work site

2066

03:06:23,269 --> 03:06:20,720

can you give me

2067

03:06:24,950 --> 03:06:23,279

25 or 30. three view centimeters

2068

03:06:27,030 --> 03:06:24,960

stationed up i have a great view of the

2069

03:06:29,349 --> 03:06:27,040

clearance right here

2070

03:06:36,950 --> 03:06:29,359

happy three zero centimeters stationed

2071

03:06:46,309 --> 03:06:39,590

starting motion especially good motion

2072

03:06:54,870 --> 03:06:48,870

20 centimeters to go

2073

03:06:57,990 --> 03:06:56,550

and i know what you can stop motion

2074

03:06:59,110 --> 03:06:58,000

right here i think this is a good

2075

03:07:00,790 --> 03:06:59,120

position

2076

03:07:02,309 --> 03:07:00,800

okay stop motion

2077

03:07:07,349 --> 03:07:02,319

i'll call that

2078

03:07:13,349 --> 03:07:10,309

mixer on go for apfr we can take help

2079

03:07:15,349 --> 03:07:13,359

you break our own nice work

2080

03:07:17,990 --> 03:07:15,359

understand breaks on tomorrow you can

2081

03:07:28,070 --> 03:07:18,000

read to the apfr you'll release it and

2082

03:07:32,150 --> 03:07:30,230

shane we still have you

2083

03:07:34,230 --> 03:07:32,160

holding position on the fse we don't

2084

03:07:36,710 --> 03:07:34,240

have any get ahead steps for you right

2085

03:07:40,150 --> 03:07:36,720

now so you can position to release

2086

03:07:41,990 --> 03:07:40,160

charlie 11 near stanchion delta

2087

03:07:43,990 --> 03:07:42,000

so that's outboard

2088

03:07:45,030 --> 03:07:44,000

and nader pretty close to where you are

2089

03:07:50,710 --> 03:07:45,040

now

2090

03:07:50,720 --> 03:07:56,630

happy

2091

03:07:56,640 --> 03:08:19,030

coffee

2092

03:08:37,910 --> 03:08:22,389

any hsr results

2093

03:08:41,110 --> 03:08:38,790

okay

2094

03:08:43,750 --> 03:08:41,120

the photos are out

2095

03:08:50,630 --> 03:08:43,760

color is locked black on black

2096

03:08:57,910 --> 03:08:53,349

good install verify apfr settings papa

2097

03:09:02,309 --> 03:09:00,309

papa papa foxtrot 6 jamie these are

2098

03:09:04,230 --> 03:09:02,319

correct

2099

03:09:26,550 --> 03:09:04,240

copy you can release your rut and then

2100

03:09:26,560 --> 03:09:34,229

puppy

2101
03:09:58,469 --> 03:09:36,790
lock your green tether reel and check

2102
03:10:02,229 --> 03:10:00,309
okay my screen

2103
03:10:03,910 --> 03:10:02,239
never real

2104
03:10:09,030 --> 03:10:03,920
locked

2105
03:10:12,950 --> 03:10:10,070
copy

2106
03:10:32,309 --> 03:10:12,960
move yellow hook to ssrms handrail

2107
03:10:36,950 --> 03:10:33,670
the yellow hook

2108
03:10:43,110 --> 03:10:38,830
is marked black on

2109
03:10:46,710 --> 03:10:43,120
black red reel is unlocked

2110
03:10:47,510 --> 03:10:46,720
copy attach green hook to the port cedar

2111
03:11:15,590 --> 03:10:47,520
cart

2112
03:11:20,630 --> 03:11:18,070
my green hook is attached

2113
03:11:21,590 --> 03:11:20,640

to the fourth heater cart and my green

2114

03:11:23,910 --> 03:11:21,600

reel

2115

03:11:25,110 --> 03:11:23,920

is unlocked

2116

03:11:28,550 --> 03:11:25,120

good config

2117

03:11:35,350 --> 03:11:28,560

give ssrms a go to gca to the published

2118

03:11:46,630 --> 03:11:36,270

[Music]

2119

03:11:46,640 --> 03:11:58,400

initially for me

2120

03:12:04,630 --> 03:12:03,030

[Music]

2121

03:12:07,110 --> 03:12:04,640

society station forward first if you

2122

03:12:08,630 --> 03:12:07,120

need to use and then the station made

2123

03:12:10,229 --> 03:12:08,640

here the fbi

2124

03:12:11,670 --> 03:12:10,239

coffee we're going to the publicity is

2125

03:12:13,349 --> 03:12:11,680

stationed for 20 centimeters and

2126
03:12:15,269 --> 03:12:13,359
stationed near 50 centimeters we'll do

2127
03:12:18,150 --> 03:12:15,279
those in series if you agree that sounds

2128
03:12:20,630 --> 03:12:18,160
perfect

2129
03:12:38,070 --> 03:12:20,640
did you agree we'll call that star qca

2130
03:12:38,080 --> 03:12:41,030
starting motion

2131
03:12:59,670 --> 03:12:43,590
good motion station forward

2132
03:12:59,680 --> 03:13:04,070
sounds good

2133
03:13:16,870 --> 03:13:05,349
starting motion

2134
03:13:16,880 --> 03:13:23,030
15 centimeters to go 10.

2135
03:13:23,040 --> 03:13:30,870
we got now 5-10 years to go

2136
03:13:35,190 --> 03:13:32,469
and that's the published position how

2137
03:13:37,830 --> 03:13:35,200
does that look come on that looks

2138
03:13:40,950 --> 03:13:37,840

good maybe

2139

03:13:49,990 --> 03:13:40,960

more station forward

2140

03:13:58,710 --> 03:13:51,510

starting motion

2141

03:14:08,469 --> 03:14:01,269

and you can stop watching that's nice

2142

03:14:12,070 --> 03:14:09,990

mark vande high

2143

03:14:13,990 --> 03:14:12,080

providing visual cues

2144

03:14:17,030 --> 03:14:14,000

uh megan mcarthur maneuvering the arm

2145

03:14:20,550 --> 03:14:17,040

from the robotics workstation inside the

2146

03:14:22,070 --> 03:14:20,560

international space station toma pesque

2147

03:14:24,389 --> 03:14:22,080

at the arm

2148

03:14:26,870 --> 03:14:24,399

ready to uh plant his feet in the

2149

03:14:28,070 --> 03:14:26,880

portable foot restraint

2150

03:14:30,790 --> 03:14:28,080

for the

2151
03:14:32,630 --> 03:14:30,800
operation to actually release the

2152
03:14:34,309 --> 03:14:32,640
rollout solar array from its flight

2153
03:14:49,910 --> 03:14:34,319
support equipment

2154
03:14:54,150 --> 03:14:51,590
can you move a little bit and i think

2155
03:15:01,349 --> 03:14:54,160
you can see it should try to fight this

2156
03:15:01,359 --> 03:15:19,110
all right down towards the tower

2157
03:15:23,590 --> 03:15:21,990
i'm in the airport

2158
03:15:25,590 --> 03:15:23,600
good

2159
03:15:27,190 --> 03:15:25,600
copy tomorrow check your tools and

2160
03:15:31,190 --> 03:15:27,200
tethers are clear and the ingress eight

2161
03:15:31,200 --> 03:15:41,910
the english city stone

2162
03:15:41,920 --> 03:15:49,590
right

2163
03:15:54,950 --> 03:15:50,870

tomorrow when you're ready you can give

2164

03:15:58,950 --> 03:15:56,950

i would like guys to change my eyes on

2165

03:16:00,950 --> 03:15:58,960

the on the feather because it's kind of

2166

03:16:03,750 --> 03:16:00,960

yeah on my back i have eyes on now

2167

03:16:05,830 --> 03:16:03,760

tomorrow yeah yeah about uh two feet

2168

03:16:06,710 --> 03:16:05,840

above you as my color okay and i'll

2169

03:16:08,229 --> 03:16:06,720

watch it

2170

03:16:09,750 --> 03:16:08,239

look good to you

2171

03:16:12,550 --> 03:16:09,760

looking screwed right now that was my

2172

03:16:14,630 --> 03:16:12,560

epa look look good

2173

03:16:16,229 --> 03:16:14,640

that looks great okay

2174

03:16:19,590 --> 03:16:16,239

uh wraps uh

2175

03:16:24,070 --> 03:16:19,600

mark i am ready for the maneuver

2176

03:16:25,349 --> 03:16:24,080

uh the ingress back off position

2177

03:16:28,389 --> 03:16:25,359

happy we're putting that work holding

2178

03:16:28,399 --> 03:16:37,910

right

2179

03:16:42,630 --> 03:16:41,190

nice workshop off p6

2180

03:16:44,150 --> 03:16:42,640

thanks

2181

03:17:01,429 --> 03:16:44,160

to you man you were driving some serious

2182

03:17:01,439 --> 03:17:09,190

starting motion station forward

2183

03:17:37,990 --> 03:17:11,030

that's a good motion mark

2184

03:17:40,630 --> 03:17:39,349

he actually just completed the forward

2185

03:17:43,269 --> 03:17:40,640

motion so we can definitely go later

2186

03:17:45,269 --> 03:17:43,279

that would be our next step

2187

03:17:46,229 --> 03:17:45,279

i'll try to bend forward as much as i

2188

03:17:51,830 --> 03:17:46,239

can

2189

03:17:58,550 --> 03:17:55,429

working with mark vande high to

2190

03:17:59,750 --> 03:17:58,560

properly position pesquet

2191

03:18:02,469 --> 03:17:59,760

at the

2192

03:18:20,950 --> 03:18:02,479

fine-tuned orientation for

2193

03:18:20,960 --> 03:18:44,469

happy thanks

2194

03:19:43,030 --> 03:18:46,469

while you're now clear of my feather

2195

03:19:50,870 --> 03:19:46,070

operating like a utility worker at the

2196

03:19:53,269 --> 03:19:50,880

end of a portable platform pesquet

2197

03:19:55,670 --> 03:19:53,279

at the end of the uh

2198

03:19:57,990 --> 03:19:55,680

canadarm2 and the view on the right is

2199

03:19:59,990 --> 03:19:58,000

from his helmet camera

2200

03:20:01,429 --> 03:20:00,000

being maneuvered into the proper

2201

03:20:03,910 --> 03:20:01,439

position

2202

03:20:06,229 --> 03:20:03,920

for the release of the irosa solar array

2203

03:20:40,070 --> 03:20:06,239

from its flight support equipment manual

2204

03:20:43,269 --> 03:20:41,670

well we're getting configured for the

2205

03:20:44,950 --> 03:20:43,279

joint oh cast i'll get a glove

2206

03:20:49,269 --> 03:20:44,960

inspection and half check from both

2207

03:20:57,750 --> 03:20:52,070

there's any good gloves for me

2208

03:21:01,990 --> 03:21:00,389

copy good checks on ev1 and ev2 and for

2209

03:21:04,469 --> 03:21:02,000

your awareness we are having issues with

2210

03:21:07,190 --> 03:21:04,479

heka today so i'll ask you a couple more

2211

03:21:09,349 --> 03:21:07,200

times during the cva i'm sure to power

2212

03:21:13,429 --> 03:21:09,359

cycle and check for a green light

2213

03:21:34,950 --> 03:21:15,830

okay jenny no problem no the green light

2214

03:21:34,960 --> 03:21:43,750

puppy tube

2215

03:22:00,070 --> 03:21:46,870

thanks mark i am ready for motion

2216

03:22:05,670 --> 03:22:02,630

two hours into today's spacewalk tomah

2217

03:22:07,910 --> 03:22:05,680

pesquet now being maneuvered toward the

2218

03:22:12,229 --> 03:22:07,920

solar array at the very bottom of your

2219

03:22:17,110 --> 03:22:14,790

as he monitors this

2220

03:22:19,190 --> 03:22:17,120

part of the procedure that will result

2221

03:22:21,269 --> 03:22:19,200

in the release of the array and then

2222

03:22:52,389 --> 03:22:21,279

pesquet will be maneuvered as he holds

2223

03:22:56,470 --> 03:22:54,710

coming over here tomorrow looking good

2224

03:23:04,790 --> 03:22:56,480

all right

2225

03:23:07,510 --> 03:23:06,309

this is a total of two minutes in the

2226

03:23:08,790 --> 03:23:07,520

journal cast i don't think i told you

2227

03:23:10,550 --> 03:23:08,800

that earlier so i'm not sure how far

2228

03:23:13,830 --> 03:23:10,560

into that we are

2229

03:23:16,389 --> 03:23:13,840

okay mark sounds good to know

2230

03:23:30,070 --> 03:23:16,399

getting close to our

2231

03:23:30,080 --> 03:23:34,400

30 seconds to hand over

2232

03:23:34,410 --> 03:23:55,910

[Music]

2233

03:24:21,990 --> 03:23:58,389

tomorrow we're setting up for a manual

2234

03:24:25,990 --> 03:24:24,309

we are in a handover period between

2235

03:24:28,550 --> 03:24:26,000

satellites on the tracking and data

2236

03:24:30,389 --> 03:24:28,560

relay satellite system we'll get our

2237

03:24:33,030 --> 03:24:30,399

downlink video and communications with

2238

03:24:34,550 --> 03:24:33,040

the crew back momentarily two hours

2239

03:24:35,990 --> 03:24:34,560

three minutes into the space walk

2240

03:24:37,349 --> 03:24:36,000

tomorrow pesquet

2241

03:24:41,110 --> 03:24:37,359

being maneuvered at the end of the

2242

03:24:43,670 --> 03:24:41,120

canadarm2 robotic arm down to the iss

2243

03:24:45,910 --> 03:24:43,680

rollout solar array the second of the

2244

03:24:47,670 --> 03:24:45,920

arrays being installed on the

2245

03:25:20,790 --> 03:24:47,680

international space station to augment

2246

03:25:24,469 --> 03:25:22,550

so now we are ready for that maneuver to

2247

03:25:27,990 --> 03:25:24,479

the gta published

2248

03:25:29,590 --> 03:25:28,000

okay mark um and you said 75 centimeters

2249

03:25:31,190 --> 03:25:29,600

in that sounds like a good published

2250

03:25:32,630 --> 03:25:31,200

position

2251

03:25:42,550 --> 03:25:32,640

gta

2252

03:25:42,560 --> 03:26:06,550

you started motion

2253

03:26:19,590 --> 03:26:09,030

35 years to go

2254

03:26:23,990 --> 03:26:22,070

and the mark you can stop motion right

2255

03:26:25,910 --> 03:26:24,000

here

2256

03:26:28,630 --> 03:26:25,920

okay megan stop the motion

2257

03:26:29,910 --> 03:26:28,640

it's a good position i'll call that gg

2258

03:26:34,469 --> 03:26:29,920

complete

2259

03:26:39,590 --> 03:26:35,990

breaks are on

2260

03:26:42,389 --> 03:26:39,600

happy birthday nice job youtube

2261

03:26:45,190 --> 03:26:42,399

ground copies breaks are on tomah attach

2262

03:26:49,990 --> 03:26:45,200

a rat to the scoop on the inboard i a

2263

03:26:50,000 --> 03:27:11,349

okay

2264

03:27:15,830 --> 03:27:13,349

we are prepping to release irosa from

2265

03:27:17,349 --> 03:27:15,840

the fse so to mod check your tools and

2266

03:27:22,630 --> 03:27:17,359

tethers are clear and your ingress eight

2267

03:27:27,110 --> 03:27:24,389

and feathers are cleared

2268

03:27:28,870 --> 03:27:27,120

message is stowed by handling position

2269

03:27:31,670 --> 03:27:28,880

the cooling is good

2270

03:27:33,670 --> 03:27:31,680

our advisor is up right now up

2271

03:27:36,229 --> 03:27:33,680

down

2272

03:27:38,469 --> 03:27:36,239

now we're getting into the

2273

03:27:40,710 --> 03:27:38,479

that's right

2274

03:27:45,910 --> 03:27:40,720

copy we are going in tonight we have two

2275

03:27:48,389 --> 03:27:46,790

okay

2276

03:27:51,030 --> 03:27:48,399

and now i've controlled the irosa from

2277

03:27:52,550 --> 03:27:51,040

my previous copy and you might have said

2278

03:28:00,330 --> 03:27:52,560

it but to confirm your heels are secure

2279

03:28:00,340 --> 03:28:05,030

[Music]

2280

03:28:09,349 --> 03:28:06,870

okay copy so now you're going to work

2281

03:28:11,910 --> 03:28:09,359

together to release irosa tomorrow when

2282

03:28:14,870 --> 03:28:11,920

you are ready you can give shane a go to

2283

03:28:17,190 --> 03:28:14,880

release the final fse bolt charlie 11.

2284

03:28:18,150 --> 03:28:17,200

i'll have settings for that in a moment

2285

03:28:21,110 --> 03:28:18,160

shane

2286

03:28:23,750 --> 03:28:21,120

but a caution prior to releasing irosa

2287

03:28:26,309 --> 03:28:23,760

ensure that the fse is not moving

2288

03:28:28,630 --> 03:28:26,319

and tomah you will keep irosa pulled

2289

03:28:31,030 --> 03:28:28,640

toward you to keep it engaged on the pin

2290

03:28:32,630 --> 03:28:31,040

slot interface on the fse until you are

2291

03:28:35,030 --> 03:28:32,640

ready to release it

2292

03:28:37,750 --> 03:28:35,040

following that final bolt release shane

2293

03:28:40,309 --> 03:28:37,760

you will be installing the square scoop

2294

03:28:44,229 --> 03:28:40,319

45 degrees toward tomah and then

2295

03:28:51,370 --> 03:28:44,239

translating to clear irosa from the

2296

03:28:51,380 --> 03:28:59,750

[Music]

2297

03:29:06,150 --> 03:29:01,170

um

2298

03:29:09,349 --> 03:29:07,990

i'm looking at two bolts here and just

2299

03:29:11,910 --> 03:29:09,359

want to make sure i get on the correct

2300

03:29:16,229 --> 03:29:14,229

copy you're looking for charlie 11 it

2301
03:29:18,630 --> 03:29:16,239
should be labeled it's the larger bolts

2302
03:29:25,349 --> 03:29:18,640
there let me know if you see it your

2303
03:29:28,710 --> 03:29:27,110
i see the larger ball does not have

2304
03:29:31,429 --> 03:29:28,720
charlie 11 actually with the smaller one

2305
03:29:35,180 --> 03:29:31,439
guys that's what's going to compute

2306
03:29:35,190 --> 03:29:42,870
[Music]

2307
03:29:46,070 --> 03:29:45,110
shane kimbrough using the pistol grip

2308
03:29:46,830 --> 03:29:46,080
tool

2309
03:29:50,469 --> 03:29:46,840
to

2310
03:29:53,110 --> 03:29:50,479
release the last bolt holding the iss

2311
03:29:54,950 --> 03:29:53,120
rollout solar array in place on one of

2312
03:29:56,389 --> 03:29:54,960
those bolts as well

2313
03:30:08,790 --> 03:29:56,399

we're checking on additional words for

2314

03:30:13,110 --> 03:30:11,349

i'll be in bravo three counter two or

2315

03:30:38,500 --> 03:30:13,120

three

2316

03:30:38,510 --> 03:30:43,110

[Music]

2317

03:30:46,309 --> 03:30:44,070

cooling

2318

03:30:49,110 --> 03:30:46,319

this one be sure how many turns are you

2319

03:30:51,590 --> 03:30:49,120

looking for jimmy

2320

03:31:03,910 --> 03:30:51,600

24 to 26 turns the vote will spring out

2321

03:31:07,590 --> 03:31:06,070

and shane i can see in your helmet cam

2322

03:31:10,070 --> 03:31:07,600

that you are ready

2323

03:31:11,510 --> 03:31:10,080

shane stand down you are not on the

2324

03:31:13,830 --> 03:31:11,520

correct bolt

2325

03:31:16,150 --> 03:31:13,840

charlie 11 should be under

2326

03:31:17,670 --> 03:31:16,160

the guard for the irosa blanket so

2327

03:31:22,309 --> 03:31:17,680

further

2328

03:31:25,110 --> 03:31:23,910

you should be able to fall i'm not on

2329

03:31:27,910 --> 03:31:25,120

any boat

2330

03:31:49,269 --> 03:31:27,920

okay just making sure that to confirm

2331

03:31:56,780 --> 03:31:51,670

are you ready i'm ready to say

2332

03:32:03,490 --> 03:31:59,670

[Music]

2333

03:32:27,750 --> 03:32:03,500

yeah i struggled a little bit

2334

03:32:27,760 --> 03:32:48,150

ready

2335

03:32:48,160 --> 03:32:54,070

okay

2336

03:32:54,080 --> 03:33:08,070

uh

2337

03:33:08,080 --> 03:33:10,950

one

2338

03:33:24,560 --> 03:33:11,910

four

2339

03:33:37,269 --> 03:33:25,990

[Music]

2340

03:33:41,750 --> 03:33:40,150

copy 28 turns on charlie 11. the bolt

2341

03:33:47,510 --> 03:33:41,760

should be sprung out fully released you

2342

03:33:47,520 --> 03:34:11,750

about some work

2343

03:34:16,150 --> 03:34:13,590

shane you'll be installing the square

2344

03:34:18,710 --> 03:34:16,160

scoop on the roof

2345

03:34:20,389 --> 03:34:18,720

copy you can install the square scoop on

2346

03:34:32,400 --> 03:34:20,399

the root beam micro square near charlie

2347

03:34:53,750 --> 03:34:34,229

[Music]

2348

03:35:13,030 --> 03:34:55,830

it's locked i'm gonna take my rent off

2349

03:35:17,510 --> 03:35:16,070

yeah keep it installed jenny

2350

03:35:20,229 --> 03:35:17,520

poppy shane

2351
03:35:22,950 --> 03:35:20,239
translate to the venus outboard side of

2352
03:35:30,710 --> 03:35:22,960
the fse to assist with clearing our rosa

2353
03:35:34,790 --> 03:35:33,190
i'm going to reposition

2354
03:35:37,269 --> 03:35:34,800
copy

2355
03:35:52,480 --> 03:35:37,279
and that'll be to the other side of the

2356
03:35:52,490 --> 03:35:56,309
[Applause]

2357
03:36:01,590 --> 03:35:58,870
two hours 14 minutes into the space walk

2358
03:36:04,229 --> 03:36:01,600
pesky and kimbrough working to

2359
03:36:05,910 --> 03:36:04,239
release the irosa solar array from its

2360
03:36:16,950 --> 03:36:05,920
flight support equipment we're just

2361
03:36:20,469 --> 03:36:19,269
when you're ready to release irosa toma

2362
03:36:22,389 --> 03:36:20,479
you can slide

2363
03:36:24,870 --> 03:36:22,399

a rosa's venus to release it from the

2364

03:36:27,349 --> 03:36:24,880

pin slot interface and shane you'll be

2365

03:36:29,990 --> 03:36:27,359

giving ssrms a go for the lower arosa

2366

03:36:46,229 --> 03:36:30,000

back off again we want your eyes on the

2367

03:36:51,349 --> 03:36:48,950

beast

2368

03:36:52,790 --> 03:36:51,359

catching up on my end

2369

03:36:54,710 --> 03:36:52,800

yep

2370

03:36:55,429 --> 03:36:54,720

my control

2371

03:37:04,480 --> 03:36:55,439

is

2372

03:37:12,469 --> 03:37:10,790

[Music]

2373

03:37:14,070 --> 03:37:12,479

copy we're taking the brakes off and

2374

03:37:16,550 --> 03:37:14,080

we're going to move a reference to

2375

03:37:27,429 --> 03:37:16,560

tama's body axis

2376

03:37:27,439 --> 03:37:37,910

start that motion

2377

03:37:43,030 --> 03:37:40,150

i feel good motion

2378

03:37:49,670 --> 03:37:45,269

you tell me how to uh

2379

03:37:49,680 --> 03:37:54,790

yeah i'm seeing good motion though

2380

03:37:54,800 --> 03:38:11,030

hey right there tomorrow

2381

03:38:58,389 --> 03:38:29,830

great

2382

03:38:58,399 --> 03:39:21,189

it's settling

2383

03:39:45,750 --> 03:39:23,670

is good

2384

03:40:16,229 --> 03:39:47,269

all right you can pitch it up a little

2385

03:40:16,239 --> 03:40:19,510

stop

2386

03:40:24,309 --> 03:40:21,750

how hard you pitch i don't know maybe

2387

03:40:24,319 --> 03:40:29,349

oh no i don't see anything okay

2388

03:40:29,359 --> 03:40:44,469

try to pitch it from here a little bit

2389

03:40:49,590 --> 03:40:46,229

almost two hours 20 minutes into the

2390

03:40:51,750 --> 03:40:49,600

spacewalk the second irosa rollout solar

2391

03:40:54,150 --> 03:40:51,760

array now being extracted from its

2392

03:40:56,070 --> 03:40:54,160

flight support equipment by tomah

2393

03:40:58,070 --> 03:40:56,080

pesquet at the end of the canadarm2

2394

03:41:00,550 --> 03:40:58,080

robotic arm

2395

03:41:02,950 --> 03:41:00,560

as visual assistants is being lended by

2396

03:41:05,189 --> 03:41:02,960

shane kimbrough who will move over to

2397

03:41:07,510 --> 03:41:05,199

the p6 worksite

2398

03:41:08,550 --> 03:41:07,520

at the base of the far left side of the

2399

03:41:10,469 --> 03:41:08,560

station

2400

03:41:13,429 --> 03:41:10,479

where this array will be installed on

2401

03:41:15,269 --> 03:41:13,439

the opposite side from which the 2b

2402

03:41:18,870 --> 03:41:15,279

solar array was installed this past

2403

03:41:18,880 --> 03:41:22,870

started that motion

2404

03:41:22,880 --> 03:41:35,110

goodbye

2405

03:41:38,150 --> 03:41:37,030

looks like it's settling again

2406

03:41:40,950 --> 03:41:38,160

yeah

2407

03:41:43,590 --> 03:41:40,960

stop motion mark emotion

2408

03:41:45,269 --> 03:41:43,600

i think it come down my left like on the

2409

03:41:48,389 --> 03:41:45,279

inboard side

2410

03:41:54,870 --> 03:41:48,399

it feels like they have some friction

2411

03:41:59,990 --> 03:41:56,710

oh it feels like it's

2412

03:42:04,870 --> 03:42:01,590

if you could

2413

03:42:08,389 --> 03:42:04,880

can you actually live and look maybe

2414

03:42:09,990 --> 03:42:08,399

look down from the arena side of the ssc

2415

03:42:11,670 --> 03:42:10,000

yeah jenny you get with me going over to

2416

03:42:13,670 --> 03:42:11,680

the other side yeah we are we're

2417

03:42:15,189 --> 03:42:13,680

following along shane and we agree you

2418

03:43:05,349 --> 03:42:15,199

should go to the

2419

03:43:05,359 --> 03:43:23,530

you know

2420

03:43:35,990 --> 03:43:31,740

[Music]

2421

03:43:40,790 --> 03:43:39,030

i see what it is now but it is

2422

03:43:42,710 --> 03:43:40,800

so it's hitting the uh you know where we

2423

03:43:46,070 --> 03:43:42,720

put that footprint in whatever that bolt

2424

03:43:49,910 --> 03:43:46,080

was uh-huh and we got to that bolt and

2425

03:43:52,070 --> 03:43:49,920

now it's just being stuck there so okay

2426

03:43:55,189 --> 03:43:52,080

you all right so you write a little bit

2427

03:43:58,630 --> 03:43:56,870

shane you can deconflict it from that

2428

03:43:59,670 --> 03:43:58,640

bolt you can touch the

2429

03:44:02,550 --> 03:43:59,680

you can

2430

03:44:04,150 --> 03:44:02,560

touch the bumper that your left hand is

2431

03:44:10,229 --> 03:44:04,160

close to the white bumper that protects

2432

03:44:10,239 --> 03:44:29,110

i don't think it clears it

2433

03:44:32,150 --> 03:44:30,710

i don't uh

2434

03:44:34,150 --> 03:44:32,160

anything on the other side can you push

2435

03:44:35,670 --> 03:44:34,160

it to your head to my head now it's

2436

03:44:37,590 --> 03:44:35,680

sitting on the other side what i can do

2437

03:44:39,750 --> 03:44:37,600

though is roll to my left

2438

03:44:41,110 --> 03:44:39,760

it'll roll it towards you

2439

03:44:43,349 --> 03:44:41,120

i don't know if that helps because i

2440

03:44:45,349 --> 03:44:43,359

don't have eyes on the problem but um

2441

03:44:46,469 --> 03:44:45,359

yeah i think let's try that and see i'll

2442

03:44:49,189 --> 03:44:46,479

roll through

2443

03:44:52,229 --> 03:44:49,199

towards you a little bit out there that

2444

03:44:55,670 --> 03:44:53,110

and

2445

03:44:59,189 --> 03:44:55,680

i'll definitely help

2446

03:45:01,349 --> 03:44:59,199

mark and megan are you guys ready

2447

03:45:04,550 --> 03:45:01,359

uh we're ready what direction

2448

03:45:06,070 --> 03:45:04,560

um the standard direction of going um

2449

03:45:09,510 --> 03:45:06,080

whatever

2450

03:45:12,469 --> 03:45:09,520

before that way

2451
03:45:14,630 --> 03:45:12,479
okay copy we got a couple uh we got a

2452
03:45:16,150 --> 03:45:14,640
couple more meters to go

2453
03:45:17,830 --> 03:45:16,160
starting that motion hey mark you're

2454
03:45:19,910 --> 03:45:17,840
gonna do like 20 centimeters and i'll

2455
03:45:21,830 --> 03:45:19,920
stop you forever okay we'll go 20

2456
03:45:29,910 --> 03:45:21,840
centimeters and check in

2457
03:45:29,920 --> 03:45:47,910
we start devotion

2458
03:45:47,920 --> 03:45:52,070
you can stop motion

2459
03:45:52,080 --> 03:45:58,070
that's not helping

2460
03:46:02,469 --> 03:46:00,070
we're following along we suggest you

2461
03:46:05,110 --> 03:46:02,479
might be able to move nader and

2462
03:46:10,469 --> 03:46:05,120
hopefully the bolt could clear the gap

2463
03:46:28,790 --> 03:46:13,349

okay

2464

03:46:28,800 --> 03:46:34,710

can you see the tower

2465

03:46:38,630 --> 03:46:36,710

i cannot see it

2466

03:46:42,229 --> 03:46:38,640

starting

2467

03:46:45,590 --> 03:46:43,910

yeah we're holds in place until you give

2468

03:46:51,269 --> 03:46:45,600

us a go that you've got good clearance

2469

03:46:54,790 --> 03:46:53,189

shane we want you

2470

03:46:57,750 --> 03:46:54,800

shane we're happy with the clearance to

2471

03:47:20,070 --> 03:46:57,760

the bolt so we want you by the tower to

2472

03:47:20,080 --> 03:47:56,710

30 seconds from handover

2473

03:48:01,670 --> 03:48:00,150

two hours 27 minutes into the space walk

2474

03:48:03,349 --> 03:48:01,680

tomorrow pesquet

2475

03:48:05,429 --> 03:48:03,359

carefully uh

2476

03:48:07,269 --> 03:48:05,439

removing the

2477

03:48:08,790 --> 03:48:07,279

irosa solar array from its flight

2478

03:48:11,189 --> 03:48:08,800

support equipment

2479

03:48:11,990 --> 03:48:11,199

very tight tolerances to get it out of

2480

03:48:14,550 --> 03:48:12,000

the

2481

03:48:15,510 --> 03:48:14,560

flight support equipment uh

2482

03:48:18,229 --> 03:48:15,520

area

2483

03:48:20,550 --> 03:48:18,239

uh under the uh watchful eye of shane

2484

03:48:22,710 --> 03:48:20,560

kimbrough who's alongside

2485

03:48:24,790 --> 03:48:22,720

we're in between satellites on our

2486

03:48:25,990 --> 03:48:24,800

tracking and data relay satellite system

2487

03:48:28,150 --> 03:48:26,000

will get a

2488

03:48:29,990 --> 03:48:28,160

downlink television and communications

2489

03:48:32,150 --> 03:48:30,000

capability back from the station just

2490

03:48:34,870 --> 03:48:32,160

momentarily

2491

03:48:36,469 --> 03:48:34,880

everything continuing to proceed fairly

2492

03:48:39,110 --> 03:48:36,479

close to the timeline

2493

03:48:40,389 --> 03:48:39,120

for pesquet and kimbrough spacewalk that

2494

03:48:44,150 --> 03:48:40,399

began at

2495

03:48:53,910 --> 03:48:44,160

6 52 a.m central time 7 52 a.m eastern

2496

03:48:59,590 --> 03:48:56,870

looking good over here

2497

03:49:01,110 --> 03:48:59,600

notion tomorrow you have it it's free

2498

03:49:05,429 --> 03:49:01,120

okay

2499

03:49:05,439 --> 03:49:10,389

power clearance is good

2500

03:49:10,399 --> 03:49:29,590

happy

2501
03:49:35,750 --> 03:49:31,670
are you clear of the stances on the left

2502
03:49:35,760 --> 03:49:47,830
required

2503
03:49:47,840 --> 03:50:08,550
it up

2504
03:50:08,560 --> 03:50:40,710
looking good power appliance is good

2505
03:50:43,910 --> 03:50:42,550
i see that you've cleared the tower and

2506
03:50:44,790 --> 03:50:43,920
the fse

2507
03:50:46,309 --> 03:50:44,800
copy

2508
03:50:48,790 --> 03:50:46,319
nice work

2509
03:51:16,070 --> 03:50:48,800
thanks for all the help

2510
03:51:21,269 --> 03:51:18,870
tomah pesquet now in firm control of the

2511
03:51:24,070 --> 03:51:21,279
irosa solar array it is now out of its

2512
03:51:26,389 --> 03:51:24,080
flight support equipment structure

2513
03:51:27,830 --> 03:51:26,399

shane kimbrough will move over to the p6

2514

03:51:30,469 --> 03:51:27,840

truss worksite

2515

03:51:31,990 --> 03:51:30,479

to receive a handoff of the array

2516

03:51:34,150 --> 03:51:32,000

from pesquet

2517

03:51:37,429 --> 03:51:34,160

once pesquet is maneuvered over to that

2518

03:51:40,309 --> 03:51:37,439

location by astronaut megan mcarthur

2519

03:51:42,469 --> 03:51:40,319

operating the canadarm2 robotic arm from

2520

03:52:13,990 --> 03:51:42,479

her robotic workstation inside the

2521

03:52:14,000 --> 03:52:51,110

15 more centimeters

2522

03:52:55,990 --> 03:52:52,950

okay motion and staff are set up for a

2523

03:52:56,000 --> 03:52:58,870

motion

2524

03:53:07,990 --> 03:53:02,790

shane you can perform a socket swap to

2525

03:55:04,630 --> 03:53:08,000

the 5 8 2 inch socket on your pt

2526

03:55:08,150 --> 03:55:06,309

now we're one switch throw away from a

2527

03:55:10,870 --> 03:55:08,160

joint outcast it's the first of three

2528

03:55:13,830 --> 03:55:10,880

this one will take two minutes in vern

2529

03:55:15,830 --> 03:55:13,840

copy mode deliberate

2530

03:56:28,070 --> 03:55:15,840

i am ready for motion starting the

2531

03:56:32,550 --> 03:56:29,910

let me get full test on the 12 inch on

2532

03:56:52,150 --> 03:56:32,560

the socket caddy

2533

03:57:10,950 --> 03:56:53,510

tomorrow we're set up for the second or

2534

03:57:10,960 --> 03:57:25,990

copy

2535

03:57:29,910 --> 03:57:27,990

shane after you stow your pgt you'll be

2536

03:57:44,630 --> 03:57:29,920

retrieving tomah's green hook from the

2537

03:57:59,110 --> 03:57:46,240

two minutes

2538

03:57:59,120 --> 03:59:04,870

all right let's open the error motion

2539

03:59:08,710 --> 03:59:07,030

hey mark uh i don't like visual

2540

03:59:10,790 --> 03:59:08,720

references anymore so if you can give

2541

03:59:20,920 --> 03:59:10,800

your heads up when remote

2542

03:59:24,520 --> 03:59:21,970

[Music]

2543

03:59:30,870 --> 03:59:24,530

[Applause]

2544

03:59:35,349 --> 03:59:33,429

and tomah just for your awareness some

2545

03:59:37,990 --> 03:59:35,359

of these maneuvers will bring you close

2546

03:59:39,910 --> 03:59:38,000

to the 2a solar array

2547

03:59:41,349 --> 03:59:39,920

it'll be on your left side we understand

2548

03:59:43,030 --> 03:59:41,359

you're in the dark right now but if you

2549

03:59:45,030 --> 03:59:43,040

do see it we don't want it to surprise

2550

03:59:47,349 --> 03:59:45,040

you we have good clearance from the

2551
03:59:51,590 --> 03:59:47,359
ground and so do m1 and m2 from their

2552
04:00:09,429 --> 03:59:54,309
thanks for your help i appreciate and

2553
04:00:12,870 --> 04:00:11,269
shane when you pick up tomah's green

2554
04:00:15,030 --> 04:00:12,880
hook make sure you attach it to your

2555
04:00:19,910 --> 04:00:15,040
waist tether or d-ring extender or green

2556
04:00:24,469 --> 04:00:23,030
okay copy that that's about us

2557
04:00:26,309 --> 04:00:24,479
that motion's complete we're setting up

2558
04:00:28,950 --> 04:00:26,319
setting up the third general test

2559
04:00:31,030 --> 04:00:28,960
yeah thanks mark your call was great

2560
04:00:51,130 --> 04:00:31,040
i could never control the i goes down

2561
04:00:51,140 --> 04:00:57,030
[Music]

2562
04:00:57,040 --> 04:01:08,309
unlocked

2563
04:01:12,550 --> 04:01:11,349

copy translate to p6 for a green hook

2564

04:01:13,990 --> 04:01:12,560

location

2565

04:01:25,590 --> 04:01:14,000

check gauntlets in place prior to

2566

04:01:29,670 --> 04:01:27,030

tomorrow we are

2567

04:01:31,269 --> 04:01:29,680

one switch from a third of three journal

2568

04:01:33,830 --> 04:01:31,279

casters this one's going to be one

2569

04:01:41,910 --> 04:01:33,840

minute long inverse

2570

04:01:41,920 --> 04:02:00,790

we copy your check chain

2571

04:02:00,800 --> 04:02:29,590

um

2572

04:02:29,600 --> 04:02:41,510

we're ramping out

2573

04:02:44,150 --> 04:02:42,870

all right you're gonna see the floor

2574

04:02:47,830 --> 04:02:44,160

array

2575

04:02:51,750 --> 04:02:47,840

towards my feet lift it forward

2576
04:02:51,760 --> 04:03:11,349
let's work

2577
04:03:15,670 --> 04:03:12,550
while we're setting up our manual

2578
04:03:17,910 --> 04:03:15,680
maneuver it'll be a

2579
04:03:20,630 --> 04:03:17,920
gca

2580
04:03:26,110 --> 04:03:22,469
shane you're looking for

2581
04:03:42,150 --> 04:03:26,120
handrail 5311 for tomas green hook and

2582
04:03:42,160 --> 04:04:29,110
headed into insulation in one minute

2583
04:04:37,830 --> 04:04:31,450
i see you coming

2584
04:04:45,030 --> 04:04:39,830
don't worry

2585
04:04:45,040 --> 04:04:53,910
copy

2586
04:04:53,920 --> 04:04:59,429
okay tomas is on side three one

2587
04:04:59,439 --> 04:05:06,870
good

2588
04:05:23,590 --> 04:05:08,389

we're standing by for your go for the

2589

04:05:28,229 --> 04:05:26,550

copy check both reels unlocked

2590

04:05:29,910 --> 04:05:28,239

and station on one big picture we're

2591

04:05:31,590 --> 04:05:29,920

just uh waiting for shane to get in

2592

04:05:37,110 --> 04:05:31,600

position and get a little better

2593

04:05:40,469 --> 04:05:39,030

and also copy this is going to be a gca

2594

04:05:45,030 --> 04:05:40,479

so we got to wait for those calls as

2595

04:05:49,510 --> 04:05:46,630

copyright's unlocked

2596

04:05:52,070 --> 04:05:49,520

you're translating to handrail 5344

2597

04:05:59,030 --> 04:05:52,080

outboard of your apfr we'll put in a

2598

04:06:03,189 --> 04:06:00,710

this is mission control houston two

2599

04:06:05,670 --> 04:06:03,199

hours 45 minutes into the spacewalk

2600

04:06:07,910 --> 04:06:05,680

tomorrow pesquet has been maneuvered

2601
04:06:11,030 --> 04:06:07,920
to the p6 work site

2602
04:06:12,389 --> 04:06:11,040
near the base of the mast canister

2603
04:06:14,870 --> 04:06:12,399
for the large

2604
04:06:17,269 --> 04:06:14,880
legacy or

2605
04:06:20,070 --> 04:06:17,279
heritage solar arrays that you see in

2606
04:06:23,349 --> 04:06:20,080
the field of view those arrays delivered

2607
04:06:25,429 --> 04:06:23,359
years ago on the sts-97 mission to the

2608
04:06:26,469 --> 04:06:25,439
international space station the first

2609
04:06:28,710 --> 04:06:26,479
pair

2610
04:06:31,189 --> 04:06:28,720
of original solar arrays for station

2611
04:06:36,150 --> 04:06:34,070
shane kimbrough is about

2612
04:06:38,309 --> 04:06:36,160
to move into a portable foot restraint

2613
04:06:42,630 --> 04:06:38,319

at the work site to take a handoff of

2614

04:06:43,429 --> 04:06:42,640

the irosa or iss rollout solar array

2615

04:06:45,910 --> 04:06:43,439

from

2616

04:06:47,670 --> 04:06:45,920

pesquet who transported that array out

2617

04:06:48,710 --> 04:06:47,680

of the flight support equipment on the

2618

04:06:50,630 --> 04:06:48,720

truss

2619

04:06:52,550 --> 04:06:50,640

and was maneuvered by astronaut megan

2620

04:06:55,349 --> 04:06:52,560

mcarthur at the end of the canadarm2

2621

04:06:57,670 --> 04:06:55,359

robotic arm to join kimbrough at the

2622

04:06:59,830 --> 04:06:57,680

work site to which this array will be

2623

04:07:02,309 --> 04:06:59,840

installed on a mounting bracket

2624

04:07:03,429 --> 04:07:02,319

for its unfolding and unfurling

2625

04:07:04,630 --> 04:07:03,439

joining

2626
04:07:06,550 --> 04:07:04,640
another

2627
04:07:08,790 --> 04:07:06,560
rollout solar array that was installed

2628
04:07:12,150 --> 04:07:08,800
for the 2b power channel of the station

2629
04:07:23,510 --> 04:07:12,160
back on sunday this array in play today

2630
04:07:23,520 --> 04:07:27,750
jenny what's the handrail for the

2631
04:07:27,760 --> 04:09:10,870
five three four six

2632
04:09:15,349 --> 04:09:13,510
all right third leaders in on fire three

2633
04:09:26,229 --> 04:09:15,359
four

2634
04:09:33,269 --> 04:09:30,389
bro back on black people

2635
04:09:33,279 --> 04:09:49,110
the uh 12 o'clock fox fox

2636
04:09:53,030 --> 04:09:51,189
good settings you can ingress the apfr

2637
04:09:56,710 --> 04:09:53,040
and then we'll perform your checks prior

2638
04:10:18,820 --> 04:09:59,420

i gotta set seven

2639

04:10:40,870 --> 04:10:20,469

[Music]

2640

04:10:45,510 --> 04:10:42,469

shane kimbrough looking down at the

2641

04:10:47,590 --> 04:10:45,520

earth from 255 miles up

2642

04:10:49,910 --> 04:10:47,600

as the international space station flies

2643

04:11:02,070 --> 04:10:49,920

from south west to northeast entering an

2644

04:11:11,429 --> 04:11:04,229

right it's all set up jenny and all

2645

04:11:15,110 --> 04:11:13,189

kim bro about

2646

04:11:18,790 --> 04:11:15,120

to position his feet

2647

04:11:34,469 --> 04:11:21,830

to accept a handoff of the rollout solar

2648

04:11:40,309 --> 04:11:37,910

as we take questions on hashtag ask nasa

2649

04:11:42,550 --> 04:11:40,319

a twitter user asks

2650

04:11:44,710 --> 04:11:42,560

does tomas simply put his feet in the

2651
04:11:46,389 --> 04:11:44,720
foot restraint and they are secure or

2652
04:11:47,189 --> 04:11:46,399
does he use something else to secure

2653
04:11:49,110 --> 04:11:47,199
them

2654
04:11:51,510 --> 04:11:49,120
now he simply slips his feet into the

2655
04:11:53,750 --> 04:11:51,520
foot restraint he is tethered to other

2656
04:11:56,149 --> 04:11:53,760
structures at the same time to make sure

2657
04:11:59,030 --> 04:11:56,159
he is securely fastened

2658
04:12:00,790 --> 04:11:59,040
but it's simply putting feet in a foot

2659
04:12:02,870 --> 04:12:00,800
restraint

2660
04:12:05,110 --> 04:12:02,880
slipping those feet in to the foot

2661
04:12:06,550 --> 04:12:05,120
restraint which is attached to the

2662
04:12:09,670 --> 04:12:06,560
various structures

2663
04:12:15,349 --> 04:12:13,590

another twitter user wayne asks is the

2664

04:12:17,990 --> 04:12:15,359

rollout solar array that was deployed

2665

04:12:19,750 --> 04:12:18,000

last week actually supplying power

2666

04:12:22,229 --> 04:12:19,760

to the international space station the

2667

04:12:24,710 --> 04:12:22,239

answer is yes it is up and running in

2668

04:12:27,510 --> 04:12:24,720

perfect fashion supplying about 20

2669

04:13:04,309 --> 04:12:27,520

kilowatts of power as will all the other

2670

04:13:04,319 --> 04:13:07,750

all right tomorrow thank you man

2671

04:13:14,950 --> 04:13:12,469

all right doing all right i'm doing good

2672

04:13:16,309 --> 04:13:14,960

shane now that you're in the apfr check

2673

04:13:22,149 --> 04:13:16,319

your tools and tethers are clear and

2674

04:13:27,269 --> 04:13:23,830

the tools and tires are clear i just

2675

04:13:29,830 --> 04:13:27,279

cleared my safety trailer a little bit

2676

04:13:31,590 --> 04:13:29,840

s8 is still

2677

04:13:34,309 --> 04:13:31,600

check yours

2678

04:13:38,950 --> 04:13:34,319

visor glove heaters cooling are set your

2679

04:13:38,960 --> 04:13:44,229

advisor done

2680

04:13:44,239 --> 04:13:47,349

are off

2681

04:13:56,070 --> 04:13:49,030

they're all standing i'm sorry heels are

2682

04:13:59,510 --> 04:13:58,070

spacewalk communicator jenny seidi

2683

04:14:01,429 --> 04:13:59,520

providing shane kimbrough with

2684

04:14:02,710 --> 04:14:01,439

instructions as he moves into a portable

2685

04:14:05,590 --> 04:14:02,720

foot restraint

2686

04:14:08,070 --> 04:14:05,600

to accept a handoff of the iss rollout

2687

04:14:09,590 --> 04:14:08,080

solar array from tomah pesquet the

2688

04:14:12,149 --> 04:14:09,600

international space station about to

2689

04:14:16,070 --> 04:14:12,159

cross the west coast of canada

2690

04:14:21,030 --> 04:14:19,269

mark and megan i'm ready for the gca

2691

04:14:24,469 --> 04:14:21,040

it's shane great that gca will be

2692

04:14:27,590 --> 04:14:24,479

relative to tomas body frame will be two

2693

04:14:29,510 --> 04:14:27,600

meters body in how does that sound

2694

04:14:39,670 --> 04:14:29,520

good i'm ready

2695

04:14:39,680 --> 04:14:49,510

starting

2696

04:14:54,550 --> 04:14:51,510

that's motion good motion happy good

2697

04:14:55,510 --> 04:14:54,560

motion and a good view of the second of

2698

04:14:56,469 --> 04:14:55,520

the

2699

04:14:58,710 --> 04:14:56,479

six

2700

04:15:01,429 --> 04:14:58,720

roll out solar rays to be installed on

2701

04:15:03,990 --> 04:15:01,439

the international space station

2702

04:15:05,670 --> 04:15:04,000

currently being held by tomah pesquet

2703

04:15:27,670 --> 04:15:05,680

about to hand them off to shane

2704

04:15:32,790 --> 04:15:30,229

here in mission control uh

2705

04:15:35,670 --> 04:15:32,800

the space walk being uh supervised by

2706

04:15:37,830 --> 04:15:35,680

flight director pooja gesrani

2707

04:15:41,349 --> 04:15:37,840

on the right of your screen

2708

04:15:43,910 --> 04:15:41,359

seated in the white jacket is spacewalk

2709

04:15:46,950 --> 04:15:43,920

communicator jenny seidi canadian space

2710

04:16:38,469 --> 04:15:46,960

agency astronaut and to her right is

2711

04:17:07,429 --> 04:16:40,550

i'm here to go

2712

04:17:07,439 --> 04:17:29,110

continues a little bit towards you

2713

04:17:29,120 --> 04:17:55,670

i have zero centimeters to go

2714

04:17:55,680 --> 04:18:16,149

25 centimeters

2715

04:18:16,159 --> 04:18:26,469

centimeters

2716

04:18:26,479 --> 04:18:43,990

five

2717

04:18:47,030 --> 04:18:45,269

okay shane that's published how does

2718

04:18:48,630 --> 04:18:47,040

that look that looks great you can stop

2719

04:18:53,429 --> 04:18:48,640

motion you see it

2720

04:18:58,710 --> 04:18:57,110

makes her on go for i roast the handoff

2721

04:19:00,630 --> 04:18:58,720

let me get a red on it

2722

04:19:02,630 --> 04:19:00,640

all right come on i can only reach one

2723

04:19:06,070 --> 04:19:02,640

handle from this location so we'll work

2724

04:19:09,429 --> 04:19:08,229

i can be oriented as soon as as long as

2725

04:19:12,070 --> 04:19:09,439

you let me know

2726

04:19:14,870 --> 04:19:12,080

that you can put our hand on it

2727

04:19:17,429 --> 04:19:14,880

can i have a red on it now okay

2728

04:19:18,710 --> 04:19:17,439

i feel you're taking control oh i have

2729

04:19:21,429 --> 04:19:18,720

control yes

2730

04:19:23,269 --> 04:19:21,439

all right for the second hand now

2731

04:19:25,110 --> 04:19:23,279

um

2732

04:19:40,389 --> 04:19:25,120

roll let's see left

2733

04:19:47,670 --> 04:19:42,550

let it settle

2734

04:19:51,030 --> 04:19:48,950

you can let go for a second let me

2735

04:19:52,550 --> 04:19:51,040

reorient it a little bit okay so i'm

2736

04:20:07,269 --> 04:19:52,560

letting go on the hand let's see i'm

2737

04:20:07,279 --> 04:20:20,149

i have control okay you have control

2738

04:20:20,159 --> 04:20:25,110

because i have a big moment on here

2739

04:20:26,810 --> 04:20:26,469

and move it

2740

04:20:28,790 --> 04:20:26,820

okay

2741

04:20:30,550 --> 04:20:28,800

[Applause]

2742

04:20:32,149 --> 04:20:30,560

all right my wrist is you have the left

2743

04:20:34,790 --> 04:20:32,159

on this right side

2744

04:20:36,469 --> 04:20:34,800

okay alright is released

2745

04:20:39,830 --> 04:20:36,479

i have control

2746

04:20:42,870 --> 04:20:39,840

and it is nice and stable

2747

04:20:47,030 --> 04:20:42,880

you're pitching down a bit

2748

04:20:51,910 --> 04:20:49,830

ground copy's all

2749

04:20:53,990 --> 04:20:51,920

with a good handoff when you're ready

2750

04:20:59,429 --> 04:20:54,000

tomorrow you can give ssrms a go to

2751
04:21:10,550 --> 04:21:02,950
you'll feel pitching downstream right

2752
04:21:15,429 --> 04:21:13,750
you're pitching down right you're aware

2753
04:21:17,670 --> 04:21:15,439
i'll try to catch up

2754
04:21:19,429 --> 04:21:17,680
back there i just i'll stop it's

2755
04:21:26,630 --> 04:21:19,439
pitching down as soon as i let go of my

2756
04:21:33,110 --> 04:21:29,349
[Music]

2757
04:21:38,790 --> 04:21:36,070
it seems like a good position right now

2758
04:21:52,340 --> 04:21:38,800
yeah but it's as soon as i let go it

2759
04:22:12,710 --> 04:21:57,900
[Music]

2760
04:22:16,870 --> 04:22:15,030
relative to me

2761
04:22:20,389 --> 04:22:16,880
i think it's very slight on the end but

2762
04:22:23,110 --> 04:22:20,399
it's significant on my end like compared

2763
04:22:25,030 --> 04:22:23,120

to when i let go it travels by one meter

2764

04:22:27,110 --> 04:22:25,040

already

2765

04:22:28,870 --> 04:22:27,120

but if you have a structure in here at

2766

04:22:31,670 --> 04:22:28,880

your feet or something

2767

04:22:38,070 --> 04:22:31,680

good idea okay so you have a

2768

04:22:44,830 --> 04:22:39,830

and

2769

04:22:47,830 --> 04:22:44,840

backup

2770

04:22:54,870 --> 04:22:47,840

position to go for the post handoff back

2771

04:22:54,880 --> 04:23:01,189

the congruence work

2772

04:23:03,750 --> 04:23:02,469

so why can you give us the tethers and

2773

04:23:06,710 --> 04:23:03,760

tools check

2774

04:23:10,229 --> 04:23:06,720

so i've uh my feathers are cleared from

2775

04:23:13,990 --> 04:23:10,239

the arosa my tools are nicely tucked in

2776
04:23:16,469 --> 04:23:14,000
i am ready for motion everything's clear

2777
04:23:21,510 --> 04:23:16,479
we're starting that back off maneuver

2778
04:23:42,309 --> 04:23:24,149
that motion is started

2779
04:23:42,319 --> 04:23:47,189
i see good motion

2780
04:23:47,199 --> 04:23:59,990
happy good motion

2781
04:24:04,950 --> 04:24:02,389
shane kimbrough in firm uh control of

2782
04:24:08,149 --> 04:24:04,960
the irosa solar array

2783
04:24:09,110 --> 04:24:08,159
toma pesquet being backed away

2784
04:24:10,950 --> 04:24:09,120
from

2785
04:24:14,309 --> 04:24:10,960
that location

2786
04:24:17,110 --> 04:24:14,319
he will get out of the foot restraint

2787
04:24:20,309 --> 04:24:17,120
and then join kimbrough back at the p6

2788
04:24:23,670 --> 04:24:20,319

truss worksite to begin the process of

2789

04:24:25,990 --> 04:24:23,680

mounting the array onto the mod kit or

2790

04:24:28,229 --> 04:24:26,000

mounting bracket that's at the base of

2791

04:25:25,830 --> 04:24:28,239

the p6 solar arrays where the integrated

2792

04:25:31,030 --> 04:25:27,110

tomorrow we're setting up for the first

2793

04:26:08,229 --> 04:25:34,389

sounds good

2794

04:26:11,750 --> 04:26:09,670

this is the first of two journal cases

2795

04:26:13,990 --> 04:26:11,760

where one switch throw away it'll be in

2796

04:26:27,429 --> 04:26:14,000

course 2.5 minutes

2797

04:26:27,439 --> 04:26:37,670

sorry motion

2798

04:26:37,680 --> 04:26:42,070

we haven't started that motion yet

2799

04:26:42,080 --> 04:26:45,910

now we're starting motion all right

2800

04:26:45,920 --> 04:26:50,550

good motion

2801
04:26:55,830 --> 04:26:52,389
station houston space ground for

2802
04:26:58,630 --> 04:26:55,840
everybody big picture on what's next so

2803
04:27:00,149 --> 04:26:58,640
we're currently at eva pet of just over

2804
04:27:03,030 --> 04:27:00,159
three hours

2805
04:27:04,309 --> 04:27:03,040
our working eco start is in about 37

2806
04:27:05,349 --> 04:27:04,319
minutes

2807
04:27:08,630 --> 04:27:05,359
we see

2808
04:27:10,710 --> 04:27:08,640
the limiting consumables ev2 battery of

2809
04:27:13,189 --> 04:27:10,720
753

2810
04:27:16,149 --> 04:27:13,199
our plan when we get back to the egress

2811
04:27:18,229 --> 04:27:16,159
position is after the tether swap we're

2812
04:27:21,269 --> 04:27:18,239
going to actually pull the apfr off the

2813
04:27:23,030 --> 04:27:21,279

ssrms and stick it in a nearby width and

2814

04:27:24,790 --> 04:27:23,040

we believe that's going to save us time

2815

04:27:27,510 --> 04:27:24,800

uh on the other end and protect us in

2816

04:27:29,269 --> 04:27:27,520

case we get into that third eclipse of

2817

04:27:30,710 --> 04:27:29,279

the day so we're looking to save some

2818

04:27:32,229 --> 04:27:30,720

time on the other end

2819

04:27:35,590 --> 04:27:32,239

and uh that's the big picture for now

2820

04:28:16,710 --> 04:27:38,229

we want copies

2821

04:28:43,680 --> 04:28:18,630

tomorrow that first journal is complete

2822

04:28:50,710 --> 04:28:49,110

[Music]

2823

04:28:51,990 --> 04:28:50,720

engaged

2824

04:28:53,510 --> 04:28:52,000

it's really not from the mounting

2825

04:28:58,790 --> 04:28:53,520

brackets from

2826
04:29:03,830 --> 04:29:01,750
you can vote for later when we get to it

2827
04:29:06,870 --> 04:29:03,840
yep we copied them off and we were

2828
04:29:06,880 --> 04:30:12,630
okay

2829
04:30:15,910 --> 04:30:14,309
tomorrow i switched away from the second

2830
04:30:21,830 --> 04:30:15,920
of two journal casters this one's in

2831
04:30:34,309 --> 04:30:23,510
hey jury where's come on taking that

2832
04:30:37,750 --> 04:30:36,149
where are you going i don't know is

2833
04:30:39,750 --> 04:30:37,760
sitting there with nearby but there are

2834
04:30:41,189 --> 04:30:39,760
more words i guess

2835
04:30:43,990 --> 04:30:41,199
i have words on that if you want it now

2836
04:30:48,309 --> 04:30:46,229
i want to know

2837
04:30:50,309 --> 04:30:48,319
you'll be doing the tether swap and then

2838
04:30:53,269 --> 04:30:50,319

when you remove the apfr you'll be

2839

04:30:56,389 --> 04:30:53,279

stowing it in with 13 which will be on

2840

04:30:57,830 --> 04:30:56,399

your left it is on the a-frame there'll

2841

04:30:59,590 --> 04:30:57,840

also be a whiff right in front of you

2842

04:31:01,189 --> 04:30:59,600

but we do not want to use that with as

2843

04:31:04,950 --> 04:31:01,199

it's right in the way of the translation

2844

04:31:09,030 --> 04:31:06,950

reading my mind oh jenny okay that

2845

04:31:11,429 --> 04:31:09,040

sounds good i see the wii 13 on the

2846

04:31:13,750 --> 04:31:11,439

a-frame the left of

2847

04:31:14,630 --> 04:31:13,760

android 5-3-1-1 while i'll do the table

2848

04:31:16,389 --> 04:31:14,640

swap

2849

04:31:18,630 --> 04:31:16,399

and i was looking at the

2850

04:31:20,710 --> 04:31:18,640

one that would put the apfr in the way

2851
04:31:23,750 --> 04:31:20,720
so good call there

2852
04:31:26,309 --> 04:31:23,760
all good words and uh to confirm you

2853
04:31:27,349 --> 04:31:26,319
also will not need to change any of the

2854
04:31:30,309 --> 04:31:27,359
settings

2855
04:31:32,070 --> 04:31:30,319
on the apfr when you stow it in with 13

2856
04:31:49,510 --> 04:31:32,080
your clocking will be six i'll give that

2857
04:31:53,030 --> 04:31:51,510
and that second journal cast is complete

2858
04:31:54,710 --> 04:31:53,040
we're setting up a manual maneuver it'll

2859
04:32:02,229 --> 04:31:54,720
be a gca

2860
04:32:05,429 --> 04:32:03,750
published

2861
04:32:06,790 --> 04:32:05,439
we do we're still setting up but it will

2862
04:32:08,309 --> 04:32:06,800
be for

2863
04:32:14,870 --> 04:32:08,319

meters body in

2864

04:32:22,149 --> 04:32:17,590

prior to gca tama could you reset your

2865

04:32:22,159 --> 04:32:26,790

that's green right now

2866

04:32:26,800 --> 04:32:30,550

off

2867

04:32:49,750 --> 04:32:32,870

the corner of the green

2868

04:32:54,389 --> 04:32:51,349

tomorrow we're ready for the start gca

2869

04:32:58,950 --> 04:32:54,399

call all right from denmark

2870

04:33:12,869 --> 04:32:58,960

uh starting gca four meters body in

2871

04:34:05,109 --> 04:33:14,789

did you say good motion i did say good

2872

04:34:05,119 --> 04:34:47,590

three meters to go

2873

04:34:51,830 --> 04:34:50,070

so ma we've got uh two meters to go can

2874

04:35:02,789 --> 04:34:51,840

you see that trending fence i see that

2875

04:35:07,109 --> 04:35:04,629

this is mission control houston three

2876
04:35:09,109 --> 04:35:07,119
hours 13 minutes into the space walk a

2877
04:35:13,750 --> 04:35:09,119
good view

2878
04:35:15,670 --> 04:35:13,760
of the irosa solar array the iss roll-up

2879
04:35:18,470 --> 04:35:15,680
rollout solar array the second of the

2880
04:35:21,429 --> 04:35:18,480
two such arrays being installed on the

2881
04:35:24,150 --> 04:35:21,439
international space station

2882
04:35:26,709 --> 04:35:24,160
it's in the grasp of shane kimbrough we

2883
04:35:29,109 --> 04:35:26,719
had a view from his

2884
04:35:32,070 --> 04:35:29,119
hd camera for a moment now you're

2885
04:35:34,310 --> 04:35:32,080
looking at thomas pesquet being moved

2886
04:35:36,709 --> 04:35:34,320
back to a position where he will get out

2887
04:35:39,269 --> 04:35:36,719
of the foot restraint at the end of the

2888
04:35:41,510 --> 04:35:39,279

canadarm2 he transported the array over

2889

04:35:43,590 --> 04:35:41,520

to hand off to kimbrough

2890

04:35:45,670 --> 04:35:43,600

after the array was released from its

2891

04:35:47,109 --> 04:35:45,680

flight of support equipment on the truss

2892

04:35:49,510 --> 04:35:47,119

of the station

2893

04:35:51,590 --> 04:35:49,520

pesquet will join kimbrough back at the

2894

04:35:53,750 --> 04:35:51,600

p6 trust worksite

2895

04:35:55,590 --> 04:35:53,760

for the installation of that array on a

2896

04:35:56,949 --> 04:35:55,600

mounting bracket at the base of the mast

2897

04:35:59,590 --> 04:35:56,959

canister

2898

04:36:03,109 --> 04:36:01,830

houses the legacy or heritage the

2899

04:36:05,510 --> 04:36:03,119

original

2900

04:36:09,510 --> 04:36:05,520

solar rays for the p6 truss

2901
04:36:11,109 --> 04:36:09,520
to which this second rollout solar array

2902
04:36:12,470 --> 04:36:11,119
is being attached

2903
04:36:14,629 --> 04:36:12,480
to join

2904
04:36:18,390 --> 04:36:14,639
the first such array that was installed

2905
04:36:18,400 --> 04:36:22,230
five

2906
04:36:25,830 --> 04:36:23,830
and that's the position how is that

2907
04:36:28,869 --> 04:36:25,840
looking tomorrow it's looking fantastic

2908
04:36:42,949 --> 04:36:28,879
it is a great motion to stay complete

2909
04:36:47,029 --> 04:36:44,629
okay with your waste tether down on

2910
04:36:51,429 --> 04:36:47,039
handrail five three one one check the

2911
04:36:56,470 --> 04:36:53,670
my right restarter

2912
04:36:58,949 --> 04:36:56,480
down on five three one one

2913
04:37:01,029 --> 04:36:58,959

and the gate is closed and locked

2914

04:37:03,590 --> 04:37:01,039

copy you can egress the apfr and then

2915

04:37:21,019 --> 04:37:03,600

we'll gca if required in order to access

2916

04:37:28,629 --> 04:37:23,750

[Music]

2917

04:37:34,629 --> 04:37:30,869

yeah it'd be nice to have

2918

04:37:37,750 --> 04:37:34,639

kind of 50 centimeters station forward

2919

04:37:40,390 --> 04:37:37,760

possible or that's worse body up if we

2920

04:37:43,670 --> 04:37:40,400

were in internal coordinates before

2921

04:37:46,470 --> 04:37:43,680

yeah we copied uh five zero centimeters

2922

04:37:47,990 --> 04:37:46,480

uh apfr boot plate up or a body up if

2923

04:37:49,429 --> 04:37:48,000

you're in your old reference frame does

2924

04:37:51,109 --> 04:37:49,439

that make sense that sounds good let's

2925

04:37:52,629 --> 04:37:51,119

press record

2926

04:37:55,109 --> 04:37:52,639

okay are you clear for us to start that

2927

04:37:57,269 --> 04:37:55,119

gca yeah no i've actually have another

2928

04:37:59,830 --> 04:37:57,279

hand on the

2929

04:38:00,629 --> 04:37:59,840

finger stay to keep it away from me

2930

04:38:02,390 --> 04:38:00,639

no

2931

04:38:03,910 --> 04:38:02,400

i can't go for a gta

2932

04:38:05,429 --> 04:38:03,920

okay we're going to wrap this in slowly

2933

04:38:07,109 --> 04:38:05,439

starting with motion

2934

04:38:19,349 --> 04:38:07,119

and that's the start gca

2935

04:38:23,910 --> 04:38:21,269

with megan macarthur at the controls of

2936

04:38:27,429 --> 04:38:23,920

the canadarm2 robotic arm mark bandage

2937

04:38:29,189 --> 04:38:27,439

providing visual cues alongside of her

2938

04:38:30,869 --> 04:38:29,199

in the

2939

04:38:32,789 --> 04:38:30,879

international space station at the

2940

04:38:35,349 --> 04:38:32,799

robotics workstation

2941

04:38:37,429 --> 04:38:35,359

the robotic arm being backed away from

2942

04:38:38,949 --> 04:38:37,439

tomah pesquet now that he's out of the

2943

04:38:41,189 --> 04:38:38,959

foot restraint

2944

04:38:43,830 --> 04:38:41,199

he soon will be joining shane kimbrough

2945

04:38:45,109 --> 04:38:43,840

back at the p6 worksite uh

2946

04:38:48,709 --> 04:38:45,119

kim bro

2947

04:38:51,349 --> 04:38:48,719

with a firm grasp on the iss solar array

2948

04:38:55,109 --> 04:38:51,359

the rollout solar array the second

2949

04:38:57,670 --> 04:38:55,119

of six such roll out solar rays

2950

04:38:59,349 --> 04:38:57,680

good view of those arrays right now

2951

04:39:02,789 --> 04:38:59,359

that will be installed on a mounting

2952

04:39:06,390 --> 04:39:02,799

bracket unfolded and unfurled

2953

04:39:09,429 --> 04:39:06,400

for the 4b power channel on the p6 truss

2954

04:39:10,789 --> 04:39:09,439

of the international space station

2955

04:39:12,709 --> 04:39:10,799

for now but

2956

04:39:14,470 --> 04:39:12,719

don't go too far

2957

04:39:16,470 --> 04:39:14,480

okay so we have it we haven't stopped

2958

04:39:17,990 --> 04:39:16,480

the gca yet unless you say it's not uh

2959

04:39:18,949 --> 04:39:18,000

complete so i think you should complete

2960

04:39:23,189 --> 04:39:18,959

you know

2961

04:39:28,310 --> 04:39:25,189

breaks are on that we think you're go

2962

04:39:30,260 --> 04:39:28,320

for the apfr adjustments

2963

04:39:32,949 --> 04:39:30,270

okay

2964

04:39:34,709 --> 04:39:32,959

[Music]

2965

04:39:44,470 --> 04:39:34,719

tomorrow we'll complete our tether swap

2966

04:39:47,830 --> 04:39:46,150

the international space station is

2967

04:39:49,110 --> 04:39:47,840

flying

2968

04:39:51,350 --> 04:39:49,120

miles

2969

04:39:53,270 --> 04:39:51,360

over the atlantic ocean midway through

2970

04:39:55,430 --> 04:39:53,280

between the east coast of south america

2971

04:39:56,550 --> 04:39:55,440

and the west coast of africa this is my

2972

04:39:59,430 --> 04:39:56,560

um

2973

04:40:02,980 --> 04:39:59,440

last race better on the android 52

2974

04:40:15,990 --> 04:40:02,990

3-2 jenny the cage

2975

04:40:26,470 --> 04:40:18,628

release your yellow hook from the ssrms

2976

04:40:26,480 --> 04:40:40,948

oh

2977

04:40:40,958 --> 04:41:20,470

okay

2978

04:41:24,830 --> 04:41:22,628

and i think i need a

2979

04:41:27,510 --> 04:41:24,840

230

2980

04:41:31,750 --> 04:41:27,520

centimeters body in

2981

04:41:35,110 --> 04:41:33,590

copy we can do that

2982

04:41:39,590 --> 04:41:35,120

20 centimeters

2983

04:41:43,350 --> 04:41:41,510

and you have the clearances there of the

2984

04:41:46,070 --> 04:41:43,360

clearing suit okay with that we'll call

2985

04:41:48,868 --> 04:41:46,080

it a start gca

2986

04:41:56,868 --> 04:41:48,878

starting gca and

2987

04:41:56,878 --> 04:42:05,990

happy good motion

2988

04:42:06,000 --> 04:42:11,590

time to go

2989

04:42:15,350 --> 04:42:13,430

and that's the 20 centimeters jasper

2990

04:42:16,708 --> 04:42:15,360

how's that look that looks good thank

2991

04:42:34,250 --> 04:42:16,718

you

2992

04:42:34,260 --> 04:42:43,190

[Music]

2993

04:42:48,550 --> 04:42:45,510

that is a good tether config

2994

04:43:15,350 --> 04:42:48,560

you can ret to the apfr

2995

04:43:15,360 --> 04:43:24,708

i might waste that on the mta uk foreign

2996

04:43:29,510 --> 04:43:26,550

that's fine toma

2997

04:43:31,990 --> 04:43:29,520

remove the apfr

2998

04:43:49,830 --> 04:43:32,000

and install it in with 13 with a

2999

04:43:49,840 --> 04:44:17,510

very sticky

3000

04:44:17,520 --> 04:44:29,350

um

3001
04:44:35,270 --> 04:44:31,510
probably not he's very sticky journey i

3002
04:44:40,230 --> 04:44:36,628
you think shane

3003
04:44:40,240 --> 04:44:56,868
we copy tomorrow

3004
04:44:56,878 --> 04:45:15,990
okay

3005
04:45:16,000 --> 04:45:27,990
got it

3006
04:45:28,000 --> 04:45:30,628
okay

3007
04:45:30,638 --> 04:45:35,990
if you find out

3008
04:45:41,590 --> 04:45:38,550
you said with 13

3009
04:45:43,670 --> 04:45:41,600
a firm it should be on the a-frame

3010
04:46:11,590 --> 04:45:43,680
near your left hand

3011
04:46:32,070 --> 04:46:15,030
six

3012
04:46:32,080 --> 04:46:37,990
okay k5 in clocking off

3013
04:46:43,030 --> 04:46:40,070

out right on black

3014

04:46:47,990 --> 04:46:45,430

good apfr install tomorrow check your

3015

04:46:49,830 --> 04:46:48,000

tools and tethers are clear from the arm

3016

04:46:57,270 --> 04:46:49,840

and you can remove your tether to the

3017

04:47:02,070 --> 04:46:59,190

approaching the three and a half hour

3018

04:47:03,990 --> 04:47:02,080

mark in the space walk today by pesquet

3019

04:47:05,350 --> 04:47:04,000

and kimbrough a good view of thomas

3020

04:47:07,590 --> 04:47:05,360

pesquet

3021

04:47:09,270 --> 04:47:07,600

ev1 or extra vehicular crew member

3022

04:47:10,310 --> 04:47:09,280

number one wearing the suit with the red

3023

04:47:13,350 --> 04:47:10,320

stripes

3024

04:47:15,670 --> 04:47:13,360

he is uh stowing the foot restraint that

3025

04:47:18,310 --> 04:47:15,680

was affixed to the end of the canadarm2

3026
04:47:20,628 --> 04:47:18,320
robotic arm that he placed his feet into

3027
04:47:24,310 --> 04:47:20,638
to ride the arm

3028
04:47:27,350 --> 04:47:24,320
carrying the iss rollout solar array to

3029
04:47:29,350 --> 04:47:27,360
the port 6 truss work site

3030
04:47:31,990 --> 04:47:29,360
where shane kimbrough is patiently

3031
04:47:34,150 --> 04:47:32,000
waiting for pesquet to join him

3032
04:47:36,230 --> 04:47:34,160
to install uh the array that you see

3033
04:47:38,470 --> 04:47:36,240
here in the field of view from

3034
04:47:41,350 --> 04:47:38,480
kimbrough's helmet camera

3035
04:47:44,550 --> 04:47:41,360
with the earth below

3036
04:47:46,788 --> 04:47:44,560
that array will be mounted onto a mod

3037
04:47:49,670 --> 04:47:46,798
kit as it's called basically a mounting

3038
04:47:51,670 --> 04:47:49,680

bracket at the base of the port 6 truss

3039

04:47:52,470 --> 04:47:51,680

structure

3040

04:47:56,310 --> 04:47:52,480

then

3041

04:47:58,788 --> 04:47:56,320

electronic cables will be hooked up

3042

04:48:00,868 --> 04:47:58,798

to join the new array to the integrated

3043

04:48:02,470 --> 04:48:00,878

electronics assembly

3044

04:48:04,628 --> 04:48:02,480

for the 2b

3045

04:48:07,910 --> 04:48:04,638

for the 4b power channel in this case

3046

04:48:12,230 --> 04:48:07,920

the 2b power channel received the first

3047

04:48:14,868 --> 04:48:12,240

new solar array this past sunday

3048

04:48:17,830 --> 04:48:14,878

the crew then uh will be using a pistol

3049

04:48:20,708 --> 04:48:17,840

grip tool to disengage a series of bolts

3050

04:48:24,150 --> 04:48:20,718

to enable uh the array to be unfolded

3051
04:48:26,788 --> 04:48:24,160
and unfurled and tensioned

3052
04:48:35,270 --> 04:48:26,798
so that it can begin to draw electricity

3053
04:48:40,230 --> 04:48:37,750
each of these new arrays

3054
04:48:42,390 --> 04:48:40,240
will be capable of producing about 20

3055
04:48:45,750 --> 04:48:42,400
kilowatts of electricity

3056
04:48:49,270 --> 04:48:45,760
to augment the current uh power output

3057
04:48:51,670 --> 04:48:49,280
of the station's older solar arrays

3058
04:48:53,510 --> 04:48:51,680
in all six of the eight power channels

3059
04:48:55,270 --> 04:48:53,520
on the station will receive a raise

3060
04:48:57,110 --> 04:48:55,280
those power channels

3061
04:48:58,948 --> 04:48:57,120
drawing the greatest loads or the

3062
04:49:01,750 --> 04:48:58,958
greatest requirements

3063
04:49:04,230 --> 04:49:01,760

for electrical consumption for payloads

3064

04:49:06,550 --> 04:49:04,240

and other hardware that they are

3065

04:49:09,430 --> 04:49:06,560

associated with

3066

04:49:11,350 --> 04:49:09,440

the technology from these roll-out solar

3067

04:49:13,270 --> 04:49:11,360

arrays that are being installed on the

3068

04:49:16,310 --> 04:49:13,280

space station is also going to be used

3069

04:49:18,470 --> 04:49:16,320

in the gateway program in lunar orbit

3070

04:49:20,788 --> 04:49:18,480

the gateway is an outpost under

3071

04:49:23,430 --> 04:49:20,798

development that will orbit the moon

3072

04:49:25,670 --> 04:49:23,440

providing support for a long-term human

3073

04:49:30,070 --> 04:49:25,680

return to the lunar surface and a

3074

04:49:31,750 --> 04:49:30,080

staging point for deep space exploration

3075

04:49:32,708 --> 04:49:31,760

the arrays

3076
04:49:35,110 --> 04:49:32,718
to be

3077
04:49:38,150 --> 04:49:35,120
used for the gateway program

3078
04:49:40,868 --> 04:49:38,160
are and particularly for the

3079
04:49:43,110 --> 04:49:40,878
power and propulsion element of gateway

3080
04:49:44,310 --> 04:49:43,120
uh will be a bit larger

3081
04:49:46,230 --> 04:49:44,320
than the

3082
04:49:48,390 --> 04:49:46,240
rollout solar arrays being installed on

3083
04:49:51,190 --> 04:49:48,400
the space station

3084
04:49:53,670 --> 04:49:51,200
a single uh irosa or

3085
04:49:55,830 --> 04:49:53,680
station rollout solar array measures 60

3086
04:49:57,190 --> 04:49:55,840
feet by 15 feet

3087
04:49:59,190 --> 04:49:57,200
while the

3088
04:50:01,750 --> 04:49:59,200

solar array wing contemplated for

3089

04:50:04,150 --> 04:50:01,760

gateway will be 60 feet in length and 32

3090

04:50:06,550 --> 04:50:04,160

feet wide

3091

04:50:08,070 --> 04:50:06,560

the two arrays

3092

04:50:10,628 --> 04:50:08,080

to be installed on the power and

3093

04:50:12,948 --> 04:50:10,638

propulsion element of gateway in the

3094

04:50:13,990 --> 04:50:12,958

future will produce about 60 kilowatts

3095

04:50:16,070 --> 04:50:14,000

of power

3096

04:50:17,110 --> 04:50:16,080

gateway to use the power to move around

3097

04:50:19,830 --> 04:50:17,120

the moon

3098

04:50:21,670 --> 04:50:19,840

while performing lunar exploration tasks

3099

04:50:25,030 --> 04:50:21,680

technology demonstrations and other

3100

04:50:25,040 --> 04:50:41,000

the incremental yields

3101
04:50:56,948 --> 04:50:43,270

[Music]

3102
04:51:01,750 --> 04:50:58,230

yep

3103
04:51:04,628 --> 04:51:01,760

it's your inner click now

3104
04:51:07,990 --> 04:51:04,638

how's my own orientation of this

3105
04:51:11,110 --> 04:51:09,510

yeah i go on the structure over there to

3106
04:51:12,390 --> 04:51:11,120

my left are we good

3107
04:51:14,628 --> 04:51:12,400

yeah we're good but you'll have to pick

3108
04:51:18,550 --> 04:51:14,638

up a lot when we get to the end

3109
04:51:23,750 --> 04:51:18,930

and now

3110
04:51:29,270 --> 04:51:25,110

looking better

3111
04:51:30,948 --> 04:51:29,280

getting more but i'm gonna wrap that out

3112
04:51:33,750 --> 04:51:30,958

though and then i'll let you go ahead

3113
04:51:37,190 --> 04:51:34,628

ready

3114

04:51:46,390 --> 04:51:37,200

all right here's

3115

04:51:51,670 --> 04:51:48,470

all right

3116

04:51:53,830 --> 04:51:51,680

you're out of six going down to five

3117

04:52:09,590 --> 04:51:53,840

we're clicking five and i'll tell you

3118

04:52:09,600 --> 04:52:42,230

come on i'm ready for the next job okay

3119

04:52:46,070 --> 04:52:44,070

need

3120

04:53:03,910 --> 04:52:46,080

40 degrees of feature 30 degrees of

3121

04:53:29,520 --> 04:53:07,270

um ready when you are okay ready for

3122

04:53:29,530 --> 04:53:33,110

[Music]

3123

04:53:37,750 --> 04:53:35,190

so the arrows are close to the hfr but

3124

04:53:40,230 --> 04:53:37,760

they still have some clears yeah the

3125

04:53:53,270 --> 04:53:40,240

height is huge for now

3126
04:53:55,510 --> 04:53:54,310
now

3127
04:54:29,590 --> 04:53:55,520
i'm ready

3128
04:54:35,270 --> 04:54:33,670
zoom out translation by the ps4 position

3129
04:54:36,708 --> 04:54:35,280
we copy you're in a good position and we

3130
04:54:39,830 --> 04:54:36,718
copy the clearance of our rosa to

3131
04:54:42,390 --> 04:54:39,840
structure well done tomorrow ensure that

3132
04:54:46,948 --> 04:54:42,400
shane's tether is clear for his egress

3133
04:55:15,990 --> 04:54:48,390
i'll go under

3134
04:55:37,110 --> 04:55:18,110
tomah you're translating to handrail

3135
04:55:43,270 --> 04:55:39,510
a firm you'll be fair leading your

3136
04:55:49,180 --> 04:55:43,280
safety tether on five three five six

3137
04:55:49,190 --> 04:56:35,670
[Music]

3138
04:56:39,830 --> 04:56:37,670

three hours 35 minutes into the

3139

04:56:41,910 --> 04:56:39,840

spacewalk tomorrow pesquet as you can

3140

04:56:42,948 --> 04:56:41,920

see from this view from his helmet

3141

04:56:45,030 --> 04:56:42,958

camera

3142

04:56:45,990 --> 04:56:45,040

moving into position to join kimbrough

3143

04:56:47,990 --> 04:56:46,000

at the

3144

04:56:50,550 --> 04:56:48,000

p6 work site

3145

04:56:53,830 --> 04:56:50,560

where he will take a handoff of the

3146

04:56:56,948 --> 04:56:53,840

array back from kimbrough

3147

04:56:59,590 --> 04:56:56,958

now that he has uh stowed uh

3148

04:57:02,070 --> 04:56:59,600

the uh one of two articulating uh

3149

04:57:07,830 --> 04:57:02,080

portable foot restraints in play

3150

04:57:11,830 --> 04:57:08,948

once that

3151
04:57:13,910 --> 04:57:11,840
second handoff is completed the crew

3152
04:57:15,110 --> 04:57:13,920
will then receive instructions from the

3153
04:57:17,830 --> 04:57:15,120
ground

3154
04:57:20,628 --> 04:57:17,840
iv or space walk communicator jenny

3155
04:57:23,830 --> 04:57:20,638
seidi of the canadian space agency

3156
04:57:26,230 --> 04:57:23,840
to begin work to install the rollout

3157
04:57:28,948 --> 04:57:26,240
solar array to a mounting bracket

3158
04:58:10,788 --> 04:57:28,958
at the base of the p6 array for the 4b

3159
04:58:16,390 --> 04:58:12,628
back with you after the handover repeat

3160
04:58:17,670 --> 04:58:16,400
your last everything looks right

3161
04:58:20,070 --> 04:58:17,680
yes

3162
04:58:21,350 --> 04:58:20,080
everything looks looks right

3163
04:58:25,590 --> 04:58:21,360

involving james

3164

04:58:25,600 --> 04:58:32,070

we want to confirm settings of fox 11.

3165

04:58:36,628 --> 04:58:35,030

yes 12 in your focus 11 journey

3166

04:58:38,150 --> 04:58:36,638

okay copy we're caught up tomorrow you

3167

04:58:43,030 --> 04:58:38,160

can ingress the apfr then we'll do our

3168

04:58:46,470 --> 04:58:44,150

okay

3169

04:59:13,430 --> 04:58:46,480

and uh then you have to

3170

04:59:13,440 --> 04:59:35,110

hey

3171

04:59:41,190 --> 04:59:36,628

come on mind the clearance between your

3172

04:59:41,200 --> 05:00:16,788

i see it jenny i'm doing my best

3173

05:00:16,798 --> 05:00:32,150

yeah i'm in the apfrom

3174

05:00:42,470 --> 05:00:34,230

we are two minutes until eclipse set

3175

05:00:50,910 --> 05:00:44,390

heels secure in the apfr and gauntlets

3176

05:00:54,390 --> 05:00:52,708

[Music]

3177

05:00:56,310 --> 05:00:54,400

okay with that you can work together to

3178

05:00:58,628 --> 05:00:56,320

transfer control of airosa

3179

05:01:00,550 --> 05:00:58,638

keep in mind you'll be performing a red

3180

05:01:05,510 --> 05:01:00,560

swap and it's important to mod that the

3181

05:01:10,470 --> 05:01:07,590

so that's good

3182

05:01:12,788 --> 05:01:10,480

okay that makes sense and um

3183

05:01:19,430 --> 05:01:12,798

jane if you're ready

3184

05:01:24,230 --> 05:01:22,550

i'm not just already there stop reach up

3185

05:01:26,550 --> 05:01:24,240

all right man

3186

05:01:28,150 --> 05:01:26,560

yeah i didn't have your russian but

3187

05:01:30,230 --> 05:01:28,160

i'm trying i don't have much authority

3188

05:01:32,070 --> 05:01:30,240

but okay

3189

05:01:33,830 --> 05:01:32,080

if you bring it up a little bit then i

3190

05:01:36,390 --> 05:01:33,840

can help right now we have the blankets

3191

05:01:40,230 --> 05:01:37,910

there you go

3192

05:01:51,670 --> 05:01:40,240

okay

3193

05:01:51,680 --> 05:01:55,750

you're only there

3194

05:02:06,150 --> 05:01:57,830

so the

3195

05:02:12,070 --> 05:02:07,910

yeah the light on the screen have a hand

3196

05:02:12,080 --> 05:02:14,948

um

3197

05:02:20,628 --> 05:02:16,788

okay i have control but i'm on the

3198

05:02:24,390 --> 05:02:22,470

yeah i'm like no you have control but i

3199

05:02:27,270 --> 05:02:24,400

know standby

3200

05:02:29,110 --> 05:02:27,280

i'm i'm i'm more than 90 degrees

3201

05:02:31,350 --> 05:02:29,120

um sideways so i'm gonna have to rotate

3202

05:02:32,708 --> 05:02:31,360

the hole around 70 of these

3203

05:02:34,550 --> 05:02:32,718

um

3204

05:02:37,590 --> 05:02:34,560

i'm going to need you to initiate that

3205

05:02:41,270 --> 05:02:37,600

motion very slowly once you let go

3206

05:02:42,550 --> 05:02:41,280

and then i'll try to stop it

3207

05:02:45,430 --> 05:02:42,560

that makes sense

3208

05:02:49,110 --> 05:02:47,590

okay

3209

05:02:50,708 --> 05:02:49,120

all right

3210

05:02:52,550 --> 05:02:50,718

i i will always come here and you're

3211

05:02:56,390 --> 05:02:52,560

saying you're breaking your folder yeah

3212

05:02:59,270 --> 05:02:56,400

say again what you want so i want you to

3213

05:03:01,030 --> 05:02:59,280

remember the final position

3214

05:03:02,868 --> 05:03:01,040

so i need your end

3215

05:03:05,110 --> 05:03:02,878

to rotate

3216

05:03:17,430 --> 05:03:05,120

your left shoulder axis of rotation with

3217

05:03:17,440 --> 05:03:34,390

get my red off

3218

05:03:34,400 --> 05:03:44,750

hello

3219

05:03:44,760 --> 05:03:48,470

[Applause]

3220

05:03:59,590 --> 05:03:50,070

i have two hands on it but on the same

3221

05:03:59,600 --> 05:04:02,310

helping

3222

05:04:02,320 --> 05:04:10,390

you'll have to you

3223

05:04:10,400 --> 05:04:19,190

good job

3224

05:04:19,200 --> 05:04:30,708

i don't see it though

3225

05:04:35,750 --> 05:04:32,550

i appreciate the let go is what i mean

3226

05:04:43,830 --> 05:04:37,990

okay okay

3227

05:04:56,310 --> 05:04:44,868

yeah

3228

05:04:56,320 --> 05:05:25,990

get out of here

3229

05:05:29,590 --> 05:05:27,830

well done tommon shane shane understand

3230

05:05:31,110 --> 05:05:29,600

you're egressing the apfr you can

3231

05:06:08,150 --> 05:05:31,120

release your fair lead and head to the

3232

05:06:08,160 --> 05:06:13,030

hey come on

3233

05:06:21,430 --> 05:06:14,708

i'm trying to have good control here

3234

05:06:21,440 --> 05:06:31,830

get home

3235

05:06:31,840 --> 05:07:29,030

copies

3236

05:07:31,670 --> 05:07:30,310

tv crew

3237

05:07:34,470 --> 05:07:31,680

warning and caution for you while

3238

05:07:36,628 --> 05:07:34,480

jenny's taking a quick break one on the

3239

05:07:39,110 --> 05:07:36,638

outside of the mod kit on the outboard

3240

05:07:42,628 --> 05:07:39,120

side avoid contacting the legacy blanket

3241

05:07:44,470 --> 05:07:42,638

boxes and protruding trunnions

3242

05:07:46,230 --> 05:07:44,480

and a caution while both crew are

3243

05:07:48,470 --> 05:07:46,240

working on the mod kit crew must not

3244

05:07:51,030 --> 05:07:48,480

simultaneously impart loads into the mod

3245

05:07:54,390 --> 05:07:51,040

kit that's translation unfolding irosa

3246

05:07:56,150 --> 05:07:54,400

bolt ops connector ops or cable routing

3247

05:07:58,550 --> 05:07:56,160

sudden stops and quick grabs are not

3248

05:08:00,788 --> 05:07:58,560

allowed on the mod kit 30 pounds max

3249

05:08:23,020 --> 05:08:00,798

lateral load on mod kit

3250

05:08:23,030 --> 05:08:28,070

[Music]

3251

05:08:28,080 --> 05:08:33,110

over here

3252

05:08:36,788 --> 05:08:35,430

and shane for you you're translating

3253

05:08:39,270 --> 05:08:36,798

around the left side of the mounting

3254

05:08:42,150 --> 05:08:39,280

bracket don't forget the fairlead around

3255

05:08:49,190 --> 05:08:42,160

the iea corner on handrails five three

3256

05:08:55,030 --> 05:08:51,270

end up now and then i'll

3257

05:10:32,708 --> 05:08:55,040

put a rich man fairly simply

3258

05:10:32,718 --> 05:11:00,948

what's going on tomorrow

3259

05:11:00,958 --> 05:11:27,830

shane we see you trending

3260

05:11:27,840 --> 05:11:34,868

on the left side of the bracket if he

3261

05:11:39,990 --> 05:11:37,510

we copy shane we need you to check the

3262

05:11:54,310 --> 05:11:40,000

left soft capture features are armed and

3263

05:11:54,320 --> 05:11:59,990

copy

3264

05:12:02,948 --> 05:12:01,510

we're going to work to install our rose

3265

05:12:04,708 --> 05:12:02,958

on the mounting bracket

3266

05:12:05,910 --> 05:12:04,718

make sure the bottom of the root beam is

3267

05:12:08,788 --> 05:12:05,920

aligned with the mounting bracket

3268

05:12:11,270 --> 05:12:08,798

alignment features prior to installing

3269

05:12:12,868 --> 05:12:11,280

and caution confirm no bga motion prior

3270

05:12:14,708 --> 05:12:12,878

to installing our rosa on the mounting

3271

05:12:16,550 --> 05:12:14,718

bracket

3272

05:12:19,430 --> 05:12:16,560

shane you can maintain control of by

3273

05:12:21,270 --> 05:12:19,440

rosa assisting tomah as he uses the

3274

05:12:22,868 --> 05:12:21,280

adjustable equipment tether hook the

3275

05:12:25,110 --> 05:12:22,878

long side which is stowed on the

3276

05:12:31,190 --> 05:12:25,120

mounting bracket scoop to tether to and

3277

05:12:35,830 --> 05:12:33,350

so it's it's too far james

3278

05:12:37,910 --> 05:12:35,840

in my back i don't think i can do that

3279

05:12:40,948 --> 05:12:37,920

you know the expected challenge you

3280

05:12:44,868 --> 05:12:40,958

could maybe you have to know the apfr

3281

05:12:49,350 --> 05:12:44,878

i'm sorry but not the life

3282

05:12:53,750 --> 05:12:51,270

i have a handrail can i

3283

05:12:55,670 --> 05:12:53,760

get towards you tomorrow uh if you if

3284

05:12:59,290 --> 05:12:55,680

you have control and i can yell myself i

3285

05:13:08,230 --> 05:12:59,300

have control okay you have control

3286

05:13:08,240 --> 05:13:19,910

in one hand

3287

05:13:19,920 --> 05:13:34,948

oh

3288

05:13:34,958 --> 05:13:41,270

they all

3289

05:13:41,280 --> 05:13:53,030

nice

3290

05:14:15,110 --> 05:13:55,350

[Music]

3291

05:14:15,120 --> 05:14:24,380

hey firm remove the scoop

3292

05:14:24,390 --> 05:14:44,948

[Music]

3293

05:14:49,190 --> 05:14:46,628

this is mission control houston as we

3294

05:14:51,830 --> 05:14:49,200

approach the four-hour mark into today's

3295

05:14:53,190 --> 05:14:51,840

spacewalk tomah pesquet and shane

3296

05:14:56,310 --> 05:14:53,200

kimbrough

3297

05:14:59,030 --> 05:14:56,320

in the third spacewalk in the sequence

3298

05:15:00,150 --> 05:14:59,040

currently underway to install the first

3299

05:15:04,230 --> 05:15:00,160

two

3300

05:15:05,510 --> 05:15:04,240

iss roll out solar arrays onto the p6

3301
05:15:06,948 --> 05:15:05,520
truss structure

3302
05:15:08,628 --> 05:15:06,958
for that uh

3303
05:15:10,230 --> 05:15:08,638
portion of the integrated electronics

3304
05:15:13,430 --> 05:15:10,240
assembly for the international space

3305
05:15:15,910 --> 05:15:13,440
station these arrays to augment the

3306
05:15:17,990 --> 05:15:15,920
current power output of the station's

3307
05:15:20,470 --> 05:15:18,000
systems

3308
05:15:23,350 --> 05:15:20,480
the two uh spacewalkers are in the

3309
05:15:24,788 --> 05:15:23,360
process the early stage of installing

3310
05:15:26,708 --> 05:15:24,798
this second

3311
05:15:31,430 --> 05:15:26,718
rollout solar array to a mounting

3312
05:15:34,868 --> 05:15:31,440
bracket at the base of the p6 truss

3313
05:15:38,230 --> 05:15:34,878

after which uh it will be unfolded

3314

05:15:42,550 --> 05:15:41,110

to alignment guides hopefully uh without

3315

05:15:44,310 --> 05:15:42,560

much trouble

3316

05:15:46,070 --> 05:15:44,320

and then to uh have electrical

3317

05:15:48,470 --> 05:15:46,080

connections made through a series of

3318

05:15:50,628 --> 05:15:48,480

cables pre-staged by shane kimbrough

3319

05:15:51,750 --> 05:15:50,638

earlier in today's spacewalk

3320

05:15:53,430 --> 05:15:51,760

yeah

3321

05:15:55,670 --> 05:15:53,440

he's pulling all that because it's

3322

05:15:57,110 --> 05:15:55,680

stable and suddenly it goes down really

3323

05:15:59,910 --> 05:15:57,120

fast

3324

05:16:03,430 --> 05:15:59,920

trying to hold it down on mine right

3325

05:16:05,510 --> 05:16:03,440

don't pull it so that it hits you

3326

05:16:07,590 --> 05:16:05,520

now it's too much this is that's too

3327

05:16:16,600 --> 05:16:07,600

much it it's making it pitch down and

3328

05:16:39,590 --> 05:16:32,470

[Music]

3329

05:16:46,788 --> 05:16:42,788

sign up yep do you want to go in

3330

05:16:46,798 --> 05:16:50,948

pitching up on your side

3331

05:17:04,708 --> 05:16:52,470

maybe three

3332

05:17:12,070 --> 05:17:06,788

all the way no it's not running on my

3333

05:17:12,080 --> 05:17:14,868

on your side now

3334

05:17:17,830 --> 05:17:17,110

that's another angle right there here we

3335

05:17:22,310 --> 05:17:17,840

go

3336

05:17:25,910 --> 05:17:23,670

it's all in the angle you're still

3337

05:17:49,190 --> 05:17:25,920

whining

3338

05:18:16,230 --> 05:17:51,830

i'm into

3339

05:18:16,240 --> 05:18:26,948

around this thing

3340

05:18:26,958 --> 05:18:35,670

shane you're coming across broken

3341

05:18:40,150 --> 05:18:37,670

that the defense are engaged

3342

05:18:42,470 --> 05:18:40,160

mime and guys are engaged both

3343

05:18:44,310 --> 05:18:42,480

uh left and center and we're checking

3344

05:19:01,110 --> 05:18:44,320

the defense

3345

05:19:04,708 --> 05:19:03,270

the a-frame gets in the way it's more

3346

05:19:10,470 --> 05:19:04,718

exciting it's a bit more challenging

3347

05:19:14,310 --> 05:19:12,390

to confirm you have both alignment

3348

05:19:20,130 --> 05:19:14,320

features and both soft capture features

3349

05:19:23,750 --> 05:19:21,590

[Music]

3350

05:19:25,030 --> 05:19:23,760

we have both alignment features and we

3351

05:19:26,788 --> 05:19:25,040

are checking

3352

05:19:28,470 --> 05:19:26,798

the tents the self-captures that's what

3353

05:19:35,510 --> 05:19:28,480

we're doing right now

3354

05:19:35,520 --> 05:19:38,868

okay both the uh

3355

05:19:38,878 --> 05:19:45,910

capture parents are in

3356

05:19:50,230 --> 05:19:48,390

copy we understand well done you two to

3357

05:19:51,270 --> 05:19:50,240

my you can release your rat

3358

05:19:54,070 --> 05:19:51,280

and you'll be

3359

05:19:56,390 --> 05:19:54,080

using the adjustable equipment hook on

3360

05:19:58,070 --> 05:19:56,400

the mounting bracket scoop to

3361

05:20:08,868 --> 05:19:58,080

attach to the scoop which is in your

3362

05:20:12,070 --> 05:20:10,390

shane you will be connecting the

3363

05:20:28,788 --> 05:20:12,080

adjustable equipment tethers which you

3364

05:20:28,798 --> 05:20:52,948

background machine

3365

05:20:57,750 --> 05:20:55,670

from the melting brackets goofy now on

3366

05:20:59,830 --> 05:20:57,760

the left scoop and i'm gonna go ahead

3367

05:21:00,788 --> 05:20:59,840

and release the left scoop go back to

3368

05:21:14,708 --> 05:21:00,798

the bag

3369

05:21:18,548 --> 05:21:16,390

this is mission control houston we have

3370

05:21:21,270 --> 05:21:18,558

hit the four hour mark into uh today's

3371

05:21:22,390 --> 05:21:21,280

spacewalk by tomah pesquet and shane

3372

05:21:24,390 --> 05:21:22,400

kimbrough

3373

05:21:26,868 --> 05:21:24,400

they have mounted

3374

05:21:29,670 --> 05:21:26,878

the irosa

3375

05:21:31,990 --> 05:21:29,680

array the iss rollout solar array for

3376

05:21:34,230 --> 05:21:32,000

the 4b power channel of the

3377

05:21:36,628 --> 05:21:34,240

international space station and have

3378

05:21:38,548 --> 05:21:36,638

achieved a soft capture onto the

3379

05:21:39,750 --> 05:21:38,558

mounting bracket at the base of the port

3380

05:21:42,788 --> 05:21:39,760

6 truss

3381

05:21:44,948 --> 05:21:42,798

structure of the international outpost

3382

05:21:45,990 --> 05:21:44,958

with that having been completed the next

3383

05:21:48,470 --> 05:21:46,000

step

3384

05:21:51,830 --> 05:21:48,480

will be for pescade to use a pistol grip

3385

05:21:54,548 --> 05:21:51,840

tool to release a final hinge restraint

3386

05:21:55,910 --> 05:21:54,558

called the inner hinge launch restraint

3387

05:21:57,510 --> 05:21:55,920

on the array

3388

05:22:00,830 --> 05:21:57,520

that will be the precursor to the

3389

05:22:03,270 --> 05:22:00,840

unfolding of the array hopefully uh with

3390

05:22:05,430 --> 05:22:03,280

less trouble than

3391

05:22:07,110 --> 05:22:05,440

was experienced with a structural

3392

05:22:11,990 --> 05:22:07,120

interference on the first spacewalk

3393

05:22:15,510 --> 05:22:13,670

on that occasion

3394

05:22:17,350 --> 05:22:15,520

for the first of these two arrays a

3395

05:22:19,190 --> 05:22:17,360

structural interference

3396

05:22:22,708 --> 05:22:19,200

resulted in

3397

05:22:24,470 --> 05:22:22,718

the array being refolded into place

3398

05:22:27,430 --> 05:22:24,480

a series of troubleshooting steps were

3399

05:22:29,670 --> 05:22:27,440

implemented to enable pesque and kimbro

3400

05:22:31,670 --> 05:22:29,680

to unfold and unfurl that array

3401

05:22:33,510 --> 05:22:31,680

successfully this past sunday in the

3402

05:22:35,270 --> 05:22:33,520

second spacewalk they've conducted

3403

05:22:36,788 --> 05:22:35,280

equipment tethers to the left side of

3404

05:22:38,948 --> 05:22:36,798

irosa

3405

05:22:41,910 --> 05:22:38,958

following that we'll be able to release

3406

05:22:45,430 --> 05:22:41,920

the final hinge restraint bolt r6 so you

3407

05:22:47,830 --> 05:22:45,440

can ready your pgt the timing of today's

3408

05:22:50,230 --> 05:22:47,840

operation requires uh the international

3409

05:22:52,548 --> 05:22:50,240

space station to be orbiting in darkness

3410

05:22:54,470 --> 05:22:52,558

or eclipse

3411

05:22:57,430 --> 05:22:54,480

at the time that electrical connections

3412

05:22:58,628 --> 05:22:57,440

are made so that we don't have power

3413

05:23:00,230 --> 05:22:58,638

flowing through the integrated

3414

05:23:02,948 --> 05:23:00,240
electronics assembly while those

3415

05:23:05,190 --> 05:23:02,958
connections are being hooked up

3416

05:23:06,310 --> 05:23:05,200
for the new array to the electronics

3417

05:23:08,470 --> 05:23:06,320
assembly

3418

05:23:11,190 --> 05:23:08,480
we're 15 minutes into this current night

3419

05:23:13,430 --> 05:23:11,200
pass of the international space station

3420

05:23:16,230 --> 05:23:13,440
flight director pooja gesrani has

3421

05:23:17,910 --> 05:23:16,240
informed the team here that we will not

3422

05:23:20,708 --> 05:23:17,920
get to those electrical

3423

05:23:21,910 --> 05:23:20,718
electrical connections during this pass

3424

05:23:24,548 --> 05:23:21,920
and will

3425

05:23:25,670 --> 05:23:24,558
wait until the next night pass to begin

3426

05:23:27,190 --> 05:23:25,680

that work

3427

05:23:29,670 --> 05:23:27,200

pending uh the other

3428

05:23:32,628 --> 05:23:29,680

activities uh that will precede that

3429

05:23:36,548 --> 05:23:32,638

including the unfolding and securing of

3430

05:23:39,510 --> 05:23:36,558

the array in an unfolded alignment

3431

05:23:41,670 --> 05:23:39,520

configuration releases the final

3432

05:23:43,990 --> 05:23:41,680

hinge restraint bolt r6

3433

05:23:49,350 --> 05:23:44,000

tomas standby for settings until shane's

3434

05:23:58,708 --> 05:23:51,270

you can say no and i won't drive in

3435

05:24:02,548 --> 05:24:01,750

to my your settings are bravo 2 counter

3436

05:24:16,150 --> 05:24:02,558

2

3437

05:24:16,160 --> 05:24:31,670

um

3438

05:24:31,680 --> 05:24:36,150

how many pounds

3439

05:25:05,750 --> 05:24:39,110

you're releasing r6 18 to 20 turns the

3440

05:25:05,760 --> 05:25:25,990

uh

3441

05:25:33,350 --> 05:25:29,510

then you have nineteen first and revolt

3442

05:25:36,470 --> 05:25:33,360

popped out we released

3443

05:26:17,830 --> 05:25:36,480

capital on 19 turns r6 is released you

3444

05:26:17,840 --> 05:26:52,660

i have big picture words for

3445

05:27:04,070 --> 05:26:58,370

[Music]

3446

05:27:04,080 --> 05:27:09,430

your next step is to relocate the

3447

05:27:09,440 --> 05:27:15,750

uh apfrom we not opening a russo first

3448

05:27:18,310 --> 05:27:17,110

no you're next

3449

05:27:20,460 --> 05:27:18,320

with a handle

3450

05:27:21,830 --> 05:27:20,470

your next step is to forget

3451

05:27:27,270 --> 05:27:21,840

[Music]

3452

05:27:31,590 --> 05:27:29,190

yeah cool yeah

3453

05:27:32,788 --> 05:27:31,600

okay we don't need that api now benny i

3454

05:27:35,270 --> 05:27:32,798

don't want to keep staying waiting like

3455

05:27:37,190 --> 05:27:35,280

this for too long but no call i

3456

05:27:39,350 --> 05:27:37,200

understand you can open it up and tether

3457

05:27:42,070 --> 05:27:39,360

it first if that's better for both you

3458

05:27:48,070 --> 05:27:45,030

i think it's better it will do that

3459

05:27:51,270 --> 05:27:48,080

understand do that warning pitch point

3460

05:27:52,708 --> 05:27:51,280

keep clear of rotating irosa to tomorrow

3461

05:27:56,708 --> 05:27:52,718

make sure that you are on the outboard

3462

05:28:08,880 --> 05:28:00,070

pinch point we'll make sure

3463

05:28:08,890 --> 05:28:15,830

[Music]

3464

05:28:21,190 --> 05:28:18,150

the two space walkers now uh are

3465

05:28:36,070 --> 05:28:21,200

beginning to unfold the rollout solar

3466

05:28:41,190 --> 05:28:39,110

the array will be tethered into place

3467

05:28:44,390 --> 05:28:41,200

for a short period of time

3468

05:28:46,708 --> 05:28:44,400

while we reconfigure foot restraints

3469

05:28:48,868 --> 05:28:46,718

prior to the point

3470

05:28:50,628 --> 05:28:48,878

at which uh the two spacewalkers will

3471

05:28:55,350 --> 05:28:50,638

attempt to straighten it to its full

3472

05:28:57,750 --> 05:28:56,548

okay

3473

05:28:59,670 --> 05:28:57,760

feathers

3474

05:29:15,350 --> 05:28:59,680

um one on the handle that you're holding

3475

05:29:52,390 --> 05:29:15,840

one

3476

05:29:55,510 --> 05:29:53,590

okay

3477

05:29:56,390 --> 05:29:55,520

well done you too the same situation as

3478

05:30:01,190 --> 05:29:56,400

on the

3479

05:30:01,200 --> 05:30:03,910

copy

3480

05:30:09,270 --> 05:30:07,110

tomah you can read to the apfr we'll

3481

05:30:10,948 --> 05:30:09,280

move that to the center inboard side of

3482

05:30:12,390 --> 05:30:10,958

the mounting bracket

3483

05:30:16,470 --> 05:30:12,400

and i have big picture words for you

3484

05:30:21,110 --> 05:30:18,070

i'll take a minute to address my cooling

3485

05:30:23,990 --> 05:30:21,120

because i'm still on my ssi s1 cooling

3486

05:30:37,110 --> 05:30:24,000

i've been working with before

3487

05:30:41,510 --> 05:30:38,830

go ahead with the words

3488

05:30:43,910 --> 05:30:41,520

anyway okay while well done unfolding

3489

05:30:45,830 --> 05:30:43,920

our rosa we are going to

3490

05:30:47,990 --> 05:30:45,840

uh

3491

05:30:50,868 --> 05:30:48,000

continue with the install steps on the

3492

05:30:53,190 --> 05:30:50,878

mounting bracket we are not going to

3493

05:30:54,788 --> 05:30:53,200

complete connectors during this eclipse

3494

05:30:57,510 --> 05:30:54,798

so we're going to prioritize getting

3495

05:30:58,548 --> 05:30:57,520

irosa in a stable config on the mounting

3496

05:31:01,830 --> 05:30:58,558

bracket

3497

05:31:05,110 --> 05:31:01,840

your pet is just over 4 hours

3498

05:31:09,910 --> 05:31:05,120

limiting consumable 7 hours 55 minutes

3499

05:31:09,920 --> 05:31:13,510

okay

3500

05:31:17,430 --> 05:31:15,510

we'll have more big picture words on

3501
05:31:19,190 --> 05:31:17,440
when we're doing those cables shortly

3502
05:31:21,270 --> 05:31:19,200
but again we're pushing with bolts at

3503
05:31:23,270 --> 05:31:21,280
this time so tomorrow you have your next

3504
05:31:24,470 --> 05:31:23,280
steps to relocate the apfr and i'll take

3505
05:31:29,430 --> 05:31:24,480
a glove inspection half check and

3506
05:31:35,990 --> 05:31:32,788
okay jenny on my left hand gloves uh

3507
05:31:40,390 --> 05:31:36,000
my middle finger ring finger make sure

3508
05:31:40,400 --> 05:31:44,708
and right glove looks good

3509
05:31:44,718 --> 05:31:54,390
copy check countless town

3510
05:31:59,670 --> 05:31:57,750
well tomas relocating the apfr shane you

3511
05:32:01,430 --> 05:31:59,680
can stow your green pgt on the crew lock

3512
05:32:06,868 --> 05:32:01,440
bag and stow your long duration tie down

3513
05:32:12,310 --> 05:32:10,390

uh what's the laundry okay gotcha um

3514

05:32:13,910 --> 05:32:12,320

i just keep my pgt if that's very able

3515

05:32:14,708 --> 05:32:13,920

to sand it back and forth

3516

05:32:17,270 --> 05:32:14,718

yes

3517

05:32:20,788 --> 05:32:19,270

this is mission control houston 4 hours

3518

05:32:24,070 --> 05:32:20,798

11 minutes in

3519

05:32:25,030 --> 05:32:24,080

to the space walk today the

3520

05:32:27,190 --> 05:32:25,040

second

3521

05:32:30,548 --> 05:32:27,200

iss rollout solar array has been

3522

05:32:32,548 --> 05:32:30,558

unfolded from its stowed configuration

3523

05:32:34,788 --> 05:32:32,558

following its soft capture onto a

3524

05:32:37,110 --> 05:32:34,798

mounting bracket at the base of the p6

3525

05:32:39,190 --> 05:32:37,120

solar ray truss structure

3526

05:32:40,628 --> 05:32:39,200

at this point uh thomas pesquet and

3527

05:32:41,830 --> 05:32:40,638

shane kimbrough

3528

05:32:44,788 --> 05:32:41,840

will

3529

05:32:47,430 --> 05:32:44,798

continue work to more securely fasten

3530

05:32:48,230 --> 05:32:47,440

the array to that mounting bracket will

3531

05:32:49,430 --> 05:32:48,240

not

3532

05:32:51,910 --> 05:32:49,440

attempt

3533

05:32:53,990 --> 05:32:51,920

to hook up electrical connections during

3534

05:32:56,230 --> 05:32:54,000

this particular night pass

3535

05:32:58,470 --> 05:32:56,240

of the international space station

3536

05:33:01,190 --> 05:32:58,480

the flight control team here wants to do

3537

05:33:03,030 --> 05:33:01,200

that in a slow and methodical fashion

3538

05:33:04,150 --> 05:33:03,040

those electrical connections must be

3539

05:33:06,948 --> 05:33:04,160

mated

3540

05:33:09,430 --> 05:33:06,958

during an eclipse or night pass of the

3541

05:33:11,670 --> 05:33:09,440

earth to make sure that they're not hot

3542

05:33:13,430 --> 05:33:11,680

if you will that there's no power

3543

05:33:16,470 --> 05:33:13,440

flowing through the integrated

3544

05:33:19,110 --> 05:33:16,480

electronics assembly during the night

3545

05:33:20,868 --> 05:33:19,120

time orbit of the earth

3546

05:33:23,030 --> 05:33:20,878

we will get to them we're just going to

3547

05:33:23,910 --> 05:33:23,040

have to wait uh for the next nighttime

3548

05:33:30,150 --> 05:33:23,920

pass

3549

05:33:30,160 --> 05:33:46,868

a firm fox fox hotel 3.

3550

05:33:46,878 --> 05:34:03,750

hotel

3551

05:34:10,788 --> 05:34:05,430

i'm sorry

3552

05:34:10,798 --> 05:34:44,150

copy installed clocking nine

3553

05:34:49,270 --> 05:34:46,708

for situational awareness

3554

05:34:51,350 --> 05:34:49,280

the next night pass of the international

3555

05:34:53,590 --> 05:34:51,360

space station where the electrical

3556

05:35:08,708 --> 05:34:53,600

connections can be made is about an hour

3557

05:35:14,548 --> 05:35:11,750

okay now it's in parallel valves

3558

05:35:16,708 --> 05:35:14,558

i have a high cover grip

3559

05:35:20,548 --> 05:35:16,718

oh and swiss test

3560

05:35:20,558 --> 05:35:26,070

awesome

3561

05:35:26,080 --> 05:35:31,430

copy come on

3562

05:35:36,230 --> 05:35:32,830

okay it was quick

3563

05:35:43,030 --> 05:35:36,240

ready tomorrow can you verify that the

3564

05:35:46,948 --> 05:35:44,868

if we didn't touch it i reported before

3565

05:35:51,270 --> 05:35:46,958

that it wasn't right

3566

05:35:58,868 --> 05:35:53,030

yeah this is the right one if it's not

3567

05:36:04,390 --> 05:36:01,350

if you said it was expected

3568

05:36:08,470 --> 05:36:04,400

it was expected that it deployed

3569

05:36:24,708 --> 05:36:08,480

but we want you to reset it okay gotcha

3570

05:36:34,230 --> 05:36:26,310

translate to the outboard side of the

3571

05:36:38,548 --> 05:36:36,470

and shane for you

3572

05:36:41,110 --> 05:36:38,558

you are going to

3573

05:36:43,350 --> 05:36:41,120

pull down the middle soft capture

3574

05:36:45,990 --> 05:36:43,360

feature and cinch the adjustable

3575

05:36:55,190 --> 05:36:46,000

equipment tether pot to hold the pin

3576

05:36:59,910 --> 05:36:57,750

you can your next step is to ingress the

3577

05:37:05,590 --> 05:36:59,920

apfr chain so if you can reach it better

3578

05:37:27,990 --> 05:37:07,590

we're coming into insulation in about a

3579

05:37:28,000 --> 05:37:40,020

um

3580

05:37:40,030 --> 05:37:51,350

[Music]

3581

05:37:55,830 --> 05:37:53,350

again what's the next steps

3582

05:38:00,948 --> 05:37:58,788

you're going to cinch the adjustable

3583

05:38:02,868 --> 05:38:00,958

equipment tether on the middle soft

3584

05:38:06,230 --> 05:38:02,878

capture feature taut

3585

05:38:17,830 --> 05:38:06,240

so that the soft capture feature is held

3586

05:38:21,590 --> 05:38:19,910

tomorrow you're just standing by will

3587

05:38:24,070 --> 05:38:21,600

sync up and then we'll have an

3588

05:38:41,510 --> 05:38:24,080

installation attempt but i'll give you

3589

05:38:45,350 --> 05:38:43,590

okay jenny it's cinch down and it's full

3590

05:38:47,910 --> 05:38:45,360

open

3591

05:38:50,470 --> 05:38:47,920

in the center that's a good config chain

3592

05:38:52,788 --> 05:38:50,480

from my understanding only the leftmost

3593

05:38:59,270 --> 05:38:52,798

soft capture feature should be up

3594

05:39:01,510 --> 05:39:00,150

okay

3595

05:39:03,430 --> 05:39:01,520

so big picture

3596

05:39:04,948 --> 05:39:03,440

with the leftmost capture feature

3597

05:39:07,350 --> 05:39:04,958

engaged as it is we are going to

3598

05:39:10,628 --> 05:39:07,360

straighten out irosa

3599

05:39:12,470 --> 05:39:10,638

to ma you're going to pull out board

3600

05:39:15,110 --> 05:39:12,480

shane you will push the right side

3601
05:39:17,670 --> 05:39:15,120
toward tomah but ensure that irosa stays

3602
05:39:20,788 --> 05:39:17,680
fully unfolded by pulling the left side

3603
05:39:22,150 --> 05:39:20,798
near the hinge inboard toward you again

3604
05:39:26,948 --> 05:39:22,160
we're going to try and straighten out by

3605
05:39:30,470 --> 05:39:28,548
it's a matter of angle we're right in

3606
05:39:34,470 --> 05:39:30,480
the middle of the slop but now you have

3607
05:39:39,990 --> 05:39:37,670
i'm going to pull out my side push on

3608
05:39:42,230 --> 05:39:40,000
the point i can i can do what i cannot

3609
05:39:43,510 --> 05:39:42,240
do with the angle okay

3610
05:39:46,870 --> 05:39:43,520
okay

3611
05:39:48,390 --> 05:39:46,880
sit up i start coming out slowly

3612
05:39:49,990 --> 05:39:48,400
[Music]

3613
05:39:51,990 --> 05:39:50,000

and pitched towards you right your body

3614

05:39:53,510 --> 05:39:52,000

actually speeds up as if you were flying

3615

05:39:55,430 --> 05:39:53,520

yep

3616

05:40:00,350 --> 05:39:55,440

uh yeah but it's pretty level here i

3617

05:40:03,590 --> 05:40:01,670

[Music]

3618

05:40:14,548 --> 05:40:03,600

yeah it's right there but it's just not

3619

05:40:46,530 --> 05:40:16,948

yeah i think it's a misalignment of this

3620

05:40:51,110 --> 05:40:49,190

[Music]

3621

05:40:53,670 --> 05:40:51,120

try to pitch it up from your perspective

3622

05:41:01,350 --> 05:40:55,910

actually i think it's in the middle so

3623

05:41:01,360 --> 05:41:07,830

push

3624

05:41:11,430 --> 05:41:09,190

now from your perspective have your

3625

05:41:13,270 --> 05:41:11,440

pitch down or pitched up

3626

05:41:15,030 --> 05:41:13,280

it breaks level because it's a man it's

3627

05:41:17,510 --> 05:41:15,040

just metal on the mounting bracket yeah

3628

05:41:19,110 --> 05:41:17,520

yeah but there's there's one two degrees

3629

05:41:20,948 --> 05:41:19,120

okay and i think that's what prevents it

3630

05:41:22,548 --> 05:41:20,958

because it's right just like just like

3631

05:41:24,548 --> 05:41:22,558

last time here the alignment guide is

3632

05:41:26,390 --> 05:41:24,558

facing the slot pretty nicely in the

3633

05:41:27,510 --> 05:41:26,400

middle it doesn't go in because of the

3634

05:41:39,830 --> 05:41:27,520

pitch

3635

05:41:43,590 --> 05:41:41,990

um

3636

05:41:45,110 --> 05:41:43,600

don't go anywhere i'll do that last time

3637

05:41:54,708 --> 05:41:45,120

i come forward

3638

05:41:54,718 --> 05:42:10,040

ready

3639

05:42:10,050 --> 05:42:18,548

[Music]

3640

05:42:18,558 --> 05:42:32,548

okay let's

3641

05:42:32,558 --> 05:43:05,560

well i you two

3642

05:43:05,570 --> 05:43:14,548

[Music]

3643

05:43:14,558 --> 05:43:19,590

feature is down

3644

05:43:22,548 --> 05:43:20,708

that's good

3645

05:43:35,510 --> 05:43:22,558

he's not up that's why we're not going

3646

05:43:39,830 --> 05:43:37,430

okay four hours 22 minutes into the

3647

05:43:42,070 --> 05:43:39,840

spacewalk pesky and kimbrough using uh

3648

05:43:44,628 --> 05:43:42,080

the troubleshooting methods that were

3649

05:43:45,590 --> 05:43:44,638

developed following the first spacewalk

3650

05:43:53,910 --> 05:43:45,600

back on

3651
05:44:00,708 --> 05:43:56,070
capturing up

3652
05:44:04,070 --> 05:44:03,190
that's fun

3653
05:44:06,628 --> 05:44:04,080
all right

3654
05:44:08,390 --> 05:44:06,638
so at this point hardware meets the

3655
05:44:10,548 --> 05:44:08,400
minimal structural configuration for

3656
05:44:13,510 --> 05:44:10,558
mating cables during eclipse we are

3657
05:44:14,868 --> 05:44:13,520
going to push with driving r7 and r8 the

3658
05:44:16,390 --> 05:44:14,878
hinge bolts

3659
05:44:18,310 --> 05:44:16,400
shane you're currently in position but

3660
05:44:21,590 --> 05:44:18,320
we understand you might want toma to

3661
05:44:21,600 --> 05:44:32,390
uh all right you can fight for sure

3662
05:44:36,230 --> 05:44:34,310
the two spacewalkers using a bit of

3663
05:44:38,548 --> 05:44:36,240

elbow grease and the troubleshooting

3664

05:44:42,708 --> 05:44:38,558

techniques of jostling

3665

05:44:45,190 --> 05:44:42,718

the array into its firm capture position

3666

05:44:47,750 --> 05:44:45,200

achieve success setting the stage for

3667

05:44:50,470 --> 05:44:47,760

the driving of a series of bolts hinge

3668

05:44:52,470 --> 05:44:50,480

restraints to make sure that the array

3669

05:44:55,110 --> 05:44:52,480

is securely fastened to the mounting

3670

05:45:10,310 --> 05:44:55,120

bracket at the base of the p6 solar

3671

05:45:10,320 --> 05:45:24,708

thank you sir

3672

05:45:24,718 --> 05:45:43,190

obstacles

3673

05:45:43,200 --> 05:45:58,628

well tomorrow i gotta come back out

3674

05:45:58,638 --> 05:46:07,230

uh

3675

05:46:07,240 --> 05:46:14,628

[Applause]

3676

05:46:14,638 --> 05:46:19,510

alpha one clockwise two

3677

05:46:19,520 --> 05:46:25,190

one clockwise to you

3678

05:46:36,310 --> 05:46:28,150

we're driving these bolts thirteen one

3679

05:46:41,190 --> 05:46:38,708

the canadian space agency astronaut

3680

05:46:43,910 --> 05:46:41,200

who's the spacewalk communicator

3681

05:46:46,070 --> 05:46:43,920

uh providing uh guidance uh to kimbrough

3682

05:46:47,510 --> 05:46:46,080

and pesquet as they now will use a

3683

05:46:49,670 --> 05:46:47,520

pistol grip tool

3684

05:46:52,470 --> 05:46:49,680

to drive a pair of bolts those are hinge

3685

05:46:54,628 --> 05:46:52,480

restraints to make sure that we are in

3686

05:46:57,270 --> 05:46:54,638

the process of securely

3687

05:46:59,830 --> 05:46:57,280

tightening up if you will the

3688

05:47:03,670 --> 05:46:59,840

unfolded solar array to its mounting

3689

05:47:06,708 --> 05:47:03,680

bracket at the base of the p6 truss

3690

05:47:08,708 --> 05:47:06,718

so it's unfolding followed by unfurling

3691

05:47:12,070 --> 05:47:08,718

to get this array out to its full length

3692

05:47:14,390 --> 05:47:12,080

of 60 feet to begin generating power

3693

05:47:46,740 --> 05:47:14,400

to augment the current power output of

3694

05:47:46,750 --> 05:47:55,430

[Music]

3695

05:48:01,510 --> 05:47:59,270

copy 13 turns on r8

3696

05:48:04,788 --> 05:48:01,520

if you can reach our 7 from your current

3697

05:48:10,868 --> 05:48:04,798

position we want 13 turns only on r7

3698

05:48:10,878 --> 05:48:43,990

okay

3699

05:48:48,310 --> 05:48:46,868

copy 13 turns on r7 you can stow your

3700

05:48:50,390 --> 05:48:48,320

pgt

3701

05:49:01,948 --> 05:48:50,400

once shane is ready he can hand you the

3702

05:49:01,958 --> 05:49:10,868

yeah okay

3703

05:49:14,470 --> 05:49:12,548

here somewhere

3704

05:49:24,230 --> 05:49:14,480

yeah it's gonna be buried on the on that

3705

05:49:24,240 --> 05:49:27,350

okay

3706

05:49:30,230 --> 05:49:28,310

uh

3707

05:49:34,230 --> 05:49:30,240

i have to pull out everything

3708

05:49:34,240 --> 05:49:37,590

well i can help you now

3709

05:49:37,600 --> 05:49:40,310

yes

3710

05:49:44,548 --> 05:49:41,990

well you're in the crew lock bag we'll

3711

05:49:57,910 --> 05:49:44,558

also need the

3712

05:50:01,430 --> 05:49:59,910

we're looking for the

3713

05:50:04,948 --> 05:50:01,440

ams knob

3714

05:50:10,868 --> 05:50:06,390

returns right

3715

05:50:41,270 --> 05:50:12,868

copy you're just looking to tighten

3716

05:50:41,280 --> 05:50:54,160

returns

3717

05:50:58,110 --> 05:50:56,948

[Music]

3718

05:51:01,110 --> 05:50:58,120

the

3719

05:51:05,990 --> 05:51:01,120

atfr2x5r7 hey firm and i copy four turns

3720

05:51:14,548 --> 05:51:07,910

over center

3721

05:51:32,628 --> 05:51:17,910

and i've retrieved the marshmallow at

3722

05:51:32,638 --> 05:51:40,868

you're breaking up

3723

05:51:45,430 --> 05:51:42,788

copy you've retrieved

3724

05:51:46,150 --> 05:51:45,440

your adjustables choma and could we get

3725

05:51:53,830 --> 05:51:46,160

a

3726
05:51:57,270 --> 05:51:53,840
understood

3727
05:52:03,750 --> 05:51:57,280
tamar could you power cycle your hakka

3728
05:52:05,850 --> 05:52:05,510
shane on the cables

3729
05:52:06,948 --> 05:52:05,860
um

3730
05:52:08,868 --> 05:52:06,958
[Music]

3731
05:52:10,708 --> 05:52:08,878
and you want them rounded in front of

3732
05:52:14,310 --> 05:52:10,718
the this throttle

3733
05:52:16,470 --> 05:52:14,320
yeah it's perfect like this yeah okay

3734
05:52:27,990 --> 05:52:16,480
that's the chaos okay jenny power cycle

3735
05:52:49,110 --> 05:52:29,910
thank you tama you can move on to

3736
05:52:49,120 --> 05:53:01,990
center on three

3737
05:53:05,110 --> 05:53:03,190
four

3738
05:53:07,590 --> 05:53:05,120

far nothing

3739

05:53:25,110 --> 05:53:07,600

again

3740

05:53:29,430 --> 05:53:27,270

as we wait uh for the next nighttime

3741

05:53:30,708 --> 05:53:29,440

pass of the station a consideration is

3742

05:53:33,110 --> 05:53:30,718

being given

3743

05:53:35,190 --> 05:53:33,120

to have the crew

3744

05:53:37,830 --> 05:53:35,200

press ahead uh with the release of

3745

05:53:39,350 --> 05:53:37,840

deployment launch restraints a pair of

3746

05:53:41,270 --> 05:53:39,360

bolts

3747

05:53:44,470 --> 05:53:41,280

that uh would set the stage for the

3748

05:53:45,990 --> 05:53:44,480

actual unfurling of the array

3749

05:53:47,990 --> 05:53:46,000

taking uh the sequence of events

3750

05:53:50,470 --> 05:53:48,000

slightly out of uh

3751

05:53:52,628 --> 05:53:50,480

the uh previously

3752

05:53:53,510 --> 05:53:52,638

timelined sequence but uh we'll get

3753

05:53:55,430 --> 05:53:53,520

there

3754

05:53:57,910 --> 05:53:55,440

uh everything is uh continuing to

3755

05:53:58,868 --> 05:53:57,920

proceed for the deployment of this

3756

05:54:03,030 --> 05:53:58,878

second

3757

05:54:05,030 --> 05:54:03,040

irosa or iss rollout solar array

3758

05:54:07,030 --> 05:54:05,040

for the 4b power channel on the

3759

05:54:10,670 --> 05:54:07,040

international space station

3760

05:54:14,310 --> 05:54:10,680

to join the initial array that was

3761

05:54:16,470 --> 05:54:14,320

unfolded and unfurled on sunday during

3762

05:54:19,190 --> 05:54:16,480

the second of this set of three

3763

05:54:21,030 --> 05:54:19,200

spacewalks

3764

05:54:28,868 --> 05:54:21,040

do you want me to get the scoop in front

3765

05:54:28,878 --> 05:54:58,070

stand by shane

3766

05:55:01,830 --> 05:55:00,070

okay i have big picture words for both

3767

05:55:03,190 --> 05:55:01,840

of you you've done a great job getting

3768

05:55:05,990 --> 05:55:03,200

our rosa secure and meeting those

3769

05:55:07,430 --> 05:55:06,000

entitles we have 22 minutes until our

3770

05:55:10,390 --> 05:55:07,440

working eclipse

3771

05:55:12,070 --> 05:55:10,400

so shane you can egress the apfr and

3772

05:55:13,670 --> 05:55:12,080

we'll have you do the inventory on the

3773

05:55:14,948 --> 05:55:13,680

crewlock bag

3774

05:55:17,830 --> 05:55:14,958

toma

3775

05:55:19,430 --> 05:55:17,840

you can get in position underneath the

3776

05:55:21,750 --> 05:55:19,440

mounting bracket and we are going to

3777

05:55:23,350 --> 05:55:21,760

release r9

3778

05:55:25,190 --> 05:55:23,360

obviously we are not going to push with

3779

05:55:47,830 --> 05:55:25,200

any other bolts on the base of the

3780

05:55:47,840 --> 05:55:57,830

no i don't think i'm using it

3781

05:55:57,840 --> 05:56:08,070

which

3782

05:56:11,590 --> 05:56:09,830

and tomas they're going to be in your

3783

05:56:13,830 --> 05:56:11,600

way but as much as possible avoid

3784

05:56:21,810 --> 05:56:13,840

contact with those nzgls that are

3785

05:56:27,350 --> 05:56:24,628

[Music]

3786

05:56:28,708 --> 05:56:27,360

not yet shane we have quite a bit of

3787

05:56:30,948 --> 05:56:28,718

time here so i'm going to get you to

3788

05:56:32,390 --> 05:56:30,958

hold for now i have additional words for

3789

05:57:07,340 --> 05:56:32,400

you and i'll let you know when we can

3790

05:57:22,360 --> 05:57:09,670

[Applause]

3791

05:57:22,370 --> 05:57:28,948

[Music]

3792

05:57:53,350 --> 05:57:31,190

many but welcome to you this is going in

3793

05:57:53,360 --> 05:57:56,470

yes

3794

05:57:56,480 --> 05:58:04,548

okay

3795

05:58:04,558 --> 05:58:08,230

here's a big one

3796

05:58:08,240 --> 05:58:22,868

or small

3797

05:58:27,110 --> 05:58:25,430

it's a small small

3798

05:58:28,628 --> 05:58:27,120

nice thank you

3799

05:58:31,030 --> 05:58:28,638

all right thanks for your patience you

3800

05:58:31,830 --> 05:58:31,040

two we have more big picture words for

3801

05:58:35,830 --> 05:58:31,840

you

3802

05:58:39,510 --> 05:58:35,840

our pet is just under five hours and our

3803

05:58:41,510 --> 05:58:39,520

plan is to make tables during the next

3804

05:58:43,110 --> 05:58:41,520

eclipse which is in just under 20

3805

05:58:47,670 --> 05:58:43,120

minutes

3806

05:58:49,190 --> 05:58:47,680

of our shunt test so that's waiting for

3807

05:58:50,548 --> 05:58:49,200

insulation

3808

05:58:52,470 --> 05:58:50,558

we will

3809

05:58:54,548 --> 05:58:52,480

drive the tensioning bolts and then we

3810

05:58:57,110 --> 05:58:54,558

will come inside with pretty minimal

3811

05:58:58,948 --> 05:58:57,120

cleanup today that puts us at an

3812

05:59:00,948 --> 05:58:58,958

expected eba

3813

05:59:04,868 --> 05:59:00,958

full length of seven hours and ten

3814

05:59:09,270 --> 05:59:08,150

it sounds good jenny

3815

05:59:13,750 --> 05:59:09,280

let's

3816

05:59:13,760 --> 05:59:17,990

appreciate it

3817

05:59:22,230 --> 05:59:19,910

essentially at this time we're plant

3818

05:59:24,708 --> 05:59:22,240

we're trying to minimize your workload

3819

05:59:26,708 --> 05:59:24,718

and your loading so that we can extend

3820

05:59:28,150 --> 05:59:26,718

the time of this eva because we do have

3821

05:59:32,788 --> 05:59:28,160

to wait for that eclipse and then that

3822

05:59:32,798 --> 05:59:41,590

we're understanding that we're taking it

3823

05:59:46,948 --> 05:59:43,670

okay i'm going to give tomah words about

3824

05:59:49,910 --> 05:59:46,958

r9 first so tomah you're going to be

3825

05:59:52,948 --> 05:59:49,920

releasing r9 only your settings will be

3826
05:59:54,470 --> 05:59:52,958
at bravo 7 torque

3827
06:00:13,990 --> 05:59:54,480
so let me know when you're ready you can

3828
06:00:18,070 --> 06:00:15,430
shane we are ready for the inventory

3829
06:00:19,910 --> 06:00:18,080
when you are

3830
06:00:21,590 --> 06:00:19,920
is mission control houston

3831
06:00:24,310 --> 06:00:21,600
thomas pesquet

3832
06:00:25,990 --> 06:00:24,320
is going to release one of two launch

3833
06:00:30,150 --> 06:00:26,000
restraints

3834
06:00:32,548 --> 06:00:30,160
for the new iss rollout solar array you

3835
06:00:35,030 --> 06:00:32,558
can see the two spacewalkers

3836
06:00:36,948 --> 06:00:35,040
operating at the mounting bracket to

3837
06:00:39,430 --> 06:00:36,958
which the new solar array has been

3838
06:00:41,750 --> 06:00:39,440

structurally attached and bolted into

3839

06:00:43,670 --> 06:00:41,760

place

3840

06:00:46,548 --> 06:00:43,680

we're about

3841

06:00:47,990 --> 06:00:46,558

14 minutes away from entering the next

3842

06:00:49,510 --> 06:00:48,000

night pass

3843

06:00:52,548 --> 06:00:49,520

at which time

3844

06:00:55,110 --> 06:00:52,558

we can begin to hook up

3845

06:00:57,910 --> 06:00:55,120

the new electrical cables to the

3846

06:00:59,030 --> 06:00:57,920

existing solar array that you see the

3847

06:01:01,190 --> 06:00:59,040

huge

3848

06:01:02,868 --> 06:01:01,200

p6 solar arrays

3849

06:01:06,230 --> 06:01:02,878

to which the new

3850

06:01:09,190 --> 06:01:06,240

irosa or iss rollout solar array will be

3851
06:01:12,230 --> 06:01:09,200
unfurled to augment the power output

3852
06:01:14,470 --> 06:01:12,240
for the 2b for in this case for the 4b

3853
06:01:15,350 --> 06:01:14,480
power channel on the international space

3854
06:01:17,350 --> 06:01:15,360
station

3855
06:01:19,350 --> 06:01:17,360
on the opposite side

3856
06:01:21,990 --> 06:01:19,360
the array

3857
06:01:24,230 --> 06:01:22,000
that now is augmenting power about 20

3858
06:01:27,350 --> 06:01:24,240
additional kilowatts of power for the 2b

3859
06:01:30,070 --> 06:01:27,360
power channel was installed and unfurled

3860
06:01:31,910 --> 06:01:30,080
back on sunday in the previous spacewalk

3861
06:01:34,150 --> 06:01:31,920
as we have just passed the five hour

3862
06:01:35,910 --> 06:01:34,160
mark into today's excursion

3863
06:01:38,470 --> 06:01:35,920

the international space station has just

3864

06:01:40,070 --> 06:01:38,480

flown off the coast of south america

3865

06:01:42,390 --> 06:01:40,080

over the atlantic ocean moving from

3866

06:01:44,948 --> 06:01:42,400

northwest to southeast in an orbit

3867

06:01:46,310 --> 06:01:44,958

inclined 51.6 degrees to either side of

3868

06:01:48,310 --> 06:01:46,320

the equator

3869

06:01:49,510 --> 06:01:48,320

bravo seven counter two for shane i'm

3870

06:02:05,510 --> 06:01:49,520

still checking whether anything's

3871

06:02:17,270 --> 06:02:08,830

another seven country two

3872

06:02:21,430 --> 06:02:18,868

so good read back on the settings

3873

06:02:23,430 --> 06:02:21,440

tomorrow we're looking to release r9 17

3874

06:03:17,430 --> 06:02:23,440

to 20 turns a white line will appear

3875

06:03:23,110 --> 06:03:18,830

i see the black

3876

06:03:25,350 --> 06:03:23,120

line uh it's fully released

3877

06:03:29,430 --> 06:03:25,360

copy r9 is fully released and you came

3878

06:03:36,868 --> 06:03:32,150

the count was 22 built and the white

3879

06:03:44,628 --> 06:03:40,390

copy 22 turns on r9 you can stow your

3880

06:03:52,390 --> 06:03:47,110

two zero turns

3881

06:03:56,628 --> 06:03:54,708

and one of two uh

3882

06:03:58,470 --> 06:03:56,638

deployment launch restraint bolts has

3883

06:04:00,548 --> 06:03:58,480

now been released

3884

06:04:03,510 --> 06:04:00,558

one bolt away from the point at which we

3885

06:04:06,470 --> 06:04:03,520

can unfurl the array but not before

3886

06:04:09,110 --> 06:04:06,480

electrical connections are hooked up

3887

06:04:12,628 --> 06:04:09,120

to the uh that will interconnect the new

3888

06:04:14,310 --> 06:04:12,638

array with the existing p6 solar rays

3889

06:04:17,030 --> 06:04:14,320

for that we have to wait about another

3890

06:04:19,030 --> 06:04:17,040

10 minutes or so until we fly into an

3891

06:04:21,030 --> 06:04:19,040

orbital sunset initially and those are

3892

06:04:22,390 --> 06:04:21,040

now on tomoz mini workstation could you

3893

06:04:25,830 --> 06:04:22,400

just give us a count on what's on the

3894

06:04:31,030 --> 06:04:28,708

jenny that's negative actually the

3895

06:04:33,590 --> 06:04:31,040

call before with those feathers those

3896

06:04:36,310 --> 06:04:33,600

two at the right side of the

3897

06:04:38,150 --> 06:04:36,320

of the mounting bracket are now back to

3898

06:04:40,310 --> 06:04:38,160

the bag they're on the prologue bag they

3899

06:04:42,390 --> 06:04:40,320

took that well on my side

3900

06:04:44,150 --> 06:04:42,400

yep so total on the outside two small

3901
06:04:45,190 --> 06:04:44,160
small adjustables and one large small

3902
06:04:46,708 --> 06:04:45,200
addressable

3903
06:04:48,310 --> 06:04:46,718
copy thank you for the ones that was out

3904
06:04:51,190 --> 06:04:48,320
there initially them

3905
06:04:53,110 --> 06:04:51,200
on my workstation with the uh

3906
06:04:56,310 --> 06:04:53,120
wire tie that whole set up in much

3907
06:04:56,320 --> 06:05:07,750
copy we're happy with the bad config

3908
06:05:11,910 --> 06:05:09,190
all right and we're still working on

3909
06:05:14,868 --> 06:05:11,920
next steps for both of you

3910
06:05:16,390 --> 06:05:14,878
we think it might be adjusting the mli

3911
06:05:18,150 --> 06:05:16,400
and getting in position for the cables

3912
06:05:20,230 --> 06:05:18,160
but we're still around 12 minutes away

3913
06:05:21,590 --> 06:05:20,240

from that working eclipse time period so

3914

06:05:25,990 --> 06:05:21,600

we're seeing if there's anything else we

3915

06:05:31,510 --> 06:05:28,390

okay jenny

3916

06:05:33,030 --> 06:05:31,520

you know why he looks uh

3917

06:05:34,788 --> 06:05:33,040

it was better on the on the right side

3918

06:05:36,310 --> 06:05:34,798

than on the left side but we'll fix it

3919

06:05:38,150 --> 06:05:36,320

on both

3920

06:05:40,070 --> 06:05:38,160

good offer still in the tree light bag

3921

06:05:41,350 --> 06:05:40,080

and now we have the uh skeet still here

3922

06:05:48,788 --> 06:05:41,360

but we can put that on our mini

3923

06:05:53,590 --> 06:05:50,310

copy shane we think that's a really good

3924

06:05:55,910 --> 06:05:53,600

idea you can take the crew lock bag and

3925

06:05:57,990 --> 06:05:55,920

close up the cable bag

3926

06:06:00,150 --> 06:05:58,000

with it and we will get you to put the

3927

06:06:07,270 --> 06:06:00,160

scoop on your mini workstation after

3928

06:06:07,280 --> 06:07:26,470

good idea

3929

06:07:26,480 --> 06:07:30,470

um

3930

06:07:30,480 --> 06:07:44,948

i'll

3931

06:07:50,868 --> 06:07:48,948

there's one bolt that's released m7

3932

06:07:57,190 --> 06:07:50,878

again m5

3933

06:08:00,948 --> 06:07:58,948

this is mission control houston five

3934

06:08:03,190 --> 06:08:00,958

hours six minutes into uh today's

3935

06:08:04,708 --> 06:08:03,200

spacewalk tomah pesquet and shane

3936

06:08:06,708 --> 06:08:04,718

kimbrough

3937

06:08:09,910 --> 06:08:06,718

receiving updates from the flight

3938

06:08:10,788 --> 06:08:09,920

control team here in mission control

3939

06:08:14,070 --> 06:08:10,798

the

3940

06:08:16,708 --> 06:08:14,080

iss rollout solar array you see very

3941

06:08:17,910 --> 06:08:16,718

clearly at the base of the p6 truss

3942

06:08:19,750 --> 06:08:17,920

structure

3943

06:08:21,430 --> 06:08:19,760

structurally bolted into place on its

3944

06:08:24,948 --> 06:08:21,440

mounting bracket

3945

06:08:27,590 --> 06:08:24,958

as we are standing by for the release

3946

06:08:30,310 --> 06:08:27,600

of one additional launch restraint

3947

06:08:33,190 --> 06:08:30,320

then moving into an orbital sunset at

3948

06:08:36,070 --> 06:08:33,200

which time electrical connectors

3949

06:08:38,070 --> 06:08:36,080

mating uh the new uh cables

3950

06:08:40,708 --> 06:08:38,080

for the solar array

3951
06:08:42,948 --> 06:08:40,718
to the existing electronics for what is

3952
06:08:44,708 --> 06:08:42,958
called the legacy solar array wing or

3953
06:08:47,190 --> 06:08:44,718
these huge solar arrays you see at the

3954
06:08:48,948 --> 06:08:47,200
top of your screen that were delivered

3955
06:08:51,670 --> 06:08:48,958
to the international space station back

3956
06:08:53,750 --> 06:08:51,680
on the sts-97 mission that will

3957
06:08:55,270 --> 06:08:53,760
interconnect the new array with the

3958
06:08:57,910 --> 06:08:55,280
older arrays

3959
06:09:00,868 --> 06:08:57,920
they will work in tandem with each other

3960
06:09:03,030 --> 06:09:00,878
this uh process of installing new

3961
06:09:05,510 --> 06:09:03,040
rollout solar arrays is not to replace

3962
06:09:07,990 --> 06:09:05,520
the old ones but rather to augment their

3963
06:09:09,670 --> 06:09:08,000

power output with an additional 20

3964

06:09:11,910 --> 06:09:09,680

kilowatts of power

3965

06:09:13,830 --> 06:09:11,920

available for station systems and new

3966

06:09:15,990 --> 06:09:13,840

modules to be launched to the space

3967

06:09:18,150 --> 06:09:16,000

station the cable bag at this time we're

3968

06:09:19,270 --> 06:09:18,160

going to have you retrieve the cap

3969

06:09:20,788 --> 06:09:19,280

keepers

3970

06:09:22,470 --> 06:09:20,798

with the caps

3971

06:09:24,390 --> 06:09:22,480

from the cable bag

3972

06:09:26,230 --> 06:09:24,400

and you'll each have one on your mini

3973

06:09:48,570 --> 06:09:26,240

workstation when we go to do these

3974

06:09:52,548 --> 06:09:50,830

[Music]

3975

06:10:03,750 --> 06:09:52,558

bag

3976

06:10:08,470 --> 06:10:06,628

toma you can head to shane to pick up

3977

06:10:10,470 --> 06:10:08,480

that cap keeper as well

3978

06:11:06,788 --> 06:10:10,480

we have just over seven minutes until

3979

06:11:06,798 --> 06:11:11,270

hey i have a cap keeper

3980

06:11:11,280 --> 06:11:17,430

copy shane

3981

06:11:22,070 --> 06:11:19,910

once you both have a cap keeper you can

3982

06:11:29,990 --> 06:11:22,080

head to your position

3983

06:11:30,000 --> 06:11:50,470

get one

3984

06:12:02,390 --> 06:11:53,030

i'll cross over to you but i just stay

3985

06:12:06,390 --> 06:12:04,788

five hours 11 minutes into the space

3986

06:12:09,190 --> 06:12:06,400

walk about five minutes away from

3987

06:12:12,310 --> 06:12:09,200

entering an orbital sunset which will

3988

06:12:14,230 --> 06:12:12,320

trigger the clock enabling us to hook up

3989

06:12:16,948 --> 06:12:14,240

the new electrical cables to the

3990

06:12:19,350 --> 06:12:16,958

existing solar array wing electronics on

3991

06:12:20,948 --> 06:12:19,360

the p6 truss of the station

3992

06:12:22,310 --> 06:12:20,958

once you both have your cap keepers

3993

06:12:23,350 --> 06:12:22,320

again we're going to send you to

3994

06:12:25,750 --> 06:12:23,360

position

3995

06:12:57,830 --> 06:12:25,760

we have five minutes until our working

3996

06:13:05,590 --> 06:13:01,670

and tomah will take a glove hap check

3997

06:13:05,600 --> 06:13:09,010

okay

3998

06:13:09,020 --> 06:13:18,230

[Music]

3999

06:13:18,240 --> 06:13:22,948

i do

4000

06:13:22,958 --> 06:13:30,788

it's all yours i got it

4001
06:13:30,798 --> 06:13:35,990
and you have a good glove

4002
06:13:41,350 --> 06:13:38,708
the golfers are down

4003
06:13:43,190 --> 06:13:41,360
copy tomah good checks 30 seconds till

4004
06:14:55,270 --> 06:13:43,200
hand over once we're back with you i'll

4005
06:14:59,190 --> 06:14:57,190
we're back with you i'll take the glove

4006
06:15:00,708 --> 06:14:59,200
inspection hop check from shane two

4007
06:15:05,910 --> 06:15:00,718
minutes and thirty seconds to work in a

4008
06:15:26,548 --> 06:15:08,868
hold on i'll give you this second

4009
06:15:26,558 --> 06:15:39,750
no change

4010
06:15:39,760 --> 06:15:47,030
we know we're still

4011
06:15:54,070 --> 06:15:51,430
yep i'll have to give you a go once uh

4012
06:15:55,830 --> 06:15:54,080
mcc goes around the room but when the

4013
06:15:58,788 --> 06:15:55,840

time is right tomorrow you will be

4014

06:16:04,708 --> 06:15:58,798

starting with p9 and shane you will be

4015

06:16:10,150 --> 06:16:07,270

and then we connect the

4016

06:16:11,990 --> 06:16:10,160

site first

4017

06:16:14,310 --> 06:16:12,000

you'll be making the wire heart now that

4018

06:16:15,910 --> 06:16:14,320

we've entered an orbital eclipse or

4019

06:16:18,628 --> 06:16:15,920

sunset uh

4020

06:16:21,990 --> 06:16:18,638

the iss flying in darkness

4021

06:16:24,310 --> 06:16:22,000

over the earth uh we can begin work now

4022

06:16:26,150 --> 06:16:24,320

pesquet and kimbrough to begin the

4023

06:16:28,390 --> 06:16:26,160

installation and connection of

4024

06:16:31,110 --> 06:16:28,400

electrical uh cables

4025

06:16:34,628 --> 06:16:31,120

from the new rollout solar array to the

4026
06:16:37,190 --> 06:16:34,638
legacy array the p6 solar rays that have

4027
06:16:39,430 --> 06:16:37,200
existed on the station for

4028
06:16:41,350 --> 06:16:39,440
two decades

4029
06:16:43,350 --> 06:16:41,360
and if we are in the case where we do

4030
06:16:45,670 --> 06:16:43,360
not mate all the connectors during the

4031
06:16:47,510 --> 06:16:45,680
eclipse you must maintain a one foot

4032
06:16:48,788 --> 06:16:47,520
keep out zone from all the demated

4033
06:16:50,628 --> 06:16:48,798
connectors

4034
06:17:37,430 --> 06:16:50,638
two minutes prior and during

4035
06:17:42,390 --> 06:17:39,990
we're go for cables

4036
06:17:44,310 --> 06:17:42,400
thomas d mate p9 from blanketbox power

4037
06:17:47,430 --> 06:17:44,320
panel p9

4038
06:17:52,310 --> 06:17:47,440

likewise shane d mate p7 from blanketbox

4039

06:17:52,320 --> 06:17:56,150

and i have good pins

4040

06:18:07,200 --> 06:17:58,628

i'll be in my

4041

06:18:07,210 --> 06:18:15,270

[Music]

4042

06:18:15,280 --> 06:18:19,030

looking at g7 alpha

4043

06:18:25,190 --> 06:18:21,670

so jd my band

4044

06:18:25,200 --> 06:18:35,350

copy shane mate p7 alpha to p7

4045

06:18:50,980 --> 06:18:37,990

the memorandum is still stiff

4046

06:18:54,468 --> 06:18:53,030

[Music]

4047

06:19:07,990 --> 06:18:54,478

click

4048

06:19:11,190 --> 06:19:10,230

next from ej7 alpha

4049

06:19:12,948 --> 06:19:11,200

right

4050

06:19:16,070 --> 06:19:12,958

hey firm i'll need your checks you can

4051
06:19:17,590 --> 06:19:16,080
make j7 alpha to p7

4052
06:19:20,628 --> 06:19:17,600
r5

4053
06:19:23,750 --> 06:19:20,638
82 p9 is a good click

4054
06:19:30,708 --> 06:19:23,760
copy p9 alpha to p9 to my you can mate

4055
06:19:35,430 --> 06:19:33,830
and also p9 cable to cable and i've got

4056
06:19:37,030 --> 06:19:35,440
good pins

4057
06:19:38,230 --> 06:19:37,040
in my van

4058
06:19:52,830 --> 06:19:38,240
odd

4059
06:20:03,750 --> 06:19:55,830
journey copy tomah you can move on to

4060
06:20:18,948 --> 06:20:05,910
53

4061
06:20:25,510 --> 06:20:23,590
i'm making a p23 alpha 2p

4062
06:20:39,110 --> 06:20:25,520
able to panel

4063
06:20:45,430 --> 06:20:42,548

all right hey it's a good click jenny

4064

06:20:49,430 --> 06:20:45,440

i'll touch your p23 cable channel copy

4065

06:20:56,070 --> 06:20:49,440

p23 alpha to p23 move on to j23 alpha to

4066

06:20:58,788 --> 06:20:57,200

i got p21

4067

06:21:01,270 --> 06:20:58,798

[Music]

4068

06:21:14,340 --> 06:21:01,280

also going to p21

4069

06:21:14,350 --> 06:21:18,468

[Music]

4070

06:21:24,390 --> 06:21:21,110

working in an orbital uh sun

4071

06:21:26,390 --> 06:21:24,400

set uh period an eclipse period

4072

06:21:29,350 --> 06:21:26,400

kimbrough and pesquet have now hooked up

4073

06:21:32,628 --> 06:21:29,360

uh electrical cables from the new

4074

06:21:34,548 --> 06:21:32,638

irosa rollout solar array to the legacy

4075

06:21:35,990 --> 06:21:34,558

solar array on the p6 truss of the

4076
06:21:38,628 --> 06:21:36,000
station

4077
06:21:41,110 --> 06:21:38,638
next up will be the unfolding of the

4078
06:21:46,830 --> 06:21:41,120
array the unfurling of it to its full

4079
06:21:48,570 --> 06:21:47,640
[Music]

4080
06:21:56,468 --> 06:21:48,580
[Applause]

4081
06:21:56,478 --> 06:22:02,468
coffee chain

4082
06:22:07,190 --> 06:22:06,230
okay mj7 out of j21 also made

4083
06:22:09,750 --> 06:22:07,200
one

4084
06:22:15,030 --> 06:22:13,350
copy j21 alpha made it to p21

4085
06:22:17,190 --> 06:22:15,040
understand that that is your last

4086
06:22:19,110 --> 06:22:17,200
connector as well well done shane you

4087
06:22:24,150 --> 06:22:19,120
can move to securing the strut mli over

4088
06:22:29,830 --> 06:22:27,030

yeah one more to go jimmy the j21 alpha

4089

06:23:18,468 --> 06:22:32,628

tim snow sard city and ibm understand

4090

06:23:27,990 --> 06:23:20,548

to the best of my abilities using the

4091

06:23:28,000 --> 06:23:32,868

okay

4092

06:23:37,590 --> 06:23:35,430

copy come on give me my last uh mate was

4093

06:23:41,030 --> 06:23:37,600

good good click

4094

06:23:44,390 --> 06:23:41,040

copy so now that is j21 alpha to

4095

06:23:46,708 --> 06:23:44,400

p21 and as you say your last connector

4096

06:24:04,070 --> 06:23:46,718

is complete you can move over move on to

4097

06:24:04,080 --> 06:24:12,948

prioritize

4098

06:24:21,500 --> 06:24:14,628

we think you're asking about the strut

4099

06:24:21,510 --> 06:24:28,948

[Music]

4100

06:24:28,958 --> 06:24:58,868

understood

4101
06:24:58,878 --> 06:25:11,670
cable behind your elbow

4102
06:25:11,680 --> 06:25:20,468
buddy

4103
06:25:23,990 --> 06:25:22,230
well done both of you that is the

4104
06:25:25,750 --> 06:25:24,000
eclipse requirement

4105
06:25:28,390 --> 06:25:25,760
for this eva

4106
06:25:30,150 --> 06:25:28,400
i'll have you stand by on next steps

4107
06:25:36,788 --> 06:25:30,160
again we need to wait for spartan to do

4108
06:25:38,310 --> 06:25:37,180
okay

4109
06:25:41,110 --> 06:25:38,320
[Music]

4110
06:25:53,990 --> 06:25:42,868
should we put the top keepers back in

4111
06:25:58,310 --> 06:25:55,990
this is mission control houston 5 hours

4112
06:26:00,788 --> 06:25:58,320
24 minutes into the spacewalk all of the

4113
06:26:03,590 --> 06:26:00,798

electrical cables have now been mated

4114

06:26:05,670 --> 06:26:03,600

between the new rollout solar array and

4115

06:26:07,830 --> 06:26:05,680

the existing solar arrays

4116

06:26:11,030 --> 06:26:07,840

on the p6 truss of the international

4117

06:26:13,350 --> 06:26:11,040

space station in this case for the 4b

4118

06:26:16,708 --> 06:26:13,360

power channel of the station

4119

06:26:18,628 --> 06:26:16,718

this is the second of six planned new

4120

06:26:21,430 --> 06:26:18,638

rollout solar arrays

4121

06:26:23,350 --> 06:26:21,440

to be installed and unfurled at the

4122

06:26:25,910 --> 06:26:23,360

station at various points on the port

4123

06:26:27,910 --> 06:26:25,920

and starboard trusses of the complex to

4124

06:26:30,230 --> 06:26:27,920

augment the power capability of the

4125

06:26:32,788 --> 06:26:30,240

orbital outpost

4126
06:26:35,670 --> 06:26:32,798
we now will have our electrical systems

4127
06:26:37,910 --> 06:26:35,680
officer conduct a shunt test to measure

4128
06:26:41,430 --> 06:26:37,920
electrical resistance

4129
06:26:43,110 --> 06:26:41,440
flowing through the new array before the

4130
06:26:46,628 --> 06:26:43,120
final launch

4131
06:26:48,868 --> 06:26:46,638
restraint bolt is released to begin

4132
06:26:51,430 --> 06:26:48,878
the unfurling of the

4133
06:26:53,590 --> 06:26:51,440
solar blanket to its full length of 60

4134
06:28:00,708 --> 06:26:53,600
feet and then the tensioning of that

4135
06:28:00,718 --> 06:28:44,708
all right

4136
06:28:44,718 --> 06:28:53,270
thank

4137
06:28:53,280 --> 06:29:22,708
look right there

4138
06:29:22,718 --> 06:29:31,040

we check the order

4139

06:29:31,050 --> 06:29:40,230

[Music]

4140

06:29:40,240 --> 06:29:55,510

or whatever

4141

06:29:58,788 --> 06:29:57,110

just to uh we'll do it across kind of

4142

06:30:04,310 --> 06:29:58,798

crosstalk

4143

06:30:14,390 --> 06:30:07,350

yeah i can't do it

4144

06:30:14,400 --> 06:30:25,970

come on

4145

06:30:25,980 --> 06:30:31,830

[Music]

4146

06:30:31,840 --> 06:31:00,390

okay

4147

06:31:06,948 --> 06:31:02,310

i have big picture words for you both

4148

06:31:11,350 --> 06:31:08,468

but you could use a

4149

06:31:13,190 --> 06:31:11,360

and if you have a viewing tree on a or

4150

06:31:15,910 --> 06:31:13,200

an adjustable you can use the hooks of

4151

06:31:36,788 --> 06:31:15,920

the top keeper itself right

4152

06:31:41,990 --> 06:31:39,990

all right we have 17 minutes until

4153

06:31:43,830 --> 06:31:42,000

spartan can start the shunt test so

4154

06:31:45,510 --> 06:31:43,840

until this eclipse ends

4155

06:31:47,270 --> 06:31:45,520

we expect that shunt test will take at

4156

06:31:50,070 --> 06:31:47,280

least five minutes

4157

06:31:51,270 --> 06:31:50,080

right now your p e t is five hours and

4158

06:31:54,310 --> 06:31:51,280

thirty minutes

4159

06:31:56,868 --> 06:31:54,320

limiting consumable ev2's battery seven

4160

06:31:58,468 --> 06:31:56,878

hours fifty three minutes

4161

06:31:59,510 --> 06:31:58,478

what we're talking now

4162

06:32:03,510 --> 06:31:59,520

is

4163

06:32:06,150 --> 06:32:03,520

probably take around 10 minutes for the

4164

06:32:08,948 --> 06:32:06,160

final bolt and 15 minutes to deploy then

4165

06:32:10,788 --> 06:32:08,958

we need to drive the tensioning bolts

4166

06:32:12,468 --> 06:32:10,798

we're thinking about having just one of

4167

06:32:14,390 --> 06:32:12,478

you out board

4168

06:32:17,590 --> 06:32:14,400

during the deployment so that we can get

4169

06:32:20,390 --> 06:32:17,600

a head start bringing shane back closer

4170

06:32:22,628 --> 06:32:20,400

to the airlock taking with him the cable

4171

06:32:25,190 --> 06:32:22,638

bag and maybe an apfr

4172

06:32:27,110 --> 06:32:25,200

so being closer to the port cedar cart

4173

06:32:29,030 --> 06:32:27,120

for the actual deployment that just

4174

06:32:31,030 --> 06:32:29,040

makes our cleanup steps easier because

4175

06:32:32,948 --> 06:32:31,040

again we're

4176
06:32:34,788 --> 06:32:32,958
running close to where we want to bring

4177
06:32:37,030 --> 06:32:34,798
you inside once the deployment is

4178
06:32:38,628 --> 06:32:37,040
actually complete we'll have the details

4179
06:32:45,590 --> 06:32:38,638
for you shortly but if you have comments

4180
06:32:50,150 --> 06:32:48,390
that sounds good jenny

4181
06:32:59,350 --> 06:32:50,160
danny's retreating the cat keeper right

4182
06:33:49,590 --> 06:33:01,190
it feels good

4183
06:33:57,670 --> 06:33:51,910
and shane did you copy the big picture

4184
06:33:57,680 --> 06:34:24,150
youtube

4185
06:34:27,430 --> 06:34:25,990
all right we are going to put this plan

4186
06:34:28,548 --> 06:34:27,440
into work

4187
06:34:30,788 --> 06:34:28,558
shane

4188
06:34:33,990 --> 06:34:30,798

you're going to take the cable bag and

4189

06:34:37,590 --> 06:34:34,000

bundle it to the apfr in with 37 which

4190

06:34:39,030 --> 06:34:37,600

is the one just in board of the mounting

4191

06:34:40,788 --> 06:34:39,040

bracket

4192

06:34:43,510 --> 06:34:40,798

you'll bundle those together put them on

4193

06:34:55,320 --> 06:34:43,520

your brt and then head inboard

4194

06:34:55,330 --> 06:35:02,868

[Music]

4195

06:35:02,878 --> 06:35:11,910

right

4196

06:35:16,830 --> 06:35:13,990

that means that you'll be releasing the

4197

06:35:18,708 --> 06:35:16,840

final deployment bolt and tensioning the

4198

06:35:20,390 --> 06:35:18,718

bolts uh

4199

06:35:22,310 --> 06:35:20,400

on your own and you'll also be

4200

06:35:23,670 --> 06:35:22,320

retrieving the scoop from the base of

4201
06:35:29,350 --> 06:35:23,680
the mounting bracket and stowing it on

4202
06:35:29,360 --> 06:35:37,830
good

4203
06:35:41,590 --> 06:35:39,830
this is mission control houston just

4204
06:35:44,708 --> 06:35:41,600
past the five and a half hour mark in

4205
06:35:47,830 --> 06:35:44,718
the space walk by pesquet and kimbrough

4206
06:35:50,868 --> 06:35:47,840
jenny seidy the spacewalk communicator

4207
06:35:53,030 --> 06:35:50,878
canadian space agency astronaut has been

4208
06:35:54,948 --> 06:35:53,040
guiding uh the two space walkers through

4209
06:35:57,190 --> 06:35:54,958
their procedures and the revisions to

4210
06:35:58,708 --> 06:35:57,200
those procedures

4211
06:36:00,948 --> 06:35:58,718
the

4212
06:36:03,030 --> 06:36:00,958
decision was made to try to maximize and

4213
06:36:05,750 --> 06:36:03,040

create efficiencies uh for the remainder

4214

06:36:08,548 --> 06:36:05,760

of the spacewalk by having uh pesquet

4215

06:36:10,948 --> 06:36:08,558

release a final launch restraint bolt

4216

06:36:13,910 --> 06:36:10,958

for the newly installed uh

4217

06:36:15,510 --> 06:36:13,920

rollout solar array for the 4b power

4218

06:36:16,948 --> 06:36:15,520

channel on the international space

4219

06:36:19,430 --> 06:36:16,958

station

4220

06:36:22,468 --> 06:36:19,440

while he is uh working to release that

4221

06:36:24,788 --> 06:36:22,478

final bolt and monitor the actual

4222

06:36:27,350 --> 06:36:24,798

unfurling of the array to its full

4223

06:36:29,590 --> 06:36:27,360

distance of 60 feet followed by

4224

06:36:30,548 --> 06:36:29,600

the releasing of a pair of tensioning

4225

06:36:33,030 --> 06:36:30,558

bolts

4226
06:36:34,310 --> 06:36:33,040
that will enable full tensioning for the

4227
06:36:36,070 --> 06:36:34,320
array

4228
06:36:37,670 --> 06:36:36,080
shane kimbrough will begin clean up

4229
06:36:39,750 --> 06:36:37,680
procedures

4230
06:36:41,670 --> 06:36:39,760
there is a sequential uh

4231
06:36:44,070 --> 06:36:41,680
number of events from this point until

4232
06:36:46,070 --> 06:36:44,080
the end of the spacewalk to ensure that

4233
06:36:48,548 --> 06:36:46,080
uh the crew has gathered all of the

4234
06:36:49,670 --> 06:36:48,558
tools and tethers that they've used

4235
06:36:52,788 --> 06:36:49,680
throughout the course of the

4236
06:36:54,468 --> 06:36:52,798
installation of the array and

4237
06:37:15,910 --> 06:36:54,478
the upcoming events that will lead to

4238
06:37:15,920 --> 06:37:50,948

marching

4239

06:37:53,830 --> 06:37:51,910

you what are you up to what are you

4240

06:37:55,910 --> 06:37:53,840

doing well i'm gonna stay here and uh

4241

06:37:58,390 --> 06:37:55,920

release r10 uh but not now when

4242

06:38:00,468 --> 06:37:58,400

everything shakes out i think yeah okay

4243

06:38:02,708 --> 06:38:00,478

he's trying to

4244

06:38:06,230 --> 06:38:02,718

use the hand if you're not done

4245

06:38:11,110 --> 06:38:08,628

of course i'll be right there

4246

06:38:13,750 --> 06:38:11,120

and we agree there's no other steps for

4247

06:38:15,510 --> 06:38:13,760

tomah until we're releasing that final

4248

06:38:17,590 --> 06:38:15,520

bolt and we're still over 10 minutes

4249

06:38:19,350 --> 06:38:17,600

away so you two can work together to get

4250

06:38:24,760 --> 06:38:19,360

shane in a good config to translate

4251

06:38:24,770 --> 06:38:46,948

[Music]

4252

06:38:46,958 --> 06:38:54,468

might need to pop it off the brt but uh

4253

06:39:07,100 --> 06:38:55,750

i just want to put you know like two

4254

06:39:07,110 --> 06:39:13,670

[Music]

4255

06:39:13,680 --> 06:39:28,948

so

4256

06:39:35,430 --> 06:39:30,708

that's still covered and have a hand on

4257

06:39:38,628 --> 06:39:36,708

one of them and there's still one

4258

06:39:40,390 --> 06:39:38,638

attached over here

4259

06:39:42,830 --> 06:39:40,400

there's one on my side

4260

06:39:45,190 --> 06:39:42,840

picture that's as well

4261

06:39:47,030 --> 06:39:45,200

yeah i'm going to help you this one then

4262

06:39:49,990 --> 06:39:47,040

as well

4263

06:39:52,310 --> 06:39:51,510

you're breaking up did you say both of

4264

06:39:54,150 --> 06:39:52,320

yours

4265

06:40:10,070 --> 06:39:54,160

yeah both of my releases do not release

4266

06:40:10,080 --> 06:40:38,390

hey

4267

06:40:38,400 --> 06:40:48,390

connected okay

4268

06:40:57,030 --> 06:40:50,310

says you want

4269

06:40:57,040 --> 06:41:01,670

all right there's something on your side

4270

06:41:04,628 --> 06:41:03,190

connected here

4271

06:41:06,830 --> 06:41:04,638

it's all connected

4272

06:41:08,628 --> 06:41:06,840

you want me to release that

4273

06:41:09,910 --> 06:41:08,638

um yeah you cannot because it's

4274

06:41:11,510 --> 06:41:09,920

connected to

4275

06:41:13,910 --> 06:41:11,520

the ipfr

4276
06:41:15,830 --> 06:41:13,920
okay i can release this one you can use

4277
06:41:22,948 --> 06:41:15,840
it

4278
06:41:22,958 --> 06:41:42,868
control the bag over hand on the bag

4279
06:41:42,878 --> 06:41:57,670
make it nice and snug

4280
06:42:01,670 --> 06:42:00,070
all right so i've got two die down on

4281
06:42:08,040 --> 06:42:01,680
two places

4282
06:42:08,050 --> 06:42:13,430
[Music]

4283
06:42:13,440 --> 06:42:27,000
i'm ready

4284
06:42:27,010 --> 06:42:34,390
[Music]

4285
06:42:39,830 --> 06:42:37,110
so shane we're following that your cable

4286
06:42:40,788 --> 06:42:39,840
bag is bundled to the apfr tomas helping

4287
06:42:51,430 --> 06:42:40,798
you

4288
06:42:51,440 --> 06:42:54,628

okay yeah

4289

06:42:58,150 --> 06:42:57,110

i can't get there with you

4290

06:43:08,628 --> 06:42:58,160

i'll get to

4291

06:43:08,638 --> 06:43:27,270

hey

4292

06:43:31,670 --> 06:43:29,270

nice and slow

4293

06:43:34,310 --> 06:43:31,680

all right let me get my

4294

06:43:35,590 --> 06:43:34,320

fairly in here

4295

06:43:37,990 --> 06:43:35,600

copy shane

4296

06:43:47,590 --> 06:43:38,000

we have five minutes until the end of

4297

06:43:47,600 --> 06:44:33,670

wow

4298

06:44:33,680 --> 06:44:43,350

i don't know gladiator

4299

06:44:49,750 --> 06:44:46,310

tomorrow we can have you get in position

4300

06:44:51,830 --> 06:44:49,760

for r10 we still have a ways to go until

4301
06:45:01,270 --> 06:44:51,840
spartan is going to complete that test

4302
06:45:05,270 --> 06:45:03,110
anything else

4303
06:45:07,990 --> 06:45:05,280
looking good

4304
06:45:09,910 --> 06:45:08,000
poppy shane on your way inboard remember

4305
06:45:17,430 --> 06:45:09,920
to undo your fair leads you might have

4306
06:45:17,440 --> 06:47:10,868
okay kathy all right jimmy

4307
06:47:15,350 --> 06:47:13,430
saying your green hook is on five three

4308
06:47:17,990 --> 06:47:15,360
eight eight and once you get to the port

4309
06:47:24,548 --> 06:47:18,000
cedar cart we will be installing the

4310
06:47:24,558 --> 06:47:30,840
happy

4311
06:47:30,850 --> 06:47:35,430
[Music]

4312
06:47:38,830 --> 06:47:36,708
really in the way but it's going to be

4313
06:48:11,350 --> 06:47:38,840

on your translation rail so don't be

4314

06:48:11,360 --> 06:48:28,468

i got your faith each other

4315

06:48:28,478 --> 06:48:36,788

45 seconds to hand over

4316

06:48:36,798 --> 06:48:47,910

okay

4317

06:49:43,270 --> 06:48:49,830

hey i'm at my green hook location

4318

06:49:53,910 --> 06:49:45,590

my green hook is connected to my red rio

4319

06:49:58,708 --> 06:49:56,390

back with you again actually

4320

06:50:05,030 --> 06:49:58,718

back with you after the handover 100

4321

06:50:08,150 --> 06:50:06,548

radio station

4322

06:50:10,628 --> 06:50:08,160

i'm going to redo that because i uh

4323

06:50:11,510 --> 06:50:10,638

trapped you each other there

4324

06:50:20,230 --> 06:50:11,520

all right

4325

06:50:24,150 --> 06:50:21,990

sun should be coming up in around 30

4326
06:50:26,310 --> 06:50:24,160
seconds

4327
06:50:28,230 --> 06:50:26,320
five hours 49 minutes into the space

4328
06:50:29,430 --> 06:50:28,240
walk we're about to fly into an orbital

4329
06:50:31,430 --> 06:50:29,440
sunrise

4330
06:50:33,750 --> 06:50:31,440
and resume work

4331
06:50:37,190 --> 06:50:33,760
to complete the installation and

4332
06:50:39,510 --> 06:50:37,200
unfurling of this second iss rollout

4333
06:50:41,430 --> 06:50:39,520
solar array that has been structurally

4334
06:50:43,430 --> 06:50:41,440
bolted into place on a mounting bracket

4335
06:50:46,150 --> 06:50:43,440
at the base of the p6 truss

4336
06:50:48,708 --> 06:50:46,160
of the international space station

4337
06:50:51,030 --> 06:50:48,718
tomorrow pesquet has one more bolt to

4338
06:50:52,628 --> 06:50:51,040

release a deployment launch restraint

4339

06:50:53,430 --> 06:50:52,638

bolt

4340

06:50:57,830 --> 06:50:53,440

at

4341

06:51:00,708 --> 06:50:57,840

we should begin uh to hear

4342

06:51:02,628 --> 06:51:00,718

and see the unfurling of the array to

4343

06:51:04,150 --> 06:51:02,638

its full length of about 60 feet

4344

06:51:06,070 --> 06:51:04,160

following that

4345

06:51:08,390 --> 06:51:06,080

there will be the release of two

4346

06:51:48,868 --> 06:51:08,400

tensioning bolts to provide full

4347

06:51:54,948 --> 06:51:51,110

again i think i'm gonna have to undo my

4348

06:52:00,390 --> 06:51:56,868

the wastewater down i'll lock it

4349

06:52:00,400 --> 06:52:08,770

copy shane

4350

06:52:54,390 --> 06:52:14,070

[Music]

4351
06:53:00,070 --> 06:52:57,270
it looks like we just had a good test

4352
06:53:02,868 --> 06:53:00,080
from spartan so that means tomah we can

4353
06:53:04,868 --> 06:53:02,878
release the final bolt for deployment

4354
06:53:06,468 --> 06:53:04,878
shane you can keep working your tether

4355
06:53:13,060 --> 06:53:06,478
and then head to the port seat of cart

4356
06:53:13,070 --> 06:53:17,190
[Music]

4357
06:53:17,200 --> 06:53:23,630
bravo seven counter two

4358
06:53:23,640 --> 06:53:33,548
[Music]

4359
06:53:39,270 --> 06:53:36,468
35.5 pounds

4360
06:53:40,230 --> 06:53:39,280
and how many turns do you want on the

4361
06:53:42,788 --> 06:53:40,240
camera

4362
06:53:45,430 --> 06:53:42,798
until fully released we have written 17

4363
06:53:53,910 --> 06:53:45,440

to 20 but last time it was more a white

4364

06:53:57,670 --> 06:53:55,830

the electrical systems officer here in

4365

06:54:00,310 --> 06:53:57,680

mission control has given the green

4366

06:54:02,708 --> 06:54:00,320

light for the unfurling of the new

4367

06:54:04,468 --> 06:54:02,718

rollout solar array once this final

4368

06:54:06,868 --> 06:54:04,478

launch restraint bolt

4369

06:54:09,750 --> 06:54:06,878

is released by tomah pesquet you see him

4370

06:54:12,548 --> 06:54:09,760

using a pistol grip tool as we speak to

4371

06:54:15,990 --> 06:54:12,558

complete that work

4372

06:54:19,910 --> 06:54:16,000

it should take between 6 and 10 minutes

4373

06:54:21,990 --> 06:54:19,920

or so for the array to fully deploy

4374

06:54:25,110 --> 06:54:22,000

the first array that was installed for

4375

06:54:30,468 --> 06:54:25,120

the 2b power channel on the p6 truss on

4376
06:54:34,430 --> 06:54:32,150
jenny i think it gets each other cleared

4377
06:54:53,350 --> 06:54:34,440
up um

4378
06:54:58,390 --> 06:54:56,548
now you see the second of the new iss

4379
06:54:59,510 --> 06:54:58,400
rollout solar arrays beginning its

4380
06:55:02,628 --> 06:54:59,520
deployment

4381
06:55:05,510 --> 06:55:02,638
pent up stored energy in that system

4382
06:55:10,150 --> 06:55:05,520
enables the array to deploy on its own

4383
06:55:13,270 --> 06:55:10,160
once that final bolt was released the

4384
06:55:51,670 --> 06:55:13,280
deployment beginning at 12 45 pm central

4385
06:55:55,350 --> 06:55:53,990
i see the four magnets together on the

4386
06:56:03,670 --> 06:55:55,360
right side i'm gonna go check on the

4387
06:56:03,680 --> 06:56:23,270
copy tomorrow

4388
06:56:23,280 --> 06:56:44,468

uh

4389

06:56:50,708 --> 06:56:47,270

i can see them snapped together

4390

06:56:52,628 --> 06:56:50,718

on the left side too from here

4391

06:56:59,350 --> 06:56:52,638

great news to mine from our view

4392

06:57:03,990 --> 06:57:01,430

beautiful

4393

06:57:06,390 --> 06:57:04,000

shane once you're at the port cedar cart

4394

06:57:21,830 --> 06:57:06,400

we're going to be installing the apfr in

4395

06:57:24,868 --> 06:57:23,190

i'm gonna

4396

06:57:26,548 --> 06:57:24,878

to minimize the loading to the melting

4397

06:57:30,868 --> 06:57:26,558

bracket so i'm gonna just be here that's

4398

06:57:30,878 --> 06:57:41,670

coffee tama

4399

06:57:45,910 --> 06:57:44,230

tomah if it doesn't impart loads that

4400

06:57:48,468 --> 06:57:45,920

you're talking about into the mod kit

4401
06:57:50,468 --> 06:57:48,478
you can read to and release the scoop on

4402
06:57:52,548 --> 06:57:50,478
the base side of the mounting bracket

4403
06:57:53,750 --> 06:57:52,558
you'll stow that on your mini

4404
06:57:56,548 --> 06:57:53,760
workstation

4405
06:57:58,230 --> 06:57:56,558
we'll also have you inspect the

4406
06:58:04,548 --> 06:57:58,240
left strut

4407
06:58:10,628 --> 06:58:06,230
the new

4408
06:58:13,110 --> 06:58:10,638
solar array the rollout solar array

4409
06:58:14,788 --> 06:58:13,120
the second in the series of six to be

4410
06:58:16,150 --> 06:58:14,798
installed at the international space

4411
06:58:18,948 --> 06:58:16,160
station

4412
06:58:21,590 --> 06:58:18,958
maybe a wire tiny bit it weighs 750

4413
06:58:25,670 --> 06:58:21,600

pounds of mass back on earth

4414

06:58:27,990 --> 06:58:25,680

unfurling to a length of about 60 feet

4415

06:58:30,548 --> 06:58:28,000

20 feet wide providing some 20

4416

06:58:33,510 --> 06:58:30,558

additional kilowatts of power

4417

06:58:41,750 --> 06:58:33,520

for the 4b channel of the international

4418

06:58:47,990 --> 06:58:45,190

so you want me to go and

4419

06:59:04,030 --> 06:58:48,000

modify the vmi on the big strap is that

4420

06:59:04,040 --> 06:59:08,788

[Music]

4421

06:59:12,548 --> 06:59:10,948

you can do it prior to the scoop we just

4422

06:59:14,230 --> 06:59:12,558

wanted to take into account you wanting

4423

06:59:29,430 --> 06:59:14,240

to stay in one spot but we think

4424

06:59:47,270 --> 06:59:31,510

that's the one you want quick a firm

4425

06:59:47,280 --> 06:59:51,350

that's the correct whiff shane

4426

07:00:31,430 --> 06:59:53,270

hey what's he coughing

4427

07:00:37,670 --> 07:00:35,270

the unfurling of the second new iss

4428

07:00:39,468 --> 07:00:37,680

rollout solar array continues

4429

07:00:42,788 --> 07:00:39,478

the international space station flying

4430

07:00:58,070 --> 07:00:42,798

255 statute miles over the southern

4431

07:01:03,510 --> 07:01:00,390

uh 12 o'clock jenny black on black good

4432

07:01:12,548 --> 07:01:06,390

copy shane that is a good apfr install i

4433

07:01:22,468 --> 07:01:15,030

let me get this other bag off first

4434

07:01:26,628 --> 07:01:24,948

and for both of you deployment is still

4435

07:01:28,468 --> 07:01:26,638

looking great and we are getting good

4436

07:01:30,390 --> 07:01:28,478

power from the solar array so we have a

4437

07:01:36,070 --> 07:01:30,400

lot of happy faces down here well done

4438

07:01:40,070 --> 07:01:37,910

the electrical systems officer here in

4439

07:01:42,788 --> 07:01:40,080

mission control reporting a good power

4440

07:01:47,270 --> 07:01:42,798

generation from the new array

4441

07:01:47,280 --> 07:01:50,150

from the front

4442

07:01:54,628 --> 07:01:53,110

if it gets better than it was understood

4443

07:02:20,230 --> 07:01:54,638

all we're looking for is best effort so

4444

07:02:23,990 --> 07:02:22,310

we're still deploying your next steps

4445

07:02:31,190 --> 07:02:24,000

will be to get in position for the

4446

07:02:34,548 --> 07:02:33,030

okay so

4447

07:02:37,830 --> 07:02:34,558

i think that's one more reason to keep

4448

07:02:39,590 --> 07:02:37,840

this scoop for now

4449

07:02:41,670 --> 07:02:39,600

yep you'll need to retrieve the scoop

4450

07:02:43,430 --> 07:02:41,680

before going back inside

4451
07:02:57,350 --> 07:02:43,440
but you can do it after the blanket

4452
07:02:57,360 --> 07:03:06,550
overflowing

4453
07:04:51,670 --> 07:03:09,030
[Music]

4454
07:04:55,110 --> 07:04:53,270
looks like the deployment is complete

4455
07:04:57,110 --> 07:04:55,120
jenny i see the mandrel from a different

4456
07:05:06,708 --> 07:04:57,120
color

4457
07:05:11,110 --> 07:05:08,390
copy tomorrow we're doing our final

4458
07:05:14,150 --> 07:05:11,120
check

4459
07:05:15,910 --> 07:05:14,160
the second iss rollout solar array now

4460
07:05:18,708 --> 07:05:15,920
fully deployed

4461
07:05:20,708 --> 07:05:18,718
we're double checking uh the dimensions

4462
07:05:23,110 --> 07:05:20,718
it appears to be fully deployed and it

4463
07:05:26,948 --> 07:05:23,120

took 10 minutes again just as the first

4464

07:05:32,868 --> 07:05:30,310

alpha one clockwise or counter

4465

07:05:36,150 --> 07:05:32,878

tomah pesquet now will use a pistol grip

4466

07:05:38,548 --> 07:05:36,160

tool to release two tensioning bolts

4467

07:05:40,788 --> 07:05:38,558

that will provide full tensioning

4468

07:05:42,628 --> 07:05:40,798

for the newly deployed

4469

07:05:44,788 --> 07:05:42,638

uh blanket

4470

07:05:46,548 --> 07:05:44,798

and at that point the crew will begin

4471

07:05:50,070 --> 07:05:46,558

the cleanup work

4472

07:05:52,468 --> 07:05:50,080

so everything went uh exceedingly well

4473

07:05:55,510 --> 07:05:52,478

with the installation and deployment

4474

07:05:58,230 --> 07:05:55,520

of this second iss solar array the

4475

07:05:59,910 --> 07:05:58,240

rollout solar array the second of six

4476
07:06:07,030 --> 07:05:59,920
to be installed at the international

4477
07:06:12,868 --> 07:06:08,628
all right

4478
07:06:18,830 --> 07:06:12,878
volkswagen's release up jenny

4479
07:06:18,840 --> 07:06:45,500
ready the same settings

4480
07:06:49,510 --> 07:06:47,030
[Music]

4481
07:06:53,510 --> 07:06:49,520
for you to release

4482
07:06:55,990 --> 07:06:53,520
our uh 11 as well and shane no more

4483
07:07:00,150 --> 07:06:56,000
action with the apfr we can continue

4484
07:07:00,160 --> 07:07:02,788
settings

4485
07:07:28,150 --> 07:07:05,430
a firm alpha one counter two same

4486
07:07:28,160 --> 07:07:32,868
then you have four tones

4487
07:07:36,980 --> 07:07:35,510
and i can confirm on both sides

4488
07:07:38,628 --> 07:07:36,990

the retention mechanism

4489

07:07:40,628 --> 07:07:38,638

[Music]

4490

07:07:43,190 --> 07:07:40,638

copy four turns

4491

07:07:55,750 --> 07:07:43,200

r11 is released well done so my you can

4492

07:07:55,760 --> 07:08:01,270

samantha dmt exact

4493

07:08:04,468 --> 07:08:02,628

flight controllers here in mission

4494

07:09:16,548 --> 07:08:04,478

control now report good tensioning on

4495

07:09:19,670 --> 07:09:18,150

great work you can stow that on your

4496

07:09:21,110 --> 07:09:19,680

mini workstation

4497

07:09:24,070 --> 07:09:21,120

just so you know you will not be

4498

07:09:25,590 --> 07:09:24,080

retrieving any apfrs for your clean up

4499

07:09:27,030 --> 07:09:25,600

steps we're just going to have you

4500

07:09:28,948 --> 07:09:27,040

translate in board

4501
07:09:51,690 --> 07:09:28,958
pick up your green hook and pick up the

4502
07:10:11,190 --> 07:10:04,130
[Music]

4503
07:10:15,030 --> 07:10:14,230
again great work you too our p-e-t is

4504
07:10:17,670 --> 07:10:15,040
now

4505
07:10:21,590 --> 07:10:17,680
six hours and nine minutes limiting

4506
07:10:44,868 --> 07:10:21,600
consumable still ev2 battery 7 hours 53

4507
07:10:48,788 --> 07:10:47,030
she's reading back

4508
07:10:55,110 --> 07:10:48,798
let's look at the workshop looks clean

4509
07:10:55,120 --> 07:11:02,070
i'm on my way

4510
07:11:06,070 --> 07:11:04,070
puppy tomah that you are headed inboard

4511
07:11:08,708 --> 07:11:06,080
i'm back with you after the handover

4512
07:11:10,310 --> 07:11:08,718
before that handover i gave you a pet of

4513
07:12:23,670 --> 07:11:10,320

6 hours 10 minutes and limiting

4514

07:13:17,670 --> 07:12:26,788

if it stays there

4515

07:13:17,680 --> 07:13:27,610

my faculty

4516

07:13:27,620 --> 07:13:35,190

[Music]

4517

07:13:38,548 --> 07:13:36,548

then you're guessing i'm guessing i'm

4518

07:13:40,788 --> 07:13:38,558

picking my green

4519

07:13:46,390 --> 07:13:40,798

hook and i'm attaching you to my red

4520

07:13:50,390 --> 07:13:48,468

hey firm tomah you'll be picking up your

4521

07:14:13,750 --> 07:13:50,400

green hook and then we have you picking

4522

07:14:17,750 --> 07:14:15,430

okay my green hoops

4523

07:14:20,070 --> 07:14:17,760

it's on my red wheel

4524

07:14:21,110 --> 07:14:20,080

that really is unlocked my yellow hook

4525

07:14:22,868 --> 07:14:21,120

is locked

4526
07:14:24,390 --> 07:14:22,878
on my green wheel my green ring is

4527
07:14:26,468 --> 07:14:24,400
unlocked

4528
07:14:30,150 --> 07:14:26,478
and the red hook is still on my left

4529
07:14:30,160 --> 07:14:46,390
sounds good tomorrow continuing board

4530
07:14:51,350 --> 07:14:48,708
thermal cover is open this is mission

4531
07:14:53,590 --> 07:14:51,360
control houston 6 hours 13 minutes into

4532
07:14:55,350 --> 07:14:53,600
today's spacewalk by shane kimbrough and

4533
07:14:57,350 --> 07:14:55,360
tomorrow pesquet

4534
07:15:00,548 --> 07:14:57,360
mission accomplished with the second of

4535
07:15:01,830 --> 07:15:00,558
the new iss rollout solar arrays

4536
07:15:02,708 --> 07:15:01,840
having been

4537
07:15:06,310 --> 07:15:02,718
fully

4538
07:15:08,468 --> 07:15:06,320

unfurled and tensioned into place

4539

07:15:11,510 --> 07:15:08,478

now providing additional power for the

4540

07:15:13,830 --> 07:15:11,520

4b power channel on the p6 truss

4541

07:15:15,990 --> 07:15:13,840

of the international space station which

4542

07:15:18,548 --> 07:15:16,000

is currently crossing the border between

4543

07:15:20,948 --> 07:15:18,558

colorado and oklahoma

4544

07:15:22,350 --> 07:15:20,958

moving from northwest to southeast in an

4545

07:15:23,910 --> 07:15:22,360

orbit inclined

4546

07:15:26,310 --> 07:15:23,920

255

4547

07:15:27,750 --> 07:15:26,320

in an orbit incline 51.6 degrees to

4548

07:15:31,670 --> 07:15:27,760

either side of the equator at an

4549

07:15:34,468 --> 07:15:31,680

altitude of 255 miles

4550

07:15:37,270 --> 07:15:34,478

the two space walkers

4551
07:15:39,590 --> 07:15:37,280
executed today's activities in flawless

4552
07:15:41,430 --> 07:15:39,600
fashion all the hardware cooperated

4553
07:15:43,830 --> 07:15:41,440
their suits uh

4554
07:15:45,990 --> 07:15:43,840
behaved perfectly and everything has

4555
07:15:48,150 --> 07:15:46,000
fallen into place with two new solar

4556
07:15:50,948 --> 07:15:48,160
arrays now deployed

4557
07:15:51,990 --> 07:15:50,958
at the station two out of six the next

4558
07:15:54,070 --> 07:15:52,000
pair

4559
07:15:55,430 --> 07:15:54,080
that will be launched on a future spacex

4560
07:15:57,750 --> 07:15:55,440
cargo flight

4561
07:16:01,830 --> 07:15:57,760
will be designed to be installed on the

4562
07:16:04,948 --> 07:16:01,840
p4 the port 4 and starboard 4 trusses of

4563
07:16:07,030 --> 07:16:04,958

the station to augment power for the 4a

4564

07:16:12,468 --> 07:16:07,040

and 3a power channels on the

4565

07:16:16,310 --> 07:16:14,468

i'm jimmy i have my waste holder

4566

07:16:18,948 --> 07:16:16,320

connected to the air like waste turner

4567

07:16:24,390 --> 07:16:18,958

closed and locked on all four hooks

4568

07:16:24,400 --> 07:16:40,868

copy shane

4569

07:16:45,350 --> 07:16:43,110

and here in the flight control room the

4570

07:16:47,430 --> 07:16:45,360

electrical systems officer

4571

07:16:50,390 --> 07:16:47,440

who goes by the call sign of spartan

4572

07:16:51,910 --> 07:16:50,400

reports great power generation from both

4573

07:16:55,990 --> 07:16:51,920

the new and

4574

07:16:59,190 --> 07:16:56,000

old solar arrays on the p6 truss

4575

07:17:01,510 --> 07:16:59,200

everything has uh performed perfectly

4576

07:17:10,388 --> 07:17:01,520

to this point good power generation from

4577

07:17:15,670 --> 07:17:12,548

we're still talking about picking up

4578

07:17:17,270 --> 07:17:15,680

that apfr which is at the airlock the

4579

07:17:19,670 --> 07:17:17,280

one which is on the wifx and which is

4580

07:17:21,750 --> 07:17:19,680

sticky that's what's giving us pause on

4581

07:17:24,468 --> 07:17:21,760

your next step shane

4582

07:17:26,948 --> 07:17:24,478

so i will just put that to you see how

4583

07:17:29,190 --> 07:17:26,958

you guys feel understand tomah you still

4584

07:17:31,270 --> 07:17:29,200

need to pick up the crew lock bag

4585

07:17:35,990 --> 07:17:31,280

and you'll be bringing in the safety

4586

07:17:41,430 --> 07:17:39,270

i'm nowhere near yellow right now

4587

07:17:54,628 --> 07:17:41,440

i have time to do it i think i'll reach

4588

07:17:57,990 --> 07:17:56,230

shane my understanding is you should be

4589

07:17:59,350 --> 07:17:58,000

able to reach it because of the daisy

4590

07:18:11,830 --> 07:17:59,360

chain waste tethers but i'm getting a

4591

07:18:25,990 --> 07:18:12,830

i'm on the

4592

07:18:40,788 --> 07:18:30,708

it should

4593

07:18:40,798 --> 07:18:50,628

we appreciate it thanks

4594

07:18:54,468 --> 07:18:52,708

back with our downlink video capability

4595

07:18:58,310 --> 07:18:54,478

from the international space station

4596

07:19:01,430 --> 07:18:58,320

shane kimbrough doing some cleanup work

4597

07:19:04,548 --> 07:19:01,440

he and tomah pesquet now will begin the

4598

07:19:06,310 --> 07:19:04,558

process of gathering tools and tethers

4599

07:19:08,708 --> 07:19:06,320

other equipment used in today's

4600

07:19:11,190 --> 07:19:08,718

spacewalk as they slowly make their way

4601
07:19:13,750 --> 07:19:11,200
back toward the quest airlock

4602
07:19:15,430 --> 07:19:13,760
to wrap up today's excursion the third

4603
07:19:18,230 --> 07:19:15,440
in nine days

4604
07:19:20,230 --> 07:19:18,240
for this pair of space walkers

4605
07:19:22,230 --> 07:19:20,240
this was the ninth space walk out of the

4606
07:19:24,468 --> 07:19:22,240
international space station this year

4607
07:19:27,590 --> 07:19:24,478
the ninth in kimbrough's career

4608
07:19:29,110 --> 07:19:27,600
and the fifth for pesquet all of them

4609
07:19:31,910 --> 07:19:29,120
having been conducted with shane

4610
07:19:34,708 --> 07:19:31,920
kimbrough the first two spacewalks for

4611
07:19:42,548 --> 07:19:34,718
pesquet and

4612
07:19:46,788 --> 07:19:45,110
yeah i have a feather on the epf power

4613
07:19:50,070 --> 07:19:46,798

generator from the releaser and put it

4614

07:20:42,628 --> 07:19:51,910

hey firm shane we're just bringing that

4615

07:20:42,638 --> 07:20:53,990

key

4616

07:20:54,000 --> 07:21:10,070

come on

4617

07:21:10,080 --> 07:21:33,990

hmm

4618

07:21:37,830 --> 07:21:35,990

getting the

4619

07:21:41,030 --> 07:21:37,840

pfr is

4620

07:21:47,110 --> 07:21:41,040

headed to the lock

4621

07:22:05,270 --> 07:21:49,830

we got that thing in here for you

4622

07:22:09,430 --> 07:22:06,948

all right shannon i have confirmation

4623

07:22:13,750 --> 07:22:09,440

now that you have stowed that apfr you

4624

07:22:28,628 --> 07:22:16,230

hey jenny i'm in

4625

07:23:20,070 --> 07:22:31,110

shane you can turn off your heka if not

4626
07:23:43,210 --> 07:23:23,190
my br qs

4627
07:23:50,230 --> 07:23:45,670
[Music]

4628
07:23:54,788 --> 07:23:52,708
tomah on your way inboard make sure that

4629
07:23:57,510 --> 07:23:54,798
you press the inboard

4630
07:24:06,850 --> 07:23:57,520
seat of cart brake releases on both the

4631
07:24:06,860 --> 07:24:12,948
[Music]

4632
07:25:29,750 --> 07:24:15,910
a firm the inboard brake release pedal

4633
07:25:29,760 --> 07:26:01,030
my way under gmt

4634
07:26:01,040 --> 07:26:19,590
good i'm in there like i'm all good

4635
07:26:23,670 --> 07:26:21,830
all right

4636
07:26:27,110 --> 07:26:23,680
i'll go to the cardboard or the press

4637
07:26:27,120 --> 07:27:01,110
copy

4638
07:27:01,120 --> 07:27:13,280

your next steps are at your anchor hooks

4639

07:27:13,290 --> 07:27:19,510

[Applause]

4640

07:27:24,948 --> 07:27:21,990

and shane has a good load pass

4641

07:27:27,110 --> 07:27:24,958

to the airlock so on his go you can

4642

07:27:30,150 --> 07:27:27,120

remove his anchor hook

4643

07:27:32,388 --> 07:27:30,160

from handrail 3651

4644

07:27:34,388 --> 07:27:32,398

and attach it to your red wheel where

4645

07:27:39,670 --> 07:27:34,398

your green hook is attached or your

4646

07:27:51,180 --> 07:27:41,110

all right

4647

07:27:51,190 --> 07:28:02,548

[Music]

4648

07:28:12,948 --> 07:28:05,030

you can retrieve your anchor hook and

4649

07:28:17,110 --> 07:28:14,788

me my crew hope you don't know me or

4650

07:28:40,070 --> 07:28:17,120

something

4651
07:28:40,080 --> 07:29:00,788
hurry

4652
07:29:04,868 --> 07:29:02,868
regarding the scu there's no pressure to

4653
07:29:06,628 --> 07:29:04,878
get on it as our consumables are in good

4654
07:29:08,230 --> 07:29:06,638
shape and we just want to give you lots

4655
07:29:10,468 --> 07:29:08,240
of flexibility to maneuver in the

4656
07:29:13,830 --> 07:29:10,478
airlock with the apfr in there so it's

4657
07:29:31,030 --> 07:29:16,948
good job

4658
07:29:31,040 --> 07:30:07,270
my copy shane

4659
07:30:07,280 --> 07:30:46,940
coffee shane

4660
07:31:43,350 --> 07:30:48,388
[Music]

4661
07:31:47,350 --> 07:31:45,510
tamar we see you almost back at the

4662
07:32:05,190 --> 07:31:47,360
airlock you'll be handing in your crew

4663
07:32:05,200 --> 07:32:26,788

welcome back

4664

07:32:26,798 --> 07:32:31,990

sorry

4665

07:32:35,590 --> 07:32:33,110

i don't know

4666

07:32:37,670 --> 07:32:35,600

what tell me where to go

4667

07:32:39,270 --> 07:32:37,680

i can't hear what you say you want me to

4668

07:32:46,628 --> 07:32:39,280

go here you can get it

4669

07:32:46,638 --> 07:32:50,788

okay i'll release my vrt

4670

07:33:07,430 --> 07:32:52,868

i have the bag yeah and can you release

4671

07:33:11,990 --> 07:33:09,670

you can turn your heka off and ingress

4672

07:33:23,430 --> 07:33:12,000

the airlock when you do so verify the

4673

07:33:29,750 --> 07:33:26,948

all right others looks good

4674

07:33:31,670 --> 07:33:29,760

kicked in and engaged

4675

07:33:34,070 --> 07:33:31,680

the problem

4676
07:33:36,468 --> 07:33:34,080
welcome by nikka

4677
07:33:37,830 --> 07:33:36,478
now jenny that's uh why if i stay

4678
07:33:40,230 --> 07:33:37,840
outside or you won't need your greens

4679
07:33:46,628 --> 07:33:40,240
back here

4680
07:33:50,230 --> 07:33:48,868
shane i'm gonna ingress she can scoot as

4681
07:33:57,190 --> 07:33:50,240
much

4682
07:33:57,200 --> 07:34:12,388
kick the bag

4683
07:34:12,398 --> 07:34:27,900
uh

4684
07:34:31,910 --> 07:34:29,030
[Applause]

4685
07:34:52,628 --> 07:34:31,920
[Music]

4686
07:34:56,468 --> 07:34:54,868
tomorrow attach the hook to the magnetic

4687
07:34:58,948 --> 07:34:56,478
d ring

4688
07:35:03,510 --> 07:34:58,958

cinch the strap until snug and report

4689

07:35:03,520 --> 07:35:09,030

okay you work

4690

07:35:15,590 --> 07:35:10,708

and my legs change

4691

07:35:18,548 --> 07:35:16,468

all yeah

4692

07:35:26,150 --> 07:35:18,558

progress

4693

07:35:26,160 --> 07:36:19,990

first out

4694

07:36:20,000 --> 07:36:26,948

foreign

4695

07:36:31,350 --> 07:36:29,270

we need to check the clearance around

4696

07:36:32,708 --> 07:36:31,360

the thermal cover closure

4697

07:36:34,388 --> 07:36:32,718

we're tracking that there might be

4698

07:36:38,830 --> 07:36:34,398

something interfering with the magnets

4699

07:36:38,840 --> 07:36:53,500

this not available

4700

07:36:53,510 --> 07:36:59,030

[Music]

4701

07:37:04,628 --> 07:37:01,750

there is a strap which is just

4702

07:37:06,468 --> 07:37:04,638

outside could you pull that in

4703

07:37:09,110 --> 07:37:06,478

thank you you got it it's actually going

4704

07:37:11,830 --> 07:37:09,120

to strip up that earring

4705

07:37:14,070 --> 07:37:11,840

i'm going to change much to me if you

4706

07:37:21,670 --> 07:37:14,080

open

4707

07:37:21,680 --> 07:37:30,150

tonight you can connect to your fcu

4708

07:37:30,160 --> 07:37:33,510

where's my

4709

07:37:37,830 --> 07:37:34,708

hmm

4710

07:37:39,190 --> 07:37:37,840

right there

4711

07:37:41,990 --> 07:37:39,200

no

4712

07:37:54,468 --> 07:37:42,000

i think it's between my legs right here

4713

07:37:54,478 --> 07:38:29,750

okay

4714

07:38:35,590 --> 07:38:31,990

coffee with both of you on the scu a

4715

07:38:38,230 --> 07:38:35,600

note a tcv setting of 8 max cold

4716

07:38:41,830 --> 07:38:38,240

minimizes time for seu cooling

4717

07:38:51,990 --> 07:38:41,840

you can both switch water off forward

4718

07:38:55,750 --> 07:38:53,750

this is mission control houston six

4719

07:38:58,388 --> 07:38:55,760

hours 37 minutes the clock's still

4720

07:39:00,628 --> 07:38:58,398

running on today's spacewalk a view

4721

07:39:02,230 --> 07:39:00,638

inside the equipment lock section of the

4722

07:39:04,310 --> 07:39:02,240

quest airlock

4723

07:39:06,388 --> 07:39:04,320

as mark vande high

4724

07:39:09,350 --> 07:39:06,398

closest to the hatch and station

4725

07:39:11,830 --> 07:39:09,360

commander aki hoshide from the japan

4726
07:39:13,190 --> 07:39:11,840
aerospace exploration agency

4727
07:39:15,510 --> 07:39:13,200
await

4728
07:39:17,270 --> 07:39:15,520
the closing uh

4729
07:39:18,948 --> 07:39:17,280
of the hatch and the start of the

4730
07:39:20,788 --> 07:39:18,958
repressurization of the crew lock

4731
07:39:23,430 --> 07:39:20,798
section of quest that will mark the

4732
07:39:25,270 --> 07:39:23,440
official end of today's spacewalk our

4733
07:39:27,430 --> 07:39:25,280
coverage will continue

4734
07:39:29,350 --> 07:39:27,440
through the point at which

4735
07:39:32,708 --> 07:39:29,360
the crew is back inside the equipment

4736
07:39:34,708 --> 07:39:32,718
lock and their helmets are removed

4737
07:39:37,830 --> 07:39:34,718
everything has gone splendidly with

4738
07:39:39,510 --> 07:39:37,840

today's excursion the 241st

4739

07:39:42,070 --> 07:39:39,520

in the history of the international

4740

07:39:45,350 --> 07:39:42,080

space station

4741

07:39:47,510 --> 07:39:45,360

with the second of the new iss rollout

4742

07:39:48,788 --> 07:39:47,520

solar arrays having been installed and

4743

07:39:50,468 --> 07:39:48,798

unfurled

4744

07:39:52,468 --> 07:39:50,478

in perfect fashion

4745

07:39:54,948 --> 07:39:52,478

everything went like a charm

4746

07:39:56,388 --> 07:39:54,958

and both the first array that was

4747

07:39:58,388 --> 07:39:56,398

installed and deployed

4748

07:40:00,868 --> 07:39:58,398

on sunday and the second of these three

4749

07:40:03,830 --> 07:40:00,878

space walks by pesquet and kimbrough and

4750

07:40:05,270 --> 07:40:03,840

today's activities have produced two

4751
07:40:08,310 --> 07:40:05,280
healthy arrays

4752
07:40:10,548 --> 07:40:08,320
that are now generating 20 kilowatts of

4753
07:40:16,310 --> 07:40:10,558
power a piece to augment the power

4754
07:40:16,320 --> 07:40:28,708
thank you

4755
07:40:28,718 --> 07:40:56,468
oh

4756
07:41:01,590 --> 07:40:58,628
okay i'm tracking your two minute timer

4757
07:41:03,430 --> 07:41:01,600
is up so tomorrow verify the outer hatch

4758
07:41:08,150 --> 07:41:03,440
is clear of hardware and the handle

4759
07:41:12,708 --> 07:41:10,150
okay

4760
07:41:14,388 --> 07:41:12,718
i have some weird

4761
07:41:16,150 --> 07:41:14,398
hardware

4762
07:41:17,830 --> 07:41:16,160
and the handle is supposed to have to

4763
07:41:22,948 --> 07:41:17,840

kill

4764

07:41:22,958 --> 07:41:40,548

it works

4765

07:41:40,558 --> 07:42:35,750

thank you

4766

07:42:43,350 --> 07:42:39,110

copy hatch closed and locked shane on

4767

07:42:54,468 --> 07:42:43,360

the uia check oxygen for emu one and two

4768

07:43:00,708 --> 07:42:56,868

the hatch to the quest airlocks crew

4769

07:43:02,628 --> 07:43:00,718

lock section now cl is now closed

4770

07:43:04,150 --> 07:43:02,638

the uh two space walkers kimbrough and

4771

07:43:06,948 --> 07:43:04,160

pesquet on the other side of the

4772

07:43:08,948 --> 07:43:06,958

hatchway to the equipment block

4773

07:43:10,150 --> 07:43:08,958

mark vanda high now joined by megan

4774

07:43:12,628 --> 07:43:10,160

mcarthur

4775

07:43:15,110 --> 07:43:12,638

who uh drove the uh

4776
07:43:16,070 --> 07:43:15,120
canadarm2 robotic arm with pesquet at

4777
07:43:17,510 --> 07:43:16,080
the end

4778
07:43:21,030 --> 07:43:17,520
as he uh

4779
07:43:23,350 --> 07:43:21,040
carried the new iss solar array

4780
07:43:24,388 --> 07:43:23,360
the second of these two new rollout

4781
07:43:28,070 --> 07:43:24,398
arrays

4782
07:43:30,548 --> 07:43:28,080
to the p6 or port 6 truss worksite

4783
07:43:32,388 --> 07:43:30,558
where he and shane kimbrough worked to

4784
07:43:34,548 --> 07:43:32,398
structurally install

4785
07:43:36,708 --> 07:43:34,558
uh the new array onto a mounting bracket

4786
07:43:39,510 --> 07:43:36,718
at the base of the p6 truss

4787
07:43:41,910 --> 07:43:39,520
and then worked with bolts

4788
07:43:43,830 --> 07:43:41,920

and tensioning mechanisms to help

4789

07:43:46,150 --> 07:43:43,840

unfurl the array and get it fully

4790

07:43:47,910 --> 07:43:46,160

tensioned okay copy with that i will

4791

07:43:50,230 --> 07:43:47,920

hand you

4792

07:43:55,270 --> 07:43:50,240

back to your very capable suit ivs

4793

07:43:55,280 --> 07:43:58,708

you're awesome thanks everyone

4794

07:44:01,270 --> 07:44:00,388

all right gentlemen fantastic job we're

4795

07:44:03,110 --> 07:44:01,280

looking forward to getting you back

4796

07:44:34,388 --> 07:44:03,120

inside the next step to do that is go

4797

07:44:34,398 --> 07:44:49,030

hey

4798

07:44:53,510 --> 07:44:51,430

ev hatch mpev is closed

4799

07:44:56,628 --> 07:44:53,520

by marcus

4800

07:45:00,868 --> 07:44:58,388

i'm sorry tomorrow i think i copied you

4801
07:45:02,230 --> 07:45:00,878
said the o2 actuator is impressed for

4802
07:45:03,190 --> 07:45:02,240
you

4803
07:45:04,948 --> 07:45:03,200
good

4804
07:45:10,948 --> 07:45:04,958
okay now

4805
07:45:14,628 --> 07:45:13,190
okay uh i'm gonna start repressing uh

4806
07:45:15,830 --> 07:45:14,638
it's gonna be very loud for us we won't

4807
07:45:17,990 --> 07:45:15,840
hear you as well as you can talk to each

4808
07:45:19,510 --> 07:45:18,000
other so if you need me to stop give me

4809
07:45:20,708 --> 07:45:19,520
a closed fist in the window shane and

4810
07:45:22,150 --> 07:45:20,718
tomorrow you'll have to call shane if

4811
07:45:25,670 --> 07:45:22,160
you need that okay

4812
07:45:27,430 --> 07:45:25,680
from squeezing your feet like crazy okay

4813
07:45:41,590 --> 07:45:27,440

you can talk to me

4814

07:45:43,590 --> 07:45:42,628

we'll give you a warning before we get

4815

07:46:05,510 --> 07:45:43,600

to four again we'll tell you where we're

4816

07:46:09,270 --> 07:46:07,110

this is mission control houston the

4817

07:46:11,110 --> 07:46:09,280

repressurization of the quest airlock is

4818

07:46:14,868 --> 07:46:11,120

underway marking the official end of

4819

07:46:16,150 --> 07:46:14,878

today's spacewalk at six hours 45

4820

07:46:19,990 --> 07:46:16,160

minutes

4821

07:46:21,110 --> 07:46:20,000

the spacewalk ending at 1 37 pm central

4822

07:46:26,708 --> 07:46:21,120

time

4823

07:46:28,868 --> 07:46:26,718

repressurization of the quest airlocks

4824

07:46:30,628 --> 07:46:28,878

crew lock section underway

4825

07:46:32,788 --> 07:46:30,638

marking the official end of today's

4826
07:47:43,110 --> 07:46:32,798
spacewalk at six hours

4827
07:48:16,380 --> 07:47:45,030
all right gentlemen when we get to

4828
07:48:16,390 --> 07:48:23,750
[Applause]

4829
07:48:27,510 --> 07:48:25,430
okay we got to two

4830
07:48:29,750 --> 07:48:27,520
we got the five psi

4831
07:48:31,350 --> 07:48:29,760
the iv hatch equalization valve is now

4832
07:48:34,948 --> 07:48:31,360
off we're gonna wait for two minutes for

4833
07:48:37,670 --> 07:48:34,958
the crew lock pressure to stabilize

4834
07:50:40,150 --> 07:48:37,680
and you should expect an alert tone

4835
07:50:42,708 --> 07:50:41,750
all right gents we had our two minutes

4836
07:50:44,948 --> 07:50:42,718
for the crew

4837
07:50:46,150 --> 07:50:44,958
pressure to stabilize we're checking the

4838
07:50:47,270 --> 07:50:46,160

pressure right now we're gonna wait

4839

07:51:53,510 --> 07:50:47,280

another minute to make sure it doesn't

4840

07:52:00,230 --> 07:51:55,830

okay gents we had a good leak check

4841

07:52:02,230 --> 07:52:00,240

you can take your glove heaters to off

4842

07:52:04,230 --> 07:52:02,240

everyone josh baby too

4843

07:52:06,310 --> 07:52:04,240

thank you for contamination and report

4844

07:52:08,230 --> 07:52:06,320

to houston

4845

07:52:10,628 --> 07:52:08,240

all right you want to have no glove

4846

07:52:12,468 --> 07:52:10,638

contamination or good bloodholes

4847

07:52:14,310 --> 07:52:12,478

all around

4848

07:52:28,548 --> 07:52:14,320

you

4849

07:52:32,310 --> 07:52:30,310

this is mission control houston the

4850

07:52:34,548 --> 07:52:32,320

repressurization of the quest airlock is

4851
07:52:36,788 --> 07:52:34,558
continuing in good fashion

4852
07:52:39,830 --> 07:52:36,798
shane kimbrough and tomah pesquet safely

4853
07:52:42,388 --> 07:52:39,840
back inside following a six-hour

4854
07:52:44,788 --> 07:52:42,398
45-minute spacewalk today

4855
07:52:48,708 --> 07:52:44,798
to install and unfurl the second of the

4856
07:52:50,708 --> 07:52:48,718
two new iss roll out solar arrays we

4857
07:52:53,830 --> 07:52:50,718
have statistics for you

4858
07:52:57,590 --> 07:52:53,840
this was the 241st spacewalk in support

4859
07:52:59,670 --> 07:52:57,600
of iss assembly maintenance and upgrades

4860
07:53:03,030 --> 07:52:59,680
the ninth spacewalk conducted out of the

4861
07:53:05,910 --> 07:53:03,040
international space station this year

4862
07:53:07,590 --> 07:53:05,920
this was the ninth spacewalk in shane

4863
07:53:10,468 --> 07:53:07,600

kimbrough's career

4864

07:53:16,628 --> 07:53:10,478

he now has a total of 59 hours

4865

07:53:21,510 --> 07:53:19,430

which ties him for sixth on the all-time

4866

07:53:24,548 --> 07:53:21,520

list with russian cosmonaut fyodor

4867

07:53:29,590 --> 07:53:28,070

thomas pesquet now with five spacewalks

4868

07:53:32,070 --> 07:53:29,600

to his log

4869

07:53:34,708 --> 07:53:32,080

a total of 33 hours even of space

4870

07:53:38,788 --> 07:53:34,718

walking time

4871

07:53:41,708 --> 07:53:38,798

the 241 spacewalks in iss history

4872

07:53:45,190 --> 07:53:41,718

now have totaled one thousand

4873

07:53:47,270 --> 07:53:45,200

519 hours and 41 minutes

4874

07:53:50,468 --> 07:53:47,280

which is the equivalent

4875

07:54:03,030 --> 07:53:50,478

of 63 days 7 hours

4876

07:54:06,070 --> 07:54:03,910

and

4877

07:54:08,628 --> 07:54:06,080

we just received this photo from nasa

4878

07:54:11,270 --> 07:54:08,638

headquarters photographer joel kowsky

4879

07:54:14,310 --> 07:54:11,280

who shot the international space station

4880

07:54:17,110 --> 07:54:14,320

in transit across the sun

4881

07:54:19,030 --> 07:54:17,120

during the course of today's spacewalk a

4882

07:54:21,590 --> 07:54:19,040

dramatic view of the international space

4883

07:54:23,270 --> 07:54:21,600

station while shane kimbrough and thomas

4884

07:55:47,030 --> 07:54:23,280

pesquet were conducting their work

4885

07:55:52,230 --> 07:55:49,350

okay when the dpdt becomes approximately

4886

07:57:05,830 --> 07:55:52,240

zero you can expect an alert zone

4887

07:57:05,840 --> 07:57:18,708

foreign

4888

07:57:24,230 --> 07:57:21,190

the quest airlocks crew lock section now

4889

07:57:26,468 --> 07:57:24,240

has been repressurized we'll be standing

4890

07:57:28,230 --> 07:57:26,478

by for the opening of the hatch

4891

07:57:29,670 --> 07:57:28,240

and for megan macarthur and mark

4892

07:57:31,030 --> 07:57:29,680

vanderheid to

4893

07:57:33,190 --> 07:57:31,040

assist

4894

07:57:35,990 --> 07:57:33,200

shane kimbrough and tomah pesquet back

4895

07:57:39,190 --> 07:57:36,000

inside the equipment lock

4896

07:57:42,788 --> 07:57:39,200

again the spacewalk concluding

4897

07:58:02,470 --> 07:57:42,798

1 37 pm central time 2 37 pm eastern

4898

07:58:06,548 --> 07:58:04,628

[Applause]

4899

07:58:08,388 --> 07:58:06,558

houston airlock on space to round one

4900

07:58:10,788 --> 07:58:08,398

we're ready for your comrade config and

4901

07:58:12,548 --> 07:58:10,798

step four of closed cva

4902

07:58:37,750 --> 07:58:12,558

houston copies that is in work i'll call

4903

07:58:42,868 --> 07:58:39,830

shane kimbrough now back inside the

4904

07:59:40,548 --> 07:58:42,878

equipment lock with the hatch open

4905

07:59:50,310 --> 07:59:42,948

airlock houston space ground one crew is

4906

07:59:50,320 --> 08:12:34,548

next

4907

08:12:38,548 --> 08:12:36,548

this is mission control houston uh the

4908

08:12:41,430 --> 08:12:38,558

two space walkers shane kimbrough on the

4909

08:12:44,150 --> 08:12:41,440

left tomah pesquet on the right

4910

08:12:46,230 --> 08:12:44,160

have now had their helmets removed

4911

08:12:47,750 --> 08:12:46,240

safely back inside the equipment lock

4912

08:12:49,910 --> 08:12:47,760

section of quest

4913

08:12:52,310 --> 08:12:49,920

wrapping up a flawless six-hour

4914

08:12:55,430 --> 08:12:52,320

45-minute spacewalk in which

4915

08:12:58,708 --> 08:12:55,440

they installed and unfurled the second

4916

08:13:01,030 --> 08:12:58,718

of the two new iss rollout solar arrays

4917

08:13:02,868 --> 08:13:01,040

for the 4b power channel on the

4918

08:13:05,430 --> 08:13:02,878

international space station so over the

4919

08:13:06,388 --> 08:13:05,440

course of the past nine days

4920

08:13:07,510 --> 08:13:06,398

the

4921

08:13:10,388 --> 08:13:07,520

two uh

4922

08:13:12,788 --> 08:13:10,398

crew members from expedition 65

4923

08:13:15,270 --> 08:13:12,798

conducted three spacewalks

4924

08:13:17,670 --> 08:13:15,280

to install the first pair of what

4925

08:13:20,788 --> 08:13:17,680

ultimately will be six new solar arrays

4926
08:13:23,110 --> 08:13:20,798
to augment the station power capability

4927
08:13:33,350 --> 08:13:23,120
20 kilowatts a piece from each of these

4928
08:13:36,548 --> 08:13:35,190
with that we'll begin to wrap up our

4929
08:13:38,548 --> 08:13:36,558
coverage here with a couple of

4930
08:13:40,868 --> 08:13:38,558
programming notes

4931
08:13:42,388 --> 08:13:40,878
uh the end of today's spacewalk uh is

4932
08:13:44,310 --> 08:13:42,398
just the beginning

4933
08:13:45,910 --> 08:13:44,320
of a huge amount of work over the course

4934
08:13:48,070 --> 08:13:45,920
of the next several weeks aboard the

4935
08:13:50,868 --> 08:13:48,080
international space station

4936
08:13:53,590 --> 08:13:50,878
next up will be this coming tuesday june

4937
08:13:54,708 --> 08:13:53,600
29th a doubleheader on tap

4938
08:14:00,468 --> 08:13:54,718

the

4939

08:14:02,948 --> 08:14:00,478

cygnus cargo craft is scheduled to be

4940

08:14:05,030 --> 08:14:02,958

released by robotic ground controllers

4941

08:14:07,030 --> 08:14:05,040

here in mission control

4942

08:14:09,110 --> 08:14:07,040

with our nasa television coverage

4943

08:14:13,110 --> 08:14:09,120

beginning at noon eastern time this

4944

08:14:14,868 --> 08:14:13,120

coming tuesday the release time 12 25 pm

4945

08:14:17,510 --> 08:14:14,878

eastern time

4946

08:14:20,948 --> 08:14:17,520

cygnus will spend two days

4947

08:14:23,030 --> 08:14:20,958

transiting for a deorbit on the night of

4948

08:14:25,350 --> 08:14:23,040

july 1st

4949

08:14:27,270 --> 08:14:25,360

later that evening on tuesday june 29th

4950

08:14:29,270 --> 08:14:27,280

we'll carry live coverage

4951
08:14:30,708 --> 08:14:29,280
from the baikonur cosmodrome in

4952
08:14:33,510 --> 08:14:30,718
kazakhstan

4953
08:14:37,270 --> 08:14:33,520
of the launch of the unpiloted iss

4954
08:14:39,190 --> 08:14:37,280
progress 78 cargo craft by roscosmos

4955
08:14:42,310 --> 08:14:39,200
with our coverage beginning at 7 pm

4956
08:14:43,750 --> 08:14:42,320
eastern time a launch scheduled at 7 27

4957
08:14:46,788 --> 08:14:43,760
pm eastern

4958
08:14:48,388 --> 08:14:46,798
which will be 4 27 a.m baikonur time on

4959
08:14:51,670 --> 08:14:48,398
june 30th

4960
08:14:53,270 --> 08:14:51,680
that will lead to a 34 orbit uh transit

4961
08:14:55,350 --> 08:14:53,280
for the new

4962
08:14:58,230 --> 08:14:55,360
resupply ship that will be loaded with

4963
08:15:00,708 --> 08:14:58,240

almost two tons of food fuel and

4964

08:15:02,628 --> 08:15:00,718

supplies for the crew members aboard the

4965

08:15:05,270 --> 08:15:02,638

international space station and the

4966

08:15:07,590 --> 08:15:05,280

first ever docking buyer progress to the

4967

08:15:08,310 --> 08:15:07,600

poisk module on the space facing side of

4968

08:15:10,468 --> 08:15:08,320

the

4969

08:15:12,468 --> 08:15:10,478

international space station

4970

08:15:14,628 --> 08:15:12,478

docking is scheduled on thursday july

4971

08:15:16,548 --> 08:15:14,638

1st with our coverage beginning at 8 15

4972

08:15:19,110 --> 08:15:16,558

pm eastern time

4973

08:15:22,308 --> 08:15:19,120

link up the automated docking scheduled

4974

08:15:25,270 --> 08:15:22,318

903 pm eastern time all of that coming

4975

08:15:28,628 --> 08:15:25,280

up on nasa television this coming week

4976
08:15:31,110 --> 08:15:28,638
and we always urge you to follow all of

4977
08:15:33,030 --> 08:15:31,120
the activities for the crew members on

4978
08:15:38,150 --> 08:15:33,040
board the international space station on

4979
08:15:43,030 --> 08:15:40,070
so with that we'll conclude our coverage

4980
08:15:45,750 --> 08:15:43,040
today a six hour 45 minute space walk by

4981
08:15:49,750 --> 08:15:45,760
shane kimbrough and tomah pesquet

4982
08:15:52,628 --> 08:15:49,760
two new iss rollout solar arrays

4983
08:15:55,110 --> 08:15:52,638
now complementing the power capability

4984
08:15:57,590 --> 08:15:55,120
of the international outpost

4985
08:16:00,150 --> 08:15:57,600
with that uh we'll call it a day have a

4986
08:16:02,150 --> 08:16:00,160
great weekend and a safe weekend

4987
08:16:19,670 --> 08:16:02,160
all the best from us here at mission

4988
08:16:24,788 --> 08:16:22,948

well in my left hand i have a feather

4989

08:16:27,030 --> 08:16:24,798

and my right hand a hammer

4990

08:16:28,628 --> 08:16:27,040

and i guess one of the reasons uh we got

4991

08:16:31,190 --> 08:16:28,638

here today was because of a gentleman

4992

08:16:33,190 --> 08:16:31,200

named galileo a long time ago who made a

4993

08:16:35,750 --> 08:16:33,200

rather significant discovery

4994

08:16:37,350 --> 08:16:35,760

about falling objects in gravity fields

4995

08:16:39,030 --> 08:16:37,360

and we thought that

4996

08:16:41,750 --> 08:16:39,040

where would be a better place

4997

08:16:43,590 --> 08:16:41,760

to confirm his uh findings than

4998

08:16:45,510 --> 08:16:43,600

on the moon

4999

08:16:46,468 --> 08:16:45,520

and so we thought we'd try it here for

5000

08:16:48,230 --> 08:16:46,478

you

5001

08:16:51,430 --> 08:16:48,240

the feather happens to be appropriately

5002

08:17:02,220 --> 08:16:51,440

a falcon feather