



1
00:00:02,240 --> 00:00:14,789

[Music]

2
00:00:20,230 --> 00:00:16,550

don't turn ahead

3
00:00:25,429 --> 00:00:20,240

to see me right back little brown little

4
00:00:31,210 --> 00:00:28,790

what a beautiful morning

5
00:00:31,220 --> 00:00:40,229

[Music]

6
00:00:44,549 --> 00:00:42,389

good morning discovery

7
00:00:48,229 --> 00:00:44,559

and a special good morning to nicole

8
00:00:53,910 --> 00:00:51,189

good morning mike and a big hug and

9
00:00:56,069 --> 00:00:53,920

thanks to my family for that uh music

10
00:00:57,590 --> 00:00:56,079

selection this morning and a special

11
00:00:59,270 --> 00:00:57,600

thanks to our friend davey knowles for

12
00:01:00,389 --> 00:00:59,280

his rendition of that song it's one of

13
00:01:03,029 --> 00:01:00,399

my favorites

14

00:01:05,189 --> 00:01:03,039

and it is once again a beautiful morning

15

00:01:09,670 --> 00:01:05,199

here and space and we are looking

16

00:01:13,190 --> 00:01:11,429

this is mission control houston we're

17

00:01:15,590 --> 00:01:13,200

taking a live look inside the quest

18

00:01:17,350 --> 00:01:15,600

airlock is steve bowen and al drew get

19

00:01:20,789 --> 00:01:17,360

ready to do this first

20

00:01:22,070 --> 00:01:20,799

spacewalk of the sts-133 mission

21

00:01:23,910 --> 00:01:22,080

you can see paulo nesple there on the

22

00:01:25,830 --> 00:01:23,920

left and mike barrett there on the right

23

00:01:28,070 --> 00:01:25,840

helping bowen get

24

00:01:30,550 --> 00:01:28,080

secured into his suit

25

00:01:32,069 --> 00:01:30,560

the hatches are still closed and beside

26
00:01:34,149 --> 00:01:32,079
in between the quest airlock there and

27
00:01:37,350 --> 00:01:34,159
the rest of the station the pressure has

28
00:01:38,870 --> 00:01:37,360
been taken down to 10.2 psi

29
00:01:41,109 --> 00:01:38,880
after these guys get secured inside

30
00:01:42,630 --> 00:01:41,119
their spacesuits that is when uh

31
00:01:44,550 --> 00:01:42,640
they will uh the rest of the crew will

32
00:01:46,069 --> 00:01:44,560
move them over into the crew lock

33
00:01:48,710 --> 00:01:46,079
portion of quest

34
00:01:50,389 --> 00:01:48,720
and then another hatch will be closed

35
00:01:54,069 --> 00:01:50,399
and we'll get close to the spacewalk

36
00:01:59,109 --> 00:01:56,230
airlock houston big loop back with you

37
00:02:02,469 --> 00:01:59,119
after the gimbal swap did you call us

38
00:02:08,229 --> 00:02:02,479

yes we did is mr copra in the room

39

00:02:10,949 --> 00:02:09,749

sounds good mike i'm really looking

40

00:02:12,869 --> 00:02:10,959

forward to working with you guys we'll

41

00:02:15,190 --> 00:02:12,879

be sitting side saddle with stan and

42

00:02:16,550 --> 00:02:15,200

helping out where i can

43

00:02:18,550 --> 00:02:16,560

alright tim it's great to hear your

44

00:02:20,630 --> 00:02:18,560

voice and uh it's a big comfort knowing

45

00:02:23,190 --> 00:02:20,640

you're down there and watching over us

46

00:02:27,670 --> 00:02:23,200

it's my pleasure thanks dan

47

00:02:27,680 --> 00:02:31,589

we should be the other way around though

48

00:02:31,599 --> 00:02:35,110

you're a good man for the job

49

00:02:37,670 --> 00:02:36,470

hey i'm looking forward to seeing you

50

00:02:39,830 --> 00:02:37,680

outside for your first time you're going

51
00:02:44,550 --> 00:02:39,840
to do great today good deal all your

52
00:02:49,430 --> 00:02:46,309
the crew has opened the thermal cover on

53
00:02:53,690 --> 00:02:49,440
the quest airlock hatch

54
00:02:57,910 --> 00:02:55,110
[Music]

55
00:03:07,589 --> 00:02:57,920
a copy the hatch is open and stowed and

56
00:03:13,430 --> 00:03:11,350
okay nick i think my first bag is the uh

57
00:03:14,869 --> 00:03:13,440
get a head badge for steve

58
00:03:17,990 --> 00:03:14,879
that's correct

59
00:03:20,149 --> 00:03:18,000
get a head back okay nicole i have my

60
00:03:22,309 --> 00:03:20,159
large hook for my mini workstation to

61
00:03:25,750 --> 00:03:22,319
the forward d-ring

62
00:03:27,430 --> 00:03:25,760
uh get closed and locked

63
00:03:30,949 --> 00:03:27,440

and how about just one more check on the

64

00:03:33,430 --> 00:03:30,959

rail absolutely wheels unlocked

65

00:03:36,470 --> 00:03:33,440

want the whole set again nope absolutely

66

00:03:37,670 --> 00:03:36,480

not um and with that you are go to

67

00:03:39,270 --> 00:03:37,680

release your waist tether from the

68

00:03:42,309 --> 00:03:39,280

internal d-ring all right that's good

69

00:03:46,550 --> 00:03:44,070

steve bunn already outside the quest

70

00:03:54,229 --> 00:03:46,560

airlock aldrew still inside about to

71

00:03:58,390 --> 00:03:56,550

al drew slowly making his way outside of

72

00:03:59,509 --> 00:03:58,400

the quest airline for the first time he

73

00:04:02,789 --> 00:03:59,519

is

74

00:04:04,229 --> 00:04:02,799

feels like to

75

00:04:06,550 --> 00:04:04,239

do a real spacewalk outside the

76

00:04:07,750 --> 00:04:06,560

international space station

77

00:04:10,149 --> 00:04:07,760

we are going to go close the thermal

78

00:04:13,990 --> 00:04:11,670

if he takes a moment to look down below

79

00:04:15,750 --> 00:04:14,000

him he'll see the northeastern coast of

80

00:04:18,069 --> 00:04:15,760

south america and parts of the atlantic

81

00:04:19,670 --> 00:04:18,079

ocean

82

00:04:21,430 --> 00:04:19,680

station the shuttle heading up toward

83

00:04:25,850 --> 00:04:21,440

the western edge of africa and then up

84

00:04:28,629 --> 00:04:27,270

[Music]

85

00:04:30,070 --> 00:04:28,639

pick each other europe always back to

86

00:04:30,950 --> 00:04:30,080

their structure itself so you're good on

87

00:04:32,469 --> 00:04:30,960

that

88

00:04:34,230 --> 00:04:32,479

and you check the paper handles and they

89

00:04:35,590 --> 00:04:34,240

check your handles they're

90

00:04:37,430 --> 00:04:35,600

down after your

91

00:04:38,790 --> 00:04:37,440

right hand is down

92

00:04:40,150 --> 00:04:38,800

and just give me a twist to the left

93

00:04:42,550 --> 00:04:40,160

though

94

00:04:44,150 --> 00:04:42,560

your left hand is also down and i see

95

00:04:47,110 --> 00:04:44,160

you in a good configuration steve thank

96

00:04:51,670 --> 00:04:49,030

and we agree you're both looking great

97

00:04:53,670 --> 00:04:51,680

out there and al take a little time for

98

00:04:56,050 --> 00:04:53,680

some translation adaptation and see if

99

00:04:57,590 --> 00:04:56,060

we'll hang at the airlock okay

100

00:04:59,749 --> 00:04:57,600

[Music]

101
00:05:01,189 --> 00:04:59,759
if you like an interlock way out uh full

102
00:05:05,270 --> 00:05:01,199
way out type of thing here do a couple

103
00:05:10,150 --> 00:05:06,510
we're going to be moving over to the

104
00:05:11,670 --> 00:05:10,160
j612 extension cable tab steve you're

105
00:05:13,670 --> 00:05:11,680
going to translate directly there you'll

106
00:05:14,390 --> 00:05:13,680
be leading out and now you'll head over

107
00:05:18,390 --> 00:05:14,400
to

108
00:05:24,230 --> 00:05:18,400
lab handrail 237. 237.

109
00:05:27,830 --> 00:05:26,870
all right i've got the wire tie for the

110
00:05:30,790 --> 00:05:27,840
cable

111
00:05:33,909 --> 00:05:30,800
the j612

112
00:05:36,230 --> 00:05:33,919
and i'm ready to hand it over to al okay

113
00:05:37,430 --> 00:05:36,240

i'm ready to receive it let me get it

114

00:05:41,029 --> 00:05:37,440

off of my

115

00:05:44,469 --> 00:05:42,150

there goes

116

00:05:49,830 --> 00:05:47,590

and i have yeah thank you al

117

00:06:01,310 --> 00:05:49,840

all right nicole i think this

118

00:06:01,320 --> 00:06:04,950

[Music]

119

00:06:09,270 --> 00:06:06,150

you're on your way to the cedar card

120

00:06:13,749 --> 00:06:11,830

station houston big loop with j612

121

00:06:17,270 --> 00:06:13,759

complete and rpcm install complete we

122

00:06:19,110 --> 00:06:17,280

are re-powering z14 bravo

123

00:06:21,029 --> 00:06:19,120

this is mission control houston 54

124

00:06:22,629 --> 00:06:21,039

minutes and 27 seconds into today's

125

00:06:25,990 --> 00:06:22,639

spacewalk they have wrapped up the first

126

00:06:28,469 --> 00:06:26,000

major task the installation of this j612

127

00:06:29,990 --> 00:06:28,479

backup power cable between the unity and

128

00:06:32,150 --> 00:06:30,000

tranquility nodes

129

00:06:34,070 --> 00:06:32,160

the crew will now move to uh over to

130

00:06:35,270 --> 00:06:34,080

toward the station robotic arm to get

131

00:06:37,189 --> 00:06:35,280

that set up

132

00:06:38,950 --> 00:06:37,199

bowen will be on the end of that arm for

133

00:06:40,710 --> 00:06:38,960

part of today's activities

134

00:06:42,469 --> 00:06:40,720

i'd be happy while he's setting up that

135

00:06:45,350 --> 00:06:42,479

arm al drew is going to move over and

136

00:06:47,270 --> 00:06:45,360

get a tool that will be used on this

137

00:06:49,110 --> 00:06:47,280

failed ammonia pump

138

00:06:51,830 --> 00:06:49,120

later on during this mission to vent the

139

00:06:56,710 --> 00:06:51,840

remaining ammonia out of it

140

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

steve we showed you so in the

141

00:07:03,589 --> 00:07:00,880

socket caddy when you get there on the

142

00:07:09,350 --> 00:07:03,599

adjustable tether

143

00:07:09,360 --> 00:07:12,950

transferring the scoot to one of my

144

00:07:15,830 --> 00:07:14,629

rats so i can

145

00:07:20,150 --> 00:07:15,840

break it right off for another pump

146

00:07:24,469 --> 00:07:22,629

this is a look at uh drew

147

00:07:26,150 --> 00:07:24,479

as he works around the area of the uh

148

00:07:28,469 --> 00:07:26,160

cedar card it's a crew equipment

149

00:07:30,309 --> 00:07:28,479

translation aid cart

150

00:07:32,790 --> 00:07:30,319

there's an area where uh quite a bit of

151
00:07:35,430 --> 00:07:32,800
spacewalk equipment is located so he's

152
00:07:38,230 --> 00:07:35,440
gathering some uh spare parts and a uh

153
00:07:40,070 --> 00:07:38,240
what is called a vent tool extension bag

154
00:07:42,469 --> 00:07:40,080
and he's gonna be moving over to

155
00:08:00,629 --> 00:07:42,479
external stowage platform number two uh

156
00:08:04,550 --> 00:08:02,790
there's an up close view of steve bowen

157
00:08:07,749 --> 00:08:04,560
as he uh works toward the end of the

158
00:08:07,759 --> 00:08:14,469
and steve it'll be a question of 12.

159
00:08:14,479 --> 00:08:21,700
let's get it

160
00:08:21,710 --> 00:08:26,869
[Music]

161
00:08:32,149 --> 00:08:29,430
all right that looks like it's in there

162
00:08:33,990 --> 00:08:32,159
it's a good wiggle

163
00:08:36,870 --> 00:08:34,000

test

164

00:08:38,630 --> 00:08:36,880

and i gotta so 12 should be pointed

165

00:08:45,430 --> 00:08:38,640

at the end effector my toes will be

166

00:08:51,750 --> 00:08:46,550

and

167

00:08:58,630 --> 00:08:55,990

yep i got black on black thank you

168

00:08:59,990 --> 00:08:58,640

steve bowen is finishing up installing a

169

00:09:01,509 --> 00:09:00,000

portable foot restraint on the end of

170

00:09:03,990 --> 00:09:01,519

the station's arm that's what he will

171

00:09:07,269 --> 00:09:04,000

basically stand on

172

00:09:09,030 --> 00:09:07,279

as he gets flown by mike barrett and

173

00:09:11,030 --> 00:09:09,040

scott kelly

174

00:09:13,269 --> 00:09:11,040

coming up here in just a few minutes

175

00:09:15,110 --> 00:09:13,279

a major portion of this spacewalk today

176

00:09:18,150 --> 00:09:15,120

will be to retrieve

177

00:09:20,630 --> 00:09:18,160

that failed ammonia pump that

178

00:09:22,230 --> 00:09:20,640

fell last summer doug wheelock and tracy

179

00:09:23,990 --> 00:09:22,240

caldwell dyson had to go outside and

180

00:09:25,910 --> 00:09:24,000

swap it out

181

00:09:27,990 --> 00:09:25,920

with a spare

182

00:09:29,829 --> 00:09:28,000

and this bad pump has been sitting on

183

00:09:33,430 --> 00:09:29,839

the

184

00:09:35,590 --> 00:09:33,440

beside

185

00:09:36,710 --> 00:09:35,600

the station's arm for some number of

186

00:09:38,310 --> 00:09:36,720

months they're going to retrieve it and

187

00:09:39,590 --> 00:09:38,320

move it over to an external stowage

188

00:09:41,420 --> 00:09:39,600

platform

189

00:09:59,350 --> 00:09:41,430

coming up today

190

00:09:59,360 --> 00:10:04,550

okay five eight sockets installed

191

00:10:04,560 --> 00:10:30,480

copy that steve

192

00:10:30,490 --> 00:10:35,190

[Music]

193

00:10:40,630 --> 00:10:38,230

this is a view from aldrew's helmet cam

194

00:10:42,310 --> 00:10:40,640

he's moving around outside the station

195

00:10:44,310 --> 00:10:42,320

you can see some of those gap spanners

196

00:10:48,230 --> 00:10:44,320

there that the crew members use to move

197

00:10:48,240 --> 00:10:52,470

and see my gloves are clean

198

00:10:52,480 --> 00:11:01,829

okay thanks

199

00:11:06,310 --> 00:11:03,670

station discovery houston on the big

200

00:11:08,389 --> 00:11:06,320

loop good news and kudos to both crews

201
00:11:11,350 --> 00:11:08,399
the new rpcm is powered and healthy and

202
00:11:12,870 --> 00:11:11,360
we see good power draw on the j612 cable

203
00:11:21,829 --> 00:11:12,880
but good to hear this dude let's

204
00:11:24,710 --> 00:11:23,350
steve boner getting the view of a

205
00:11:26,389 --> 00:11:24,720
lifetime down at the earth below in the

206
00:11:37,190 --> 00:11:26,399
entire international space station

207
00:11:39,990 --> 00:11:39,110
feeling good out there you're standing

208
00:11:42,069 --> 00:11:40,000
and stretching you know you're gonna

209
00:11:45,750 --> 00:11:42,079
wake up sometimes

210
00:11:51,910 --> 00:11:47,269
that coffee ought to be kicking in any

211
00:11:56,710 --> 00:11:54,550
if i decided that htv and atv are both

212
00:12:00,470 --> 00:11:56,720
big

213
00:12:04,389 --> 00:12:02,230

you probably see most everything from

214

00:12:05,990 --> 00:12:04,399

that vantage point can't you i did i got

215

00:12:10,629 --> 00:12:06,000

a good view there for a while i can see

216

00:12:14,069 --> 00:12:12,550

bag behind bowen in this view is shuttle

217

00:12:16,150 --> 00:12:14,079

discovery which you can obviously see

218

00:12:17,269 --> 00:12:16,160

there the nose of the orbiter down below

219

00:12:21,030 --> 00:12:17,279

him is

220

00:12:23,030 --> 00:12:21,040

a japanese htv cargo craft

221

00:12:47,590 --> 00:12:23,040

you can also see the columbus laboratory

222

00:12:47,600 --> 00:13:01,190

maneuvers

223

00:13:01,200 --> 00:13:06,470

houston discovery

224

00:13:10,230 --> 00:13:08,230

go ahead nicole

225

00:13:12,550 --> 00:13:10,240

yeah stan how'd you like that uh the

226

00:13:19,030 --> 00:13:12,560

pointing of the nozzle um should be able

227

00:13:22,470 --> 00:13:20,710

we thought looks great uh we're

228

00:13:24,389 --> 00:13:22,480

wondering if we could get a protest just

229

00:13:27,190 --> 00:13:24,399

to make sure it's secure

230

00:13:28,790 --> 00:13:27,200

okay copy that copy we'll be momentarily

231

00:13:30,470 --> 00:13:28,800

nicole thanks

232

00:13:32,710 --> 00:13:30,480

this is mission control houston one hour

233

00:13:35,269 --> 00:13:32,720

47 minutes into today's spacewalk as you

234

00:13:38,470 --> 00:13:35,279

can see al drew has that

235

00:13:41,030 --> 00:13:38,480

vent tool extension mounted there close

236

00:13:43,189 --> 00:13:41,040

to the destiny laboratory

237

00:13:45,430 --> 00:13:43,199

this will allow the ground teams and the

238

00:13:48,389 --> 00:13:45,440

expedition 26 crew to vent the remaining

239

00:13:50,949 --> 00:13:48,399

ammonia that is inside that failed pump

240

00:13:52,550 --> 00:13:50,959

out over the coming days

241

00:13:58,150 --> 00:13:52,560

after it gets stowed over on external

242

00:14:01,910 --> 00:14:00,389

facing houston on one for robotics it

243

00:14:03,590 --> 00:14:01,920

looks like we've lost the cupola

244

00:14:05,750 --> 00:14:03,600

workstation due to a calm dropout with

245

00:14:08,629 --> 00:14:05,760

the cnc mdm we're working it we'll get

246

00:14:12,310 --> 00:14:08,639

you more words as soon as we can

247

00:14:16,790 --> 00:14:13,910

mike it'll take us about 30 minutes to

248

00:14:18,870 --> 00:14:16,800

recover the cooper rws

249

00:14:20,629 --> 00:14:18,880

we can get the lab active in one command

250

00:14:23,350 --> 00:14:20,639

but you'll have to move shop which

251

00:14:25,269 --> 00:14:23,360

option do you like

252

00:14:27,670 --> 00:14:25,279

for today we're not that dependent on

253

00:14:38,790 --> 00:14:27,680

direct views so let's go ahead and move

254

00:14:49,590 --> 00:14:40,710

[Music]

255

00:14:49,600 --> 00:15:10,629

crazy

256

00:15:17,670 --> 00:15:14,069

any connection okay come on down just a

257

00:15:22,790 --> 00:15:19,269

and maybe go out a little bit to your

258

00:15:27,829 --> 00:15:25,110

going into the mli

259

00:15:30,550 --> 00:15:27,839

got a little bit more to the left

260

00:15:34,629 --> 00:15:30,560

there you go you got it

261

00:15:50,629 --> 00:15:35,910

okay you're coming up on the guys here

262

00:15:50,639 --> 00:16:07,490

continue on

263

00:16:19,430 --> 00:16:14,120

[Music]

264

00:16:22,949 --> 00:16:20,790

that's three inches

265

00:16:28,470 --> 00:16:22,959

and you can stop motion stop motion and

266

00:16:32,389 --> 00:16:30,069

okay count tests are complete on the

267

00:16:35,670 --> 00:16:33,670

pgt

268

00:16:41,430 --> 00:16:35,680

ready for settings

269

00:16:46,150 --> 00:16:42,710

all right you're going to release the

270

00:17:03,030 --> 00:16:46,160

atb bolt two to four turns

271

00:17:08,630 --> 00:17:06,230

two white lines visible once you do that

272

00:17:11,590 --> 00:17:10,230

i'll give that about a shake would you

273

00:17:14,230 --> 00:17:11,600

stop that there

274

00:17:15,350 --> 00:17:14,240

put the hand out give it a shake

275

00:17:24,949 --> 00:17:15,360

they're red

276

00:17:27,990 --> 00:17:26,549

this is al drew's helmet cam this is the

277

00:17:29,669 --> 00:17:28,000

one that has a 20 at the bottom right

278

00:17:32,230 --> 00:17:29,679

hand side steve bowens is the one that

279

00:17:33,830 --> 00:17:32,240

has a 19 at the bottom right hand side

280

00:17:35,430 --> 00:17:33,840

which you see there

281

00:17:37,669 --> 00:17:35,440

there's a series of bolts that the two

282

00:17:38,630 --> 00:17:37,679

astronauts have to drive down to get

283

00:17:41,350 --> 00:17:38,640

this

284

00:17:43,510 --> 00:17:41,360

uh failed ammonia pump module

285

00:17:46,630 --> 00:17:43,520

secured back into it's a thermal cover

286

00:17:47,990 --> 00:17:46,640

there on that stowage platform

287

00:17:50,150 --> 00:17:48,000

and then you're going to rotate that guy

288

00:17:51,510 --> 00:17:50,160

down to temps though

289

00:17:53,110 --> 00:17:51,520

there you go

290

00:17:54,470 --> 00:17:53,120

okay

291

00:17:55,750 --> 00:17:54,480

in this view you can see steve bowen

292

00:17:56,630 --> 00:17:55,760

there on the left he's the one that is

293

00:17:59,029 --> 00:17:56,640

uh

294

00:18:00,470 --> 00:17:59,039

standing on the station's robotic arm

295

00:18:02,150 --> 00:18:00,480

he's the one that's got the red stripes

296

00:18:03,430 --> 00:18:02,160

on his pants

297

00:18:05,110 --> 00:18:03,440

al drew is what they call the free

298

00:18:06,620 --> 00:18:05,120

floater he's back there at the top

299

00:18:09,750 --> 00:18:06,630

left-hand portion of your screen

300

00:18:11,590 --> 00:18:09,760

[Music]

301

00:18:14,549 --> 00:18:11,600

and i've also picked up my

302

00:18:15,990 --> 00:18:14,559

ratchet wrench with palm wheel

303

00:18:18,390 --> 00:18:16,000

excellent thank you very much and you'll

304

00:18:19,830 --> 00:18:18,400

be going down to the fhrc next yeah i'm

305

00:18:21,350 --> 00:18:19,840

going to stay high until speed is done

306

00:18:22,789 --> 00:18:21,360

with the food position

307

00:18:31,790 --> 00:18:22,799

very good

308

00:18:31,800 --> 00:18:40,950

[Music]

309

00:18:47,270 --> 00:18:45,510

ramping out gta complete eca complete

310

00:18:48,070 --> 00:18:47,280

here you go out and move into position

311

00:19:03,430 --> 00:18:48,080

in

312

00:19:04,710 --> 00:19:03,440

and copy pca complete and al you're

313

00:19:08,310 --> 00:19:04,720

moving down in there the first thing

314

00:19:28,310 --> 00:19:08,320

we'll do to uncover the um mri flaps on

315

00:19:31,590 --> 00:19:29,909

steve bowen and al drew getting a good

316

00:19:33,590 --> 00:19:31,600

view of the caribbean ocean there and

317

00:19:35,430 --> 00:19:33,600

heading out toward the atlantic as the

318

00:19:38,870 --> 00:19:35,440

station and the shuttle travel 220 miles

319

00:19:41,350 --> 00:19:40,070

there's a good shot of steve bowen there

320

00:19:43,669 --> 00:19:41,360

in the center of the camera he's the one

321

00:19:45,029 --> 00:19:43,679

that has the red stripes on his pants al

322

00:19:47,270 --> 00:19:45,039

drew there to the left he's in the

323

00:19:50,310 --> 00:19:47,280

all-white suit beautiful you can now

324

00:19:52,470 --> 00:19:50,320

retrieve your wet and adjustable tether

325

00:19:55,750 --> 00:19:52,480

and throw those on your mini workstation

326

00:19:58,390 --> 00:19:56,710

okay

327

00:20:02,149 --> 00:19:58,400

if you're ready i'm ready to proceed to

328

00:20:06,950 --> 00:20:04,710

i am ready

329

00:20:08,390 --> 00:20:06,960

okay mike

330

00:20:10,390 --> 00:20:08,400

i'm ready to proceed to the back out

331

00:20:12,630 --> 00:20:10,400

position okay copy that we're going to

332

00:20:17,750 --> 00:20:12,640

start out station forward and uh look at

333

00:20:22,310 --> 00:20:20,710

and houston discovery eda

334

00:20:24,310 --> 00:20:22,320

go ahead nicole

335

00:20:25,510 --> 00:20:24,320

yep steve has the flap closed it looks

336

00:20:28,070 --> 00:20:25,520

like everything that's important is

337

00:20:28,080 --> 00:20:36,870

we copy and conclude

338

00:20:40,470 --> 00:20:37,990

okay and i'm going to go along the

339

00:20:41,669 --> 00:20:40,480

native face here

340

00:20:42,789 --> 00:20:41,679

now let me just check and make sure

341

00:20:43,990 --> 00:20:42,799

everything's configured for you to be

342

00:20:46,630 --> 00:20:44,000

able to do that all the way houston

343

00:20:48,789 --> 00:20:46,640

discovery eva

344

00:20:49,909 --> 00:20:48,799

and uh go ahead nicole

345

00:20:51,350 --> 00:20:49,919

yeah i just want to make sure

346

00:20:52,950 --> 00:20:51,360

everything's configured so that al can

347

00:20:55,190 --> 00:20:52,960

just translate out all the way and later

348

00:21:00,310 --> 00:20:56,870

and uh that's confirmed now all inhibits

349

00:21:02,549 --> 00:21:00,320

are in place and al is clear to go

350

00:21:03,510 --> 00:21:02,559

this space station camera view shows us

351

00:21:06,870 --> 00:21:03,520

uh

352

00:21:09,350 --> 00:21:06,880

elc 4 newly installed on the nader side

353

00:21:11,750 --> 00:21:09,360

of the starboard truss and the space

354

00:21:13,830 --> 00:21:11,760

station's robotic arm which is moved out

355

00:21:16,230 --> 00:21:13,840

of the way just in the upper edge of the

356

00:21:19,110 --> 00:21:16,240

frame you can see the space walkers

357

00:21:21,190 --> 00:21:19,120

translating out to near that elc 4

358

00:21:23,510 --> 00:21:21,200

that's where they'll be installing a

359

00:21:27,110 --> 00:21:23,520

wedge on a camera platform in order to

360

00:21:30,230 --> 00:21:27,120

tilt that uh tamer stanchion away from

361

00:21:35,670 --> 00:21:30,240

the new spare parts platform to provide

362

00:21:44,070 --> 00:21:37,029

[Music]

363

00:21:48,149 --> 00:21:45,430

you're going to want it in that i'm sure

364

00:21:51,750 --> 00:21:48,159

you know in that 90 degree yeah yeah you

365

00:22:00,220 --> 00:21:51,760

see it in your wbs too it's unlocked

366

00:22:08,630 --> 00:22:02,640

[Music]

367

00:22:17,190 --> 00:22:10,710

all right

368

00:22:20,950 --> 00:22:19,510

[Music]

369

00:22:23,110 --> 00:22:20,960

can't get it

370

00:22:25,190 --> 00:22:23,120

coming i mean no

371

00:22:33,280 --> 00:22:25,200

no i need to play a couple more

372

00:22:37,510 --> 00:22:35,029

[Music]

373

00:22:38,710 --> 00:22:37,520

it's definitely

374

00:22:40,230 --> 00:22:38,720

[Music]

375

00:22:41,430 --> 00:22:40,240

there it goes so

376
00:22:42,950 --> 00:22:41,440
i have it

377
00:22:45,310 --> 00:22:42,960
okay you have it

378
00:22:47,930 --> 00:22:45,320
okay i watched my witch

379
00:22:51,270 --> 00:22:47,940
[Music]

380
00:22:55,750 --> 00:22:53,750
it's al drew who has is a back to this

381
00:22:57,909 --> 00:22:55,760
camera steve bowen on the other side and

382
00:22:59,990 --> 00:22:57,919
you can see the camera stanchion

383
00:23:01,590 --> 00:23:00,000
sticking out between the two of them

384
00:23:04,310 --> 00:23:01,600
they've already

385
00:23:06,710 --> 00:23:04,320
removed the stanchion from the truss and

386
00:23:08,950 --> 00:23:06,720
installed the camera wedge and now drew

387
00:23:12,149 --> 00:23:08,960
is now driving the bolt to reinstall the

388
00:23:16,390 --> 00:23:12,159

stanchion on top of that wedge

389

00:23:16,400 --> 00:23:20,789

and from houston

390

00:23:25,270 --> 00:23:22,870

i don't see any chat

391

00:23:26,789 --> 00:23:25,280

okay it looks like it's on there

392

00:23:27,830 --> 00:23:26,799

coming out of here make sure our killers

393

00:23:28,549 --> 00:23:27,840

are all

394

00:23:30,630 --> 00:23:28,559

right

395

00:23:33,110 --> 00:23:30,640

i totally agree

396

00:23:34,549 --> 00:23:33,120

me too i'm taking my red off as

397

00:23:37,330 --> 00:23:34,559

expansion i think you got it on there

398

00:23:39,510 --> 00:23:37,340

pretty good

399

00:23:41,590 --> 00:23:39,520

[Music]

400

00:23:42,950 --> 00:23:41,600

all right you guys i know uh um there's

401
00:23:49,190 --> 00:23:42,960
more important things to do but we want

402
00:23:49,200 --> 00:23:55,110
okay okay

403
00:24:00,710 --> 00:23:56,549
maybe not if you see the rest of the

404
00:24:14,549 --> 00:24:02,149
okay you see where i'm pointing right up

405
00:24:14,559 --> 00:24:23,590
back to work

406
00:24:28,390 --> 00:24:26,230
and houston discovery for eda with that

407
00:24:29,350 --> 00:24:28,400
the success of this task and the wedge

408
00:24:31,510 --> 00:24:29,360
um

409
00:24:34,230 --> 00:24:31,520
i think it might be nice to mention

410
00:24:38,870 --> 00:24:34,240
boris b and his team the wedge team

411
00:24:44,149 --> 00:24:40,149
good words we'll make sure they get

412
00:24:47,830 --> 00:24:45,909
camera view now coming from the

413
00:24:49,990 --> 00:24:47,840

international space station

414

00:24:52,149 --> 00:24:50,000

from the camera out on the starboard

415

00:24:53,510 --> 00:24:52,159

side of the truss uh showing that the

416

00:24:57,029 --> 00:24:53,520

camera that's

417

00:24:59,350 --> 00:24:57,039

just was uh had a wedge installed to uh

418

00:25:00,470 --> 00:24:59,360

can't the uh camera stanchion away from

419

00:25:06,789 --> 00:25:00,480

the new

420

00:25:07,590 --> 00:25:06,799

is sending pictures and as we can see

421

00:25:09,190 --> 00:25:07,600

here

422

00:25:14,070 --> 00:25:09,200

is uh still

423

00:25:19,350 --> 00:25:16,470

the next task on the space walk which is

424

00:25:21,430 --> 00:25:19,360

known as the cedar rail stub

425

00:25:24,870 --> 00:25:21,440

installation

426

00:25:29,029 --> 00:25:24,880

both bowen and drew are translating

427

00:25:32,390 --> 00:25:29,039

onto the s3 truss

428

00:25:34,630 --> 00:25:32,400

out to where the s3 intersects with the

429

00:25:35,909 --> 00:25:34,640

s4 truss and the solar alpha rotary

430

00:25:38,390 --> 00:25:35,919

joint

431

00:25:41,510 --> 00:25:38,400

they're going to be installing

432

00:25:44,070 --> 00:25:41,520

short extensions on both of the rails on

433

00:25:46,149 --> 00:25:44,080

the s3 side of that interface

434

00:25:49,110 --> 00:25:46,159

which will allow the mobile transporter

435

00:25:52,310 --> 00:25:49,120

which can carry the mobile base system

436

00:25:54,549 --> 00:25:52,320

and it carrying the arm

437

00:25:55,510 --> 00:25:54,559

can be extended out to the fullest

438

00:25:57,750 --> 00:25:55,520

extent

439

00:26:00,149 --> 00:25:57,760

on that side of the truss which will

440

00:26:02,390 --> 00:26:00,159

accommodate additional uh

441

00:26:04,710 --> 00:26:02,400

we'll expand the envelope area of work

442

00:26:15,029 --> 00:26:04,720

that can be done by those tools out on

443

00:26:15,039 --> 00:26:18,789

yeah message in the bottom

444

00:26:23,590 --> 00:26:21,269

and stand by now uh houston if you agree

445

00:26:25,590 --> 00:26:23,600

we're gonna um let steve finish up the

446

00:26:29,750 --> 00:26:25,600

whip extender task and then head back to

447

00:26:34,630 --> 00:26:31,670

you're not going to sing

448

00:26:42,990 --> 00:26:34,640

[Music]

449

00:26:43,000 --> 00:26:54,370

[Applause]

450

00:26:54,380 --> 00:27:03,830

[Music]

451
00:27:08,710 --> 00:27:06,470
and we were listening to uh

452
00:27:10,470 --> 00:27:08,720
the accompaniment from the space station

453
00:27:12,630 --> 00:27:10,480
the crew playing the song from the

454
00:27:14,390 --> 00:27:12,640
police message in a bottle

455
00:27:16,950 --> 00:27:14,400
that'll be the final task for the space

456
00:27:19,590 --> 00:27:16,960
walk today as steve bowen and al drew

457
00:27:22,710 --> 00:27:19,600
take part in a an activity sponsored by

458
00:27:24,389 --> 00:27:22,720
the japan aerospace exploration agency

459
00:27:27,269 --> 00:27:24,399
they will

460
00:27:29,430 --> 00:27:27,279
retrieve a metal cylinder from the air

461
00:27:30,470 --> 00:27:29,440
lock they'll open it to fill that

462
00:27:33,110 --> 00:27:30,480
cylinder

463
00:27:35,029 --> 00:27:33,120

with the vacuum of space

464

00:27:35,990 --> 00:27:35,039

and then bring it back home where it

465

00:27:37,269 --> 00:27:36,000

will be

466

00:27:47,269 --> 00:27:37,279

returned to the ground for public

467

00:27:51,029 --> 00:27:49,269

that's steve bowen in the center of this

468

00:27:53,269 --> 00:27:51,039

camera view uh i'll give you one thing

469

00:27:55,350 --> 00:27:53,279

to get himself stabilized

470

00:27:57,750 --> 00:27:55,360

with the camera to

471

00:27:59,669 --> 00:27:57,760

get close-up pictures of al drew on the

472

00:28:01,290 --> 00:27:59,679

right as he performs the message in a

473

00:28:09,370 --> 00:28:01,300

bottle activity

474

00:28:09,380 --> 00:28:12,789

[Music]

475

00:28:18,230 --> 00:28:15,430

and now from al drew's helmet camera you

476
00:28:21,190 --> 00:28:18,240
can see in the lower right hand corner

477
00:28:33,750 --> 00:28:21,200
his right hand is holding the bottle

478
00:28:42,230 --> 00:28:35,350
okay

479
00:28:42,240 --> 00:28:45,880
that's a good all right

480
00:29:00,950 --> 00:28:51,350
[Music]

481
00:29:05,269 --> 00:29:02,950
all right it's

482
00:29:07,590 --> 00:29:05,279
closed and locked

483
00:29:09,430 --> 00:29:07,600
okay copy that you guys did an excellent

484
00:29:11,909 --> 00:29:09,440
job today you rock and i'm going to hand

485
00:29:13,269 --> 00:29:11,919
you over to the very capable hands of dr

486
00:29:15,740 --> 00:29:13,279
barrett

487
00:29:18,790 --> 00:29:15,750
and discovery houston

488
00:29:25,029 --> 00:29:18,800

[Applause]

489

00:29:29,110 --> 00:29:27,350

completing a foreign eba and now

490

00:29:32,789 --> 00:29:29,120

congratulations for stellar job on your

491

00:29:37,990 --> 00:29:33,840

thank you

492

00:29:41,750 --> 00:29:39,350

all right guys

493

00:29:43,909 --> 00:29:41,760

welcome back in stellar job the elephant

494

00:29:45,750 --> 00:29:43,919

welcome to the club of those who work in

495

00:29:47,269 --> 00:29:45,760

a vacuum and uh we're gonna start by

496

00:29:48,310 --> 00:29:47,279

verifying some of the stuff we've

497

00:29:55,269 --> 00:29:48,320

already done

498

00:29:57,990 --> 00:29:56,870

all right scott uh we just wanted to let

499

00:29:59,990 --> 00:29:58,000

you know

500

00:30:02,549 --> 00:30:00,000

that uh for the mission plan your plus

501

00:30:04,149 --> 00:30:02,559

one doctor today is approved

502

00:30:06,470 --> 00:30:04,159

uh the focus of that will be pnm

503

00:30:08,389 --> 00:30:06,480

outfitting we are still awaiting a

504

00:30:10,149 --> 00:30:08,399

formal decision on the fly around

505

00:30:13,750 --> 00:30:10,159

we expect that to come out of the friday

506

00:30:15,190 --> 00:30:13,760

6 mission management team meeting

507

00:30:17,590 --> 00:30:15,200

good copy and we're going to set up an

508

00:30:22,340 --> 00:30:17,600

overview timeline for the extension day