



1
00:00:28,790 --> 00:00:04,230
hi i'm george zamka sts-130 commander

2
00:00:33,670 --> 00:00:30,310
this is shuttle launch control at t

3
00:00:35,270 --> 00:00:33,680
minus three hours and holding

4
00:00:36,310 --> 00:00:35,280
launch teams are not working any issues

5
00:00:39,350 --> 00:00:36,320
right now that would prevent us from

6
00:00:46,470 --> 00:00:39,360
launching on time this morning

7
00:00:46,480 --> 00:01:00,470
good everybody

8
00:01:04,710 --> 00:01:01,910
this is shuttle launch control at t

9
00:01:05,750 --> 00:01:04,720
minus 2 hours 33 minutes and 10 seconds

10
00:01:07,590 --> 00:01:05,760
and counting

11
00:01:09,030 --> 00:01:07,600
you can see the

12
00:01:11,670 --> 00:01:09,040
six astronauts for space shuttle

13
00:01:13,750 --> 00:01:11,680

endeavour's sts-130 mission

14

00:01:15,030 --> 00:01:13,760

have arrived at the 195 foot level on

15

00:01:17,190 --> 00:01:15,040

the fixed service structure at launch

16

00:01:19,109 --> 00:01:17,200

pad 39a and they are

17

00:01:22,390 --> 00:01:19,119

making their way

18

00:01:23,990 --> 00:01:22,400

george zampa getting into his

19

00:01:25,350 --> 00:01:24,000

commander position on the left-hand side

20

00:01:28,710 --> 00:01:25,360

of

21

00:01:34,550 --> 00:01:31,590

and terry verts and uh both uh

22

00:01:37,749 --> 00:01:36,230

and see they shook hands because uh

23

00:01:39,030 --> 00:01:37,759

one's going to flight deck one going to

24

00:01:41,030 --> 00:01:39,040

mid deck so they won't speak to each

25

00:02:23,030 --> 00:01:41,040

other until directly until i guess they

26

00:02:27,430 --> 00:02:24,790

and attention all personnel this is the

27

00:02:29,510 --> 00:02:27,440

mtd conducting the launch status check

28

00:02:34,150 --> 00:02:29,520

verify ready to resume count and go for

29

00:02:37,430 --> 00:02:34,160

launch otc otc scale tbc dbc is good ptc

30

00:02:39,509 --> 00:02:37,440

ptc's go lps lps let's go houston flight

31

00:02:41,030 --> 00:02:39,519

houston flight is go

32

00:02:43,750 --> 00:02:41,040

endeavor launch director air to ground

33

00:02:46,790 --> 00:02:45,830

sports director this is endeavor go

34

00:02:48,470 --> 00:02:46,800

ahead sir

35

00:02:50,229 --> 00:02:48,480

okay zambo looks like the weather came

36

00:02:52,150 --> 00:02:50,239

together tonight vehicle's in great

37

00:02:53,430 --> 00:02:52,160

shape so it's time to go fly wish you

38

00:02:57,030 --> 00:02:53,440

good luck godspeed and we'll see you

39

00:03:01,110 --> 00:02:58,869

yeah thanks mike and thanks to the great

40

00:03:02,630 --> 00:03:01,120

team that got tranquility cupola and

41

00:03:04,390 --> 00:03:02,640

endeavored at this point

42

00:03:05,509 --> 00:03:04,400

and thanks also to the team that got us

43

00:03:08,470 --> 00:03:05,519

ready to bring

44

00:03:09,830 --> 00:03:08,480

note 3 and kupatas to life and we'll see

45

00:03:25,830 --> 00:03:09,840

you in a couple weeks it's time to go

46

00:03:31,830 --> 00:03:27,430

20

47

00:03:39,350 --> 00:03:33,990

t-minus 16 seconds the sound suppression

48

00:03:41,110 --> 00:03:40,229

nine

49

00:03:42,229 --> 00:03:41,120

eight

50

00:03:43,270 --> 00:03:42,239

seven

51
00:03:48,229 --> 00:03:43,280
six

52
00:03:52,550 --> 00:03:50,710
booster ignition and liftoff of shuttle

53
00:03:54,390 --> 00:03:52,560
endeavour with nasa's final space

54
00:03:55,990 --> 00:03:54,400
station crew compartment that brings a

55
00:04:04,550 --> 00:03:56,000
bay window view to our celestial

56
00:04:10,630 --> 00:04:06,710
position on track for its flight to the

57
00:04:15,750 --> 00:04:12,390
28 seconds into the flight endeavor

58
00:04:18,229 --> 00:04:15,760
flying at 1100 miles per hour 1.3 miles

59
00:04:19,670 --> 00:04:18,239
in altitude and 7 miles downrange from

60
00:04:22,870 --> 00:04:19,680
the kennedy space center according to

61
00:04:29,749 --> 00:04:25,350
the next step will be the burnout and

62
00:04:33,670 --> 00:04:32,150
combined the twin boosters provide 5.3

63
00:05:13,590 --> 00:04:33,680

million pounds of thrust to propel the

64

00:05:18,469 --> 00:05:15,350

look at some

65

00:05:20,790 --> 00:05:18,479

video shot by endeavors crew

66

00:05:23,189 --> 00:05:20,800

earlier not long after the shuttles

67

00:05:24,469 --> 00:05:23,199

launched today of the external

68

00:05:38,310 --> 00:05:24,479

tank as it made its way back down

69

00:05:42,070 --> 00:05:40,070

and now this video showing as the

70

00:05:43,749 --> 00:05:42,080

payload bay doors opened

71

00:05:53,749 --> 00:05:43,759

about a half an hour after endeavors

72

00:05:58,150 --> 00:05:56,230

you can also see here the main cargo

73

00:06:01,189 --> 00:05:58,160

that endeavor will be delivering to the

74

00:06:04,550 --> 00:06:01,199

international space station the

75

00:06:06,629 --> 00:06:04,560

tranquility node with its uh

76

00:06:08,390 --> 00:06:06,639

cupola window attachment

77

00:06:10,950 --> 00:06:08,400

there at the

78

00:06:13,510 --> 00:06:10,960

front end of it

79

00:06:15,270 --> 00:06:13,520

this animation gives you a rough idea of

80

00:06:18,309 --> 00:06:15,280

what that inspection will look like on

81

00:06:20,710 --> 00:06:18,319

the starboard side the actual inspection

82

00:06:22,390 --> 00:06:20,720

will be conducted at a far

83

00:06:24,790 --> 00:06:22,400

slower speed

84

00:06:27,749 --> 00:06:24,800

the animation is sped up so that you get

85

00:06:30,150 --> 00:06:27,759

a good sense of the activity they'll be

86

00:06:32,070 --> 00:06:30,160

looking all along the

87

00:06:35,029 --> 00:06:32,080

leading edge of the wings at the rcc

88

00:06:36,469 --> 00:06:35,039

panels they underside

89

00:06:37,909 --> 00:06:36,479

for the

90

00:06:40,070 --> 00:06:37,919

to the tiles

91

00:06:41,350 --> 00:06:40,080

then move to the nose cap as you see

92

00:06:45,189 --> 00:06:41,360

here

93

00:06:47,350 --> 00:06:45,199

which is reinforced carbon carbon panels

94

00:06:50,309 --> 00:06:47,360

as well as the

95

00:06:51,270 --> 00:06:50,319

the heat shield tiles around that area

96

00:06:53,749 --> 00:06:51,280

and then

97

00:06:56,629 --> 00:06:53,759

they will move on to conduct the same

98

00:06:59,350 --> 00:06:56,639

sort of inspection of the starboard wing

99

00:07:01,350 --> 00:06:59,360

again looking at the

100

00:07:03,350 --> 00:07:01,360

reinforced carbon carbon panels right

101
00:07:05,990 --> 00:07:03,360
along the leading edge of the wing and

102
00:07:09,189 --> 00:07:06,000
then turning underneath to get a look at

103
00:07:11,589 --> 00:07:09,199
the heat shield tiles

104
00:07:14,469 --> 00:07:11,599
the shuttle robotic arm is now lifting

105
00:07:20,390 --> 00:07:14,479
the orbiter boom sensor system

106
00:07:25,270 --> 00:07:22,710
astronauts kay hire and nicholas patrick

107
00:07:27,350 --> 00:07:25,280
are operating the shuttle robotic arm

108
00:07:29,670 --> 00:07:27,360
to get the orbiter boom sensor system

109
00:07:32,790 --> 00:07:29,680
ready for its use in inspecting

110
00:07:37,110 --> 00:07:34,629
the space shuttle robotic arm is now

111
00:07:39,350 --> 00:07:37,120
continuing on with its movement

112
00:07:41,510 --> 00:07:39,360
for the survey of the starboard wing the

113
00:07:43,350 --> 00:07:41,520

crew members have

114

00:07:47,029 --> 00:07:43,360
moved on to the next step in the

115

00:07:50,309 --> 00:07:47,039
procedure to continue with the survey

116

00:07:55,430 --> 00:07:50,319
with the scan of two sections at a time

117

00:07:59,909 --> 00:07:57,830
this is a view from sensors on the end

118

00:08:02,950 --> 00:07:59,919
of the boom extension looking closely at

119

00:08:04,950 --> 00:08:02,960
the reinforced carbon carbon material

120

00:08:16,070 --> 00:08:04,960
that protects the wing leading edges and

121

00:08:19,189 --> 00:08:17,430
this is mission control houston

122

00:08:21,110 --> 00:08:19,199
continuing to watch views provided by

123

00:08:23,909 --> 00:08:21,120
sensors on the end of a boom extension

124

00:08:26,950 --> 00:08:23,919
that is being used to inspect

125

00:08:29,189 --> 00:08:26,960
endeavour's heat shield

126

00:08:31,430 --> 00:08:29,199

this section of the inspection along the

127

00:08:33,509 --> 00:08:31,440

starboard wing also includes a pass up

128

00:08:39,750 --> 00:08:33,519

but along the starboard side of the crew

129

00:08:39,760 --> 00:08:46,230

at well bottom starting recording

130

00:08:46,240 --> 00:08:48,870

we're with you

131

00:09:04,949 --> 00:08:51,430

the robotic arm now back in motion to

132

00:09:08,870 --> 00:09:06,630

this is mission control houston good

133

00:09:10,790 --> 00:09:08,880

view here of endeavour's port wing from

134

00:09:13,110 --> 00:09:10,800

the cameras on the space shuttle's

135

00:09:14,790 --> 00:09:13,120

50-foot long robotic arm

136

00:09:16,230 --> 00:09:14,800

you can see also in this view the

137

00:09:17,990 --> 00:09:16,240

orbiter boom sensor system that's

138

00:09:20,470 --> 00:09:18,000

attached to that robotic arm for this

139

00:09:24,150 --> 00:09:20,480

survey of the wing leading edge on the

140

00:09:28,150 --> 00:09:25,990

this is the third segment of the survey

141

00:09:30,949 --> 00:09:28,160

that the endeavor crew has been working

142

00:09:35,430 --> 00:09:32,550

they've already completed the starboard

143

00:09:39,750 --> 00:09:35,440

and nose wing surveys and now finishing

144

00:09:43,269 --> 00:09:41,509

this view of

145

00:09:44,230 --> 00:09:43,279

endeavour's port wing coming from a

146

00:09:46,630 --> 00:09:44,240

camera

147

00:09:48,550 --> 00:09:46,640

on the ship on the shuttle's robotic arm

148

00:09:52,070 --> 00:09:48,560

in the background you can see the indian

149

00:09:54,070 --> 00:09:52,080

ocean from a distance of about 213 miles

150

00:09:57,269 --> 00:09:54,080

shuttle just passed over the coast of

151
00:09:58,630 --> 00:09:57,279
somalia and now is

152
00:10:01,190 --> 00:09:58,640
going to be heading

153
00:10:03,269 --> 00:10:01,200
southeast towards the southern ocean and

154
00:10:08,710 --> 00:10:03,279
the southernmost portion of this orbit

155
00:10:12,230 --> 00:10:10,470
this is a view from a camera inside

156
00:10:14,069 --> 00:10:12,240
endeavors payload bay looking at the

157
00:10:16,949 --> 00:10:14,079
orbiter docking system

158
00:10:18,710 --> 00:10:16,959
this is the portion of the space shuttle

159
00:10:19,750 --> 00:10:18,720
that links up to the international space

160
00:10:21,110 --> 00:10:19,760
station

161
00:10:23,030 --> 00:10:21,120
as all the crew members are getting

162
00:10:25,829 --> 00:10:23,040
ready for docking to the international

163
00:10:35,829 --> 00:10:25,839

space station there patrick in view

164

00:10:40,150 --> 00:10:37,269

and there the

165

00:10:48,310 --> 00:10:40,160

terminal initiation burn using endeavors

166

00:10:51,910 --> 00:10:49,910

this is mission control houston with a

167

00:10:53,430 --> 00:10:51,920

view from a video camera on the outside

168

00:10:55,030 --> 00:10:53,440

of the international space station

169

00:10:56,230 --> 00:10:55,040

looking at the space shuttle endeavor

170

00:10:58,790 --> 00:10:56,240

with the

171

00:11:00,710 --> 00:10:58,800

horizon of the earth

172

00:11:02,310 --> 00:11:00,720

below

173

00:11:05,190 --> 00:11:02,320

endeavour is behind the international

174

00:11:07,509 --> 00:11:05,200

space station at a distance of

175

00:11:09,190 --> 00:11:07,519

about 27 000

176
00:11:10,710 --> 00:11:09,200
feet

177
00:11:13,269 --> 00:11:10,720
this is mission control houston with a

178
00:11:15,350 --> 00:11:13,279
view again from the center line

179
00:11:17,110 --> 00:11:15,360
endeavors orbiter docking system is a

180
00:11:18,069 --> 00:11:17,120
snapshot of that view from the video

181
00:11:19,590 --> 00:11:18,079
camera

182
00:11:20,630 --> 00:11:19,600
looking up at the international space

183
00:11:22,710 --> 00:11:20,640
station

184
00:11:41,030 --> 00:11:22,720
endeavour is about 1600 feet away from

185
00:11:45,110 --> 00:11:42,470
endeavor and the international space

186
00:11:47,430 --> 00:11:45,120
station are orbiting about 216 statute

187
00:11:48,710 --> 00:11:47,440
miles above the earth over the pacific

188
00:11:59,590 --> 00:11:48,720

ocean just to the east of the

189

00:12:03,670 --> 00:12:01,509

the space shuttle endeavor is continuing

190

00:12:05,509 --> 00:12:03,680

through this maneuver a nine-minute

191

00:12:11,350 --> 00:12:05,519

backflip called the rendezvous pitch

192

00:12:16,710 --> 00:12:13,670

going through that prescribed mapping of

193

00:12:19,269 --> 00:12:16,720

the underside of endeavors

194

00:12:37,670 --> 00:12:19,279

looking at the the per thermal

195

00:12:42,150 --> 00:12:40,150

this is a view from the video camera

196

00:12:43,269 --> 00:12:42,160

inside the orbiter docking system on

197

00:12:45,509 --> 00:12:43,279

endeavor

198

00:12:47,509 --> 00:12:45,519

it's a snapshot to

199

00:12:48,790 --> 00:12:47,519

from that camera being updated

200

00:12:54,310 --> 00:12:48,800

periodically looking at the

201
00:13:00,230 --> 00:12:56,629
endeavour houston on a big loop you are

202
00:13:00,240 --> 00:13:07,350
great news cj thanks go for docking

203
00:13:21,829 --> 00:13:11,350
204

204
00:13:25,350 --> 00:13:23,430
this is mission control houston now with

205
00:13:26,790 --> 00:13:25,360
the live view inside the space shuttle

206
00:13:30,150 --> 00:13:26,800
endeavour

207
00:13:31,350 --> 00:13:30,160
commander george zamka at the controls

208
00:13:32,829 --> 00:13:31,360
flying endeavor towards the

209
00:13:34,629 --> 00:13:32,839
international space

210
00:13:39,670 --> 00:13:34,639
station houston air to ground two we're

211
00:13:43,829 --> 00:13:41,750
these updated snapshots from video

212
00:13:45,509 --> 00:13:43,839
cameras onboard endeavor showing the

213
00:13:51,110 --> 00:13:45,519

vehicle getting closer and closer to the

214

00:14:03,269 --> 00:13:52,949

denver houston for terry please hit

215

00:14:03,279 --> 00:14:07,350

station houston capture confirmed

216

00:14:18,870 --> 00:14:10,550

houston

217

00:14:18,880 --> 00:14:25,750

endeavor copies free drift confirmed

218

00:14:30,230 --> 00:14:27,189

and houston endeavor we're ready for

219

00:14:55,430 --> 00:14:30,240

step 19.

220

00:14:55,440 --> 00:15:01,030

think i last saw you before christmas

221

00:15:05,910 --> 00:15:02,949

you got your eggs i don't have mine yet

222

00:15:10,710 --> 00:15:05,920

hey dj how you doing good to see ya

223

00:15:14,230 --> 00:15:12,550

awesome good to see you how's it going

224

00:15:38,790 --> 00:15:14,240

good job

225

00:15:38,800 --> 00:16:05,509

hey

226
00:16:05,519 --> 00:16:21,110
hello

227
00:16:25,829 --> 00:16:23,910
continuing to maneuver the space shuttle

228
00:16:26,629 --> 00:16:25,839
robotic arm and

229
00:16:28,230 --> 00:16:26,639
now

230
00:16:30,790 --> 00:16:28,240
along with the orbiter boom sensor

231
00:16:32,870 --> 00:16:30,800
system into place for the

232
00:16:35,110 --> 00:16:32,880
viewing of the

233
00:16:36,949 --> 00:16:35,120
tranquility node installation during the

234
00:16:58,150 --> 00:16:36,959
first spacewalk of the mission on flight

235
00:17:01,590 --> 00:17:00,550
the shuttle station complex has just

236
00:17:05,750 --> 00:17:01,600
crossed

237
00:17:06,549 --> 00:17:05,760
into another orbital sunrise 220 miles

238
00:17:10,470 --> 00:17:06,559

above

239

00:17:12,069 --> 00:17:10,480

the far north western pacific ocean has

240

00:17:13,510 --> 00:17:12,079

just finished

241

00:17:16,150 --> 00:17:13,520

flying over

242

00:17:22,390 --> 00:17:16,160

the extreme eastern portions of china

243

00:17:26,470 --> 00:17:24,630

this is now in view inside the station's

244

00:17:28,069 --> 00:17:26,480

quest airlock where astronaut nicholas

245

00:17:30,870 --> 00:17:28,079

patrick is

246

00:17:33,029 --> 00:17:30,880

and astronaut bob bankin

247

00:17:35,190 --> 00:17:33,039

also in view at the bottom of the screen

248

00:17:36,870 --> 00:17:35,200

are working on preparing their tools for

249

00:17:44,549 --> 00:17:36,880

the three spacewalks that they will be

250

00:17:48,470 --> 00:17:46,310

space shuttle endeavors commander george

251
00:17:49,510 --> 00:17:48,480
zamka is inside the station's quest

252
00:17:50,710 --> 00:17:49,520
airlock

253
00:17:53,990 --> 00:17:50,720
working with

254
00:17:55,990 --> 00:17:54,000
station flight engineer suici naguchi to

255
00:17:57,990 --> 00:17:56,000
install a rechargeable battery inside

256
00:17:59,110 --> 00:17:58,000
the spacesuit that astronaut bob bankin

257
00:18:04,630 --> 00:17:59,120
will use

258
00:18:07,830 --> 00:18:06,470
houston endeavor on air to ground two

259
00:18:11,430 --> 00:18:07,840
for cw

260
00:18:14,870 --> 00:18:13,510
this is now a view from a video camera

261
00:18:17,590 --> 00:18:14,880
on the outside of the space shuttle

262
00:18:19,669 --> 00:18:17,600
endeavour looking down at the earth 213

263
00:18:21,510 --> 00:18:19,679

statute miles below as

264

00:18:30,710 --> 00:18:21,520

the space shuttle and space station pass

265

00:21:10,630 --> 00:18:32,870

as it is nighttime on that side of the

266

00:21:16,549 --> 00:21:14,310

while we were away for a moment ago the

267

00:21:19,510 --> 00:21:16,559

repressurization of the space station's

268

00:21:21,669 --> 00:21:19,520

airlock commenced

269

00:21:25,909 --> 00:21:21,679

and was completed

270

00:21:27,750 --> 00:21:25,919

and just a moment ago 417 this afternoon

271

00:21:30,870 --> 00:21:27,760

station commander jeff williams reported

272

00:21:31,990 --> 00:21:30,880

that the airlock hatch is open and that

273

00:21:34,870 --> 00:21:32,000

allows

274

00:21:37,990 --> 00:21:34,880

spacewalkers bob benkin and nick patrick

275

00:21:40,470 --> 00:21:38,000

who are now on oxygen masks which have

276
00:21:41,430 --> 00:21:40,480
long hoses on them to re-enter the

277
00:21:42,149 --> 00:21:41,440
station

278
00:22:03,270 --> 00:21:42,159
and

279
00:22:03,280 --> 00:22:08,070
4 45 houston time this afternoon

280
00:22:19,990 --> 00:22:09,190
the

281
00:22:21,110 --> 00:22:20,000
space station astronauts terry burts and

282
00:22:21,990 --> 00:22:21,120
kay heyer

283
00:22:24,390 --> 00:22:22,000
are

284
00:22:26,870 --> 00:22:24,400
located at the robotics workstation to

285
00:22:28,870 --> 00:22:26,880
operate canadarm2

286
00:22:31,029 --> 00:22:28,880
bert's called down a moment ago

287
00:22:33,029 --> 00:22:31,039
indicating that they are getting into

288
00:22:35,590 --> 00:22:33,039

the procedure to grapple

289

00:22:39,270 --> 00:22:35,600

tranquility in endeavors cargo bay right

290

00:22:43,669 --> 00:22:40,950

the space station's robotic arm

291

00:22:45,750 --> 00:22:43,679

canadarm2 is moving in ever so slowly to

292

00:22:48,310 --> 00:22:45,760

latch on to tranquility

293

00:22:50,230 --> 00:22:48,320

the end of the arm is passing

294

00:22:52,789 --> 00:22:50,240

over the grapple fixture

295

00:22:54,549 --> 00:22:52,799

getting close to the latching point

296

00:22:59,590 --> 00:22:54,559

where snares within the end effector

297

00:23:03,190 --> 00:23:01,510

rotate your body just a little bit more

298

00:23:08,070 --> 00:23:03,200

to clear it

299

00:23:11,750 --> 00:23:10,070

members have a couple more setup steps

300

00:23:13,510 --> 00:23:11,760

here outside the equestria lock and then

301
00:23:15,270 --> 00:23:13,520
we'll make their way to endeavors cargo

302
00:23:16,950 --> 00:23:15,280
bay

303
00:23:18,149 --> 00:23:16,960
this is a view from the helmet camera

304
00:23:20,710 --> 00:23:18,159
and astronaut

305
00:23:24,470 --> 00:23:20,720
nicholas patrick's spacesuit

306
00:23:27,990 --> 00:23:26,310
the power for the

307
00:23:29,830 --> 00:23:28,000
heaters on tranquility has been

308
00:23:32,470 --> 00:23:29,840
inhibited and the heaters have been

309
00:23:36,710 --> 00:23:32,480
deactivated in preparation for these

310
00:23:41,590 --> 00:23:39,909
hey bob once you get that uh

311
00:23:43,510 --> 00:23:41,600
back in place on your left hip there

312
00:23:47,190 --> 00:23:43,520
you've got to go to head head back

313
00:23:48,870 --> 00:23:47,200

towards the uh ods

314

00:23:50,870 --> 00:23:48,880

copy that

315

00:23:53,269 --> 00:23:50,880

make it ready for your channel report

316

00:23:55,750 --> 00:23:53,279

thank you my airlock safety to the noble

317

00:23:57,990 --> 00:23:55,760

mediator is on my left earring closed

318

00:24:00,630 --> 00:23:58,000

and locked

319

00:24:34,310 --> 00:24:00,640

if uh i would like a hand-drawn number

320

00:24:40,710 --> 00:24:36,390

astronaut bob bankin is using the pistol

321

00:24:42,630 --> 00:24:40,720

grip tool to engage one hinge pin in the

322

00:24:59,269 --> 00:24:42,640

tool platform

323

00:25:03,110 --> 00:25:01,350

okay houston it was uh

324

00:25:05,669 --> 00:25:03,120

i did put several turns in when i

325

00:25:07,750 --> 00:25:05,679

started and i only got an additional

326

00:25:09,669 --> 00:25:07,760

almost five this time around but i did

327

00:25:12,390 --> 00:25:09,679

several turns to get it started the

328

00:25:15,190 --> 00:25:12,400

torque was 19.4

329

00:25:17,750 --> 00:25:15,200

and a green light astronaut nicholas

330

00:25:18,630 --> 00:25:17,760

patrick is finishing

331

00:25:57,750 --> 00:25:18,640

the

332

00:26:02,549 --> 00:26:00,149

and steve i know it's early but uh with

333

00:26:06,070 --> 00:26:02,559

the pausing and such i i would like to

334

00:26:07,190 --> 00:26:06,080

ask for a consumables status check here

335

00:26:10,630 --> 00:26:07,200

and then we're probably going to get

336

00:26:12,870 --> 00:26:10,640

ahead of even more as we uh stand by in

337

00:26:17,590 --> 00:26:12,880

the upcoming minute just to see where

338

00:26:23,990 --> 00:26:20,230

that was bob that said that right

339

00:26:28,390 --> 00:26:25,909

yeah there is uh

340

00:26:30,710 --> 00:26:28,400

really no buckle to speak of

341

00:26:34,310 --> 00:26:30,720

on the uh charlie it's just right at the

342

00:26:35,750 --> 00:26:34,320

619 handrail but it does look good

343

00:26:36,830 --> 00:26:35,760

but for the

344

00:26:39,430 --> 00:26:36,840

the turn

345

00:26:41,110 --> 00:26:39,440

test station capcom helen getzelman

346

00:26:42,950 --> 00:26:41,120

talking with mission specialist bob

347

00:26:44,870 --> 00:26:42,960

bankin who you can see here through

348

00:26:47,990 --> 00:26:44,880

mission specialist nick patrick's helmet

349

00:26:50,149 --> 00:26:48,000

camera patrick taking a and uh

350

00:26:51,350 --> 00:26:50,159

photo of banking while uh begging

351
00:27:04,470 --> 00:26:51,360
answers some questions for the ground

352
00:27:08,870 --> 00:27:06,310
and it marked the fourth spacewalk for

353
00:27:10,630 --> 00:27:08,880
bob bankin his total is now 25 hours and

354
00:27:12,549 --> 00:27:10,640
51 minutes

355
00:27:14,390 --> 00:27:12,559
and the first for nicholas patrick who

356
00:27:30,870 --> 00:27:14,400
of course has six hours and 32 minutes

357
00:27:35,190 --> 00:27:32,830
their first task is

358
00:27:36,789 --> 00:27:35,200
to basically

359
00:27:38,789 --> 00:27:36,799
lay out some

360
00:27:40,149 --> 00:27:38,799
what's known as mli multi-layer

361
00:27:44,470 --> 00:27:40,159
insulation

362
00:27:45,430 --> 00:27:44,480
wrap around

363
00:27:51,669 --> 00:27:45,440

the

364

00:27:52,549 --> 00:27:51,679

stage

365

00:27:54,950 --> 00:27:52,559

for

366

00:27:56,710 --> 00:27:54,960

the insulation so they'll be laying that

367

00:27:59,830 --> 00:27:56,720

out

368

00:28:07,350 --> 00:27:59,840

ahead of the actual

369

00:28:07,360 --> 00:28:17,909

here comes that last falls bulb okay

370

00:28:22,710 --> 00:28:19,510

nick what do you think about opening up

371

00:28:25,750 --> 00:28:22,720

this uh mli just a little bit

372

00:28:33,430 --> 00:28:25,760

i think it's a great idea

373

00:28:37,029 --> 00:28:35,029

endeavor houston we concur with

374

00:28:39,830 --> 00:28:37,039

continuing our tasks and when we get

375

00:28:40,549 --> 00:28:39,840

night time and we'll take a inspection

376
00:28:41,269 --> 00:28:40,559
with

377
00:28:45,590 --> 00:28:41,279
the

378
00:28:45,600 --> 00:28:51,750
that's great news copy houston

379
00:28:57,269 --> 00:28:55,350
bob bankin has completed the insulation

380
00:28:59,190 --> 00:28:57,279
covers on the qd's or the quick

381
00:29:01,430 --> 00:28:59,200
disconnects on those

382
00:29:03,750 --> 00:29:01,440
ammonia jumpers he's now making his way

383
00:29:05,269 --> 00:29:03,760
over to the location

384
00:29:06,789 --> 00:29:05,279
where

385
00:29:08,070 --> 00:29:06,799
nick patrick is

386
00:29:10,950 --> 00:29:08,080
so that he can

387
00:29:12,870 --> 00:29:10,960
on this night pass use the lights on his

388
00:29:14,230 --> 00:29:12,880

helmet camera

389

00:29:15,990 --> 00:29:14,240

to

390

00:29:17,350 --> 00:29:16,000

do a quick inspection

391

00:29:19,029 --> 00:29:17,360

of

392

00:29:33,029 --> 00:29:19,039

nick patrick

393

00:29:37,510 --> 00:29:34,630

from the back of the fasteners on the

394

00:29:43,029 --> 00:29:37,520

plate that holds the qd's i can identify

395

00:29:47,510 --> 00:29:45,269

and the station flight control control

396

00:29:51,269 --> 00:29:47,520

team giving the crew the good news that

397

00:29:53,430 --> 00:29:51,279

uh cooling is flowing uh into the uh

398

00:29:54,710 --> 00:29:53,440

the new module tranquility

399

00:30:57,750 --> 00:29:54,720

the

400

00:31:02,230 --> 00:31:00,149

eastern front station for robotics

401
00:31:05,909 --> 00:31:02,240
and we have the arm in

402
00:31:05,919 --> 00:31:31,830
on the big loop

403
00:31:31,840 --> 00:31:46,470
it

404
00:31:49,669 --> 00:31:48,230
this is mission control houston the team

405
00:31:51,190 --> 00:31:49,679
in the international space station

406
00:31:53,909 --> 00:31:51,200
flight control room is monitoring the

407
00:31:56,870 --> 00:31:53,919
progress of relocating the cupola using

408
00:31:59,509 --> 00:31:56,880
the station's robotic arm canadarm2

409
00:32:02,149 --> 00:31:59,519
astronaut terry burts and astronaut k

410
00:32:04,149 --> 00:32:02,159
hirer at the robotics workstation to

411
00:32:05,909 --> 00:32:04,159
conduct that maneuver verts indicated

412
00:32:08,310 --> 00:32:05,919
that the seal on the common birthing

413
00:32:09,029 --> 00:32:08,320

mechanism from for cupola looks clear

414

00:32:11,190 --> 00:32:09,039

but

415

00:32:13,909 --> 00:32:11,200

that an electrical connector has popped

416

00:32:16,070 --> 00:32:13,919

out from behind the center and that it

417

00:32:17,509 --> 00:32:16,080

is recessed and cleared the mating

418

00:32:19,430 --> 00:32:17,519

surface so

419

00:32:21,430 --> 00:32:19,440

the team agreed to continue on to the

420

00:32:24,389 --> 00:32:21,440

next position of cupola at the

421

00:32:26,950 --> 00:32:24,399

pre-install position just nearby the

422

00:32:29,110 --> 00:32:26,960

attaching port

423

00:32:31,350 --> 00:32:29,120

please copy i'll uh go ahead if you want

424

00:32:36,070 --> 00:32:31,360

me to uh do another survey or just zoom

425

00:32:36,080 --> 00:32:40,470

let's just focus on the cable okay

426
00:32:40,480 --> 00:33:19,830
anymore

427
00:33:25,669 --> 00:33:21,590
we've got four rtls that are steady

428
00:33:28,149 --> 00:33:25,679
we're going to continue in the procedure

429
00:33:31,190 --> 00:33:28,159
houston concur

430
00:33:33,029 --> 00:33:31,200
at 12 25 a.m central time the crew has

431
00:33:35,029 --> 00:33:33,039
indicated that there are four ready to

432
00:33:37,110 --> 00:33:35,039
latch indications that means that cupola

433
00:33:38,630 --> 00:33:37,120
has made contact with the port that it

434
00:33:41,509 --> 00:33:38,640
will be attached to

435
00:33:42,950 --> 00:33:41,519
the next stage will be to deploy four

436
00:33:44,870 --> 00:33:42,960
latches

437
00:33:46,630 --> 00:33:44,880
to a temporarily

438
00:35:09,270 --> 00:33:46,640

place that cupola

439

00:35:14,150 --> 00:35:11,190

in a permanent location now on the

440

00:35:15,510 --> 00:35:14,160

earth-facing port of tranquility

441

00:35:18,790 --> 00:35:15,520

verts and higher working through that

442

00:35:24,230 --> 00:35:18,800

procedure to connect power and data

443

00:35:27,430 --> 00:35:25,990

the operations support officer here in

444

00:35:29,910 --> 00:35:27,440

the international space station flight

445

00:35:31,829 --> 00:35:29,920

control room can see that the fourth set

446

00:35:34,470 --> 00:35:31,839

of bolts have been removed

447

00:35:36,230 --> 00:35:34,480

all 16 bolts then disengaged from

448

00:35:37,750 --> 00:35:36,240

holding the pressurized mating adapter

449

00:35:39,990 --> 00:35:37,760

number three in place

450

00:35:48,550 --> 00:35:40,000

and now the four latches are being

451
00:35:54,550 --> 00:35:50,950
this is a view from the camera inside

452
00:35:57,030 --> 00:35:54,560
the port that pma3 will be attached to

453
00:35:59,030 --> 00:35:57,040
it is a camera setup for precise

454
00:36:11,190 --> 00:35:59,040
alignment of the element while it is

455
00:36:15,349 --> 00:36:13,190
and houston station on the big loop we

456
00:36:17,829 --> 00:36:15,359
are ready for the cbcs view to monitor

457
00:36:17,839 --> 00:36:50,950
copy bob we will put that in work

458
00:36:54,470 --> 00:36:52,630
this is a view on the outside of the

459
00:36:56,710 --> 00:36:54,480
international space station and space

460
00:36:59,670 --> 00:36:56,720
shuttle endeavour as the two vehicles

461
00:37:01,589 --> 00:36:59,680
orbit together 217 statute miles above

462
00:37:02,950 --> 00:37:01,599
the earth over the south pacific ocean

463
00:37:30,950 --> 00:37:02,960

they are passing through an orbital

464

00:37:37,430 --> 00:37:33,270

this is mission control houston the

465

00:37:39,270 --> 00:37:37,440

expedition 22 and sts-130 endeavor crews

466

00:37:40,870 --> 00:37:39,280

have joined together inside the unity

467

00:38:03,270 --> 00:37:40,880

note on board the international space

468

00:38:06,470 --> 00:38:04,950

and this was really nice jeff put

469

00:38:08,069 --> 00:38:06,480

together a crew lunch for us so the

470

00:38:10,790 --> 00:38:08,079

whole crew was down there in node one

471

00:38:13,589 --> 00:38:10,800

having once together

472

00:38:14,870 --> 00:38:13,599

so everybody has utensils

473

00:38:16,829 --> 00:38:14,880

i do

474

00:38:18,550 --> 00:38:16,839

they're off tj all right

475

00:38:29,589 --> 00:38:18,560

hello here you go jeff one more and

476
00:38:34,630 --> 00:38:31,349
these spacewalkers have completed their

477
00:38:37,990 --> 00:38:34,640
tasks with the setup of the systems for

478
00:38:41,910 --> 00:38:39,910
later they will install some handrails

479
00:38:43,430 --> 00:38:41,920
and worksite interfaces for future

480
00:38:51,750 --> 00:38:43,440
spacewalkers on the outside of the

481
00:38:55,510 --> 00:38:53,109
these spacewalkers have joined each

482
00:38:56,870 --> 00:38:55,520
other near the cupola to begin removing

483
00:39:00,950 --> 00:38:56,880
the insulation

484
00:39:04,470 --> 00:39:02,710
once the crew members removed the

485
00:39:06,870 --> 00:39:04,480
insulation covers

486
00:39:08,630 --> 00:39:06,880
patrick will be the one to release the

487
00:39:10,950 --> 00:39:08,640
three bolts on each of the window

488
00:39:14,230 --> 00:39:10,960

shutters for the seven windows while

489

00:39:15,910 --> 00:39:14,240

banking moves on to install some

490

00:39:18,390 --> 00:39:15,920

equipment on the outside of tranquility

491

00:39:21,430 --> 00:39:18,400

to help future space walkers such as

492

00:39:23,589 --> 00:39:21,440

handrails and worksite to interface

493

00:39:24,870 --> 00:39:23,599

connectors

494

00:39:26,630 --> 00:39:24,880

you can

495

00:39:31,670 --> 00:39:26,640

get to work on your side of the ground

496

00:39:34,550 --> 00:39:33,270

crew members on board the international

497

00:39:36,790 --> 00:39:34,560

space station and space shuttle

498

00:39:39,910 --> 00:39:36,800

endeavour have coordinated the space

499

00:39:43,109 --> 00:39:39,920

walkers locations and opening the first

500

00:40:01,430 --> 00:39:43,119

shutter on the cupola window number

501
00:40:05,829 --> 00:40:03,910
and their shutter number two the last

502
00:40:07,670 --> 00:40:05,839
window covering to be tested on the

503
00:40:10,230 --> 00:40:07,680
cupola is opening

504
00:40:15,670 --> 00:40:10,240
the crew members inside cupola open the

505
00:40:20,630 --> 00:40:17,510
crew members visible in the window

506
00:40:22,950 --> 00:40:20,640
looking out to the cupola

507
00:40:25,190 --> 00:40:22,960
the side of a cupola with the window

508
00:40:32,870 --> 00:40:25,200
open faces forward on the international

509
00:40:40,150 --> 00:40:34,550
mission specialist bob banking making

510
00:40:44,309 --> 00:40:42,309
the addition of the tranquility

511
00:40:48,069 --> 00:40:44,319
node and the cupola

512
00:40:49,910 --> 00:40:48,079
addition to tranquility mark the 98

513
00:40:51,190 --> 00:40:49,920

complete point for the international

514

00:40:53,109 --> 00:40:51,200

space station

515

00:40:55,910 --> 00:40:53,119

and with the work done to

516

00:40:58,230 --> 00:40:55,920

during today's spacewalk i'm

517

00:40:59,430 --> 00:40:58,240

setting up the final ammonia cooling

518

00:41:00,950 --> 00:40:59,440

line for

519

00:41:02,870 --> 00:41:00,960

tranquility and the heater cables for

520

00:41:04,790 --> 00:41:02,880

the pressurized mating adapter that

521

00:41:06,630 --> 00:41:04,800

marks actually the completion of the

522

00:41:40,230 --> 00:41:06,640

external thermal control system for the

523

00:41:45,109 --> 00:41:42,870

see the crew getting some video pilot

524

00:41:48,630 --> 00:41:45,119

terry burt's there the cameraman

525

00:41:50,390 --> 00:41:48,640

birds has been working to install panels

526
00:41:52,069 --> 00:41:50,400
to cover up the

527
00:41:53,510 --> 00:41:52,079
wires and cables that the crew has been

528
00:42:01,309 --> 00:41:53,520
connecting and

529
00:42:05,270 --> 00:42:04,390
360 degrees it's amazing you can see

530
00:42:07,030 --> 00:42:05,280
this

531
00:42:08,950 --> 00:42:07,040
thickness of the atmosphere you can see

532
00:42:39,510 --> 00:42:08,960
the clouds coming and going the

533
00:42:42,870 --> 00:42:40,950
okay and this was the funnest part of

534
00:42:45,589 --> 00:42:42,880
the day one of our tasks was to do a

535
00:42:47,349 --> 00:42:45,599
window check and uh you can see kay and

536
00:42:48,950 --> 00:42:47,359
i in there and that's windows 7. that's

537
00:42:51,829 --> 00:42:48,960
the window that looks straight down see

538
00:42:53,910 --> 00:42:51,839

we open it up and we just closed it

539

00:42:54,710 --> 00:42:53,920

and uh it was a real honor to get to be

540

00:42:56,309 --> 00:42:54,720

uh

541

00:43:15,270 --> 00:42:56,319

one of the first the first people in

542

00:43:15,280 --> 00:43:18,870

hey guys

543

00:43:22,950 --> 00:43:20,790

good morning from the international

544

00:43:24,950 --> 00:43:22,960

space station and from the space shuttle

545

00:43:27,589 --> 00:43:24,960

endeavor mr president

546

00:43:29,270 --> 00:43:27,599

well it's great to talk to you guys i i

547

00:43:32,069 --> 00:43:29,280

wanted to

548

00:43:34,230 --> 00:43:32,079

uh first of all just say that we've got

549

00:43:35,910 --> 00:43:34,240

a bunch of very excited young people

550

00:43:38,390 --> 00:43:35,920

here with us

551

00:43:41,109 --> 00:43:38,400

along with a bunch of

552

00:43:43,829 --> 00:43:41,119

uh somewhat excited uh

553

00:43:51,829 --> 00:43:46,390

we have one engineer and one member of

554

00:43:55,349 --> 00:43:53,430

the day's activities on board the

555

00:43:57,829 --> 00:43:55,359

international space station and endeavor

556

00:43:58,630 --> 00:43:57,839

will focus on transferring

557

00:44:01,430 --> 00:43:58,640

the

558

00:44:04,950 --> 00:44:01,440

regenerative life support equipment into

559

00:44:06,710 --> 00:44:04,960

the new tranquility node those are

560

00:44:09,109 --> 00:44:06,720

that equipment is

561

00:44:11,190 --> 00:44:09,119

separated out into various phone phone

562

00:44:12,950 --> 00:44:11,200

booth sized racks

563

00:44:14,550 --> 00:44:12,960

many of them inside the destiny

564

00:44:16,550 --> 00:44:14,560

laboratory module

565

00:44:19,190 --> 00:44:16,560

and now that tranquility is there they

566

00:44:21,589 --> 00:44:19,200

can be relocated to that place and free

567

00:44:27,829 --> 00:44:21,599

up room inside the lab for additional

568

00:44:31,430 --> 00:44:29,670

this is a video camera set up in the

569

00:44:33,190 --> 00:44:31,440

unity node looking through the hatchway

570

00:44:35,030 --> 00:44:33,200

towards tranquility

571

00:44:37,270 --> 00:44:35,040

where the astronauts are installing the

572

00:45:00,150 --> 00:44:37,280

waste and hygiene compartment into the

573

00:45:04,069 --> 00:45:01,990

and mike this is actually a view from

574

00:45:06,150 --> 00:45:04,079

cupola this is the first

575

00:45:07,910 --> 00:45:06,160

time that we use the cupola to observe

576

00:45:10,150 --> 00:45:07,920

robotic operations which is one of its

577

00:45:12,390 --> 00:45:10,160

main uses so that was pretty cool nick

578

00:45:28,150 --> 00:45:12,400

went down there and helped us watch the

579

00:45:33,910 --> 00:45:30,870

good afternoon today we are here in

580

00:45:36,870 --> 00:45:33,920

tranquility standing above the cupola

581

00:45:39,109 --> 00:45:36,880

to formally open the cupola for use by

582

00:45:41,190 --> 00:45:39,119

other crews that will be here up on the

583

00:45:43,270 --> 00:45:41,200

space station

584

00:45:49,750 --> 00:45:43,280

so with that george how about if you uh

585

00:45:56,950 --> 00:45:52,069

and here we go the cupola is open for

586

00:46:39,589 --> 00:46:00,390

all right all right everybody

587

00:46:43,510 --> 00:46:42,630

flight engineer tj creamer here closing

588

00:46:49,589 --> 00:46:43,520

the

589

00:46:51,349 --> 00:46:49,599

pressurized mating adapter

590

00:46:54,790 --> 00:46:51,359

the shuttle side of the hatch closed at

591

00:46:57,990 --> 00:46:54,800

208 am central time bring into a close

592

00:47:22,549 --> 00:46:58,000

uh nine days and 52 minutes that the two

593

00:47:26,390 --> 00:47:25,030

it's really wonderful opportunity to fly

594

00:47:29,670 --> 00:47:26,400

on the space shuttle for a few minutes

595

00:47:30,710 --> 00:47:29,680

it was great i wore my plt colored shirt

596

00:47:32,630 --> 00:47:30,720

and we're getting ready for the

597

00:47:34,630 --> 00:47:32,640

undocking and the fly around we did a

598

00:47:39,589 --> 00:47:34,640

360 degree loop all the way around the

599

00:47:41,349 --> 00:47:39,599

space station from a range of 650 feet

600

00:47:54,309 --> 00:47:41,359

standing by for the undocking of the

601
00:47:58,069 --> 00:47:55,510
endeavor undocking from the

602
00:48:00,870 --> 00:47:58,079
international space station on time 208

603
00:48:06,230 --> 00:48:00,880
statute miles physical separation

604
00:48:11,109 --> 00:48:08,309
from endeavor thanks very much for the

605
00:48:13,430 --> 00:48:11,119
great hospitality we're sorry to go

606
00:48:15,670 --> 00:48:13,440
hope you get to enjoy tranquility and

607
00:48:17,990 --> 00:48:15,680
the new view

608
00:48:19,430 --> 00:48:18,000
absolutely hey when you get back right

609
00:48:22,710 --> 00:48:19,440
boom okay

610
00:48:31,910 --> 00:48:25,109
united states space shuttle endeavor

611
00:48:35,990 --> 00:48:34,069
this is a view on the aft flight deck of

612
00:48:37,829 --> 00:48:36,000
the space shuttle endeavour

613
00:48:39,349 --> 00:48:37,839

pilot terry burts on the left flying

614

00:48:41,910 --> 00:48:39,359

endeavor away from the international

615

00:48:44,790 --> 00:48:41,920

space station now at a distance of 223

616

00:48:48,950 --> 00:48:46,790

astronaut k higher on the right holding

617

00:48:51,589 --> 00:48:48,960

the handheld laser

618

00:48:54,790 --> 00:48:51,599

to monitor that distance and to increase

619

00:48:57,589 --> 00:48:56,150

this is mission control houston

620

00:48:59,270 --> 00:48:57,599

continuing to watch a view of the

621

00:49:01,990 --> 00:48:59,280

international space station from a

622

00:49:03,190 --> 00:49:02,000

camera on the space shuttle endeavour as

623

00:49:05,910 --> 00:49:03,200

the orbiter

624

00:49:08,630 --> 00:49:05,920

flies in a circle around the space

625

00:49:24,549 --> 00:49:08,640

station at a distance of about 460 feet

626
00:49:27,910 --> 00:49:25,990
the crew members on board the space

627
00:49:30,470 --> 00:49:27,920
shuttle endeavour adjusting the camera

628
00:50:19,589 --> 00:49:30,480
views from endeavors cargo bay looking

629
00:50:23,270 --> 00:50:21,270
this is a live view from a camera on

630
00:50:24,710 --> 00:50:23,280
board the space shuttle endeavor

631
00:50:27,190 --> 00:50:24,720
it's in the

632
00:50:28,870 --> 00:50:27,200
aft portion of the payload bay looking

633
00:50:31,030 --> 00:50:28,880
towards the cabin

634
00:50:33,190 --> 00:50:31,040
you can see the shuttle robotic arm is

635
00:50:36,390 --> 00:50:33,200
deployed with the orbiter boom sensor

636
00:50:38,470 --> 00:50:36,400
system attached it was in this position

637
00:50:40,710 --> 00:50:38,480
as a standard position for endeavors

638
00:50:42,470 --> 00:50:40,720

undocking from the station

639

00:50:44,549 --> 00:50:42,480

and then we'll begin

640

00:50:46,870 --> 00:50:44,559

its motion to

641

00:50:49,030 --> 00:50:46,880

inspect endeavour's heat shield

642

00:50:50,950 --> 00:50:49,040

the operators will be mission specialist

643

00:51:19,190 --> 00:50:50,960

kay heyer steve robinson and nicholas

644

00:51:24,150 --> 00:51:21,589

for the port wing survey zamka and verse

645

00:51:27,510 --> 00:51:24,160

will be continuing on with the work but

646

00:51:29,510 --> 00:51:27,520

higher will be handing over controls to

647

00:51:57,829 --> 00:51:29,520

mission special mission specialist steve

648

00:52:01,510 --> 00:51:59,589

the orbiter boom sensor system lives

649

00:52:03,829 --> 00:52:01,520

along the starboard side of the

650

00:52:14,230 --> 00:52:03,839

shuttle's cargo bay while the robotic

651
00:52:18,630 --> 00:52:16,150
this view from a heads-up display and

652
00:52:21,589 --> 00:52:18,640
now endeavor in view at the shuttle

653
00:52:21,599 --> 00:52:29,430
one minute to touchdown

654
00:52:29,440 --> 00:52:42,870
endeavour at 5000 feet

655
00:52:46,230 --> 00:52:44,630
endeavour's decent rate is 20 times

656
00:52:47,910 --> 00:52:46,240
higher and 7 times steeper than a

657
00:52:51,589 --> 00:52:47,920
commercial airliner on this final

658
00:52:51,599 --> 00:53:08,390
30 seconds to touch down

659
00:53:08,400 --> 00:53:11,670
main gear touchdown

660
00:53:11,680 --> 00:53:18,470
the landing gear is down and locked

661
00:53:18,480 --> 00:53:23,510
main gear touchdown

662
00:53:23,520 --> 00:53:29,109
pilatory verts deploying the drag chute

663
00:53:29,119 --> 00:53:33,349

nose gear touchdown

664

00:53:38,150 --> 00:53:35,829

endeavour rolling out on runway 1-5 at

665

00:54:22,549 --> 00:53:38,160

kennedy space center wrapping up a 5.7

666

00:54:27,670 --> 00:54:24,790

endeavor has completed its 24th mission

667

00:54:30,150 --> 00:54:27,680

in the 130th space shuttle mission it

668

00:54:32,630 --> 00:54:30,160

was the 32nd to the international space

669

00:54:58,069 --> 00:54:32,640

station overall endeavour's 10th trip to

670

00:55:03,109 --> 00:55:01,069

roger wheel stop endeavor welcome home

671

00:55:05,190 --> 00:55:03,119

congratulations to you and the crew on

672

00:55:06,950 --> 00:55:05,200

an outstanding mission

673

00:55:08,789 --> 00:55:06,960

installing the tranquility node and

674

00:55:13,510 --> 00:55:08,799

opening up the cupola's windows to the

675

00:55:16,950 --> 00:55:15,510

it's great to be home but it was a great

676

00:55:19,109 --> 00:55:16,960

adventure

677

00:55:20,950 --> 00:55:19,119

we copy zambo there are no immediate

678

00:55:57,190 --> 00:55:20,960

post landing deltas we'll meet you on

679

00:56:03,510 --> 00:55:59,349

well good evening everybody we

680

00:56:05,270 --> 00:56:03,520

were back as we came it's dark outside

681

00:56:08,150 --> 00:56:05,280

hey i just

682

00:56:09,510 --> 00:56:08,160

want to say that sts 130 is mission

683

00:56:12,390 --> 00:56:09,520

complete

684

00:56:14,069 --> 00:56:12,400

we're safe on deck here in

685

00:56:15,829 --> 00:56:14,079

kennedy space center

686

00:56:18,230 --> 00:56:15,839

and that's due to the work of a lot of

687

00:56:20,789 --> 00:56:18,240

people we had a great team

688

00:56:24,309 --> 00:56:20,799

we had tremendous hardware to bring up

689

00:56:26,390 --> 00:56:24,319

note 3 was pristine cupola was beautiful

690

00:56:29,510 --> 00:56:26,400

both in design and care

691

00:56:30,789 --> 00:56:29,520

before we left and endeavor my goodness

692

00:56:33,190 --> 00:56:30,799

what a machine

693

00:56:34,390 --> 00:56:33,200

she was she was perfect throughout the

694

00:56:36,390 --> 00:56:34,400

flight and

695

00:56:38,710 --> 00:56:36,400

we brought her back safe and sound due