



1
00:00:34,709 --> 00:00:08,390
hi i'm sts-131 commander alan poindexter

2
00:00:38,549 --> 00:00:36,389
this is shuttle launch control we are

3
00:00:41,030 --> 00:00:38,559
now in the crew quarters of the

4
00:00:44,310 --> 00:00:41,040
operations checkout building

5
00:00:48,150 --> 00:00:44,320
commander alan poindexter

6
00:00:48,160 --> 00:00:53,830
mission specialist one rick mastracchio

7
00:00:58,229 --> 00:00:55,510
clay anderson

8
00:00:59,750 --> 00:00:58,239
mission specialist number five

9
00:01:02,389 --> 00:00:59,760
mission specialist number three

10
00:01:04,630 --> 00:01:02,399
stephanie wilson

11
00:01:09,750 --> 00:01:04,640
and our japan aerospace exploration

12
00:01:09,760 --> 00:01:14,630
there's dottie metcalf lindenberger

13
00:01:20,310 --> 00:01:17,830

space shuttle discovery stands

14

00:01:35,990 --> 00:01:20,320

illuminated by xenon light ready for

15

00:01:36,000 --> 00:01:45,749

um

16

00:01:49,670 --> 00:01:47,749

and we see the space station traveling

17

00:01:55,270 --> 00:01:49,680

over the kennedy space center on nasa

18

00:01:55,280 --> 00:02:08,869

a bright a bright dot in the sky

19

00:02:12,150 --> 00:02:10,710

t minus 15 seconds and the sound

20

00:02:14,229 --> 00:02:12,160

suppression water system has been

21

00:02:19,190 --> 00:02:14,239

activated

22

00:02:23,030 --> 00:02:21,350

three engines up and ready

23

00:02:24,229 --> 00:02:23,040

three two

24

00:02:26,630 --> 00:02:24,239

one

25

00:02:28,869 --> 00:02:26,640

zero booster ignition

26

00:02:30,869 --> 00:02:28,879

and liftoff of discovery

27

00:02:47,509 --> 00:02:30,879

blazing a trail to scientific

28

00:02:53,910 --> 00:02:49,990

position putting an armed force for 51.6

29

00:02:55,270 --> 00:02:53,920

degree 136 by 36 statute orbit and

30

00:03:05,670 --> 00:02:55,280

eventually the international space

31

00:03:09,110 --> 00:03:07,589

discovery's three liquid-fueled main

32

00:03:10,550 --> 00:03:09,120

engines are now throttling down to

33

00:03:12,630 --> 00:03:10,560

reduce stress on the shuttle as it

34

00:03:15,190 --> 00:03:12,640

travels through the area of maximum

35

00:03:19,350 --> 00:03:15,200

dynamic pressure discovery is already at

36

00:03:21,190 --> 00:03:19,360

an altitude of 4.7 miles or 26

37

00:03:22,630 --> 00:03:21,200

500 feet

38

00:03:26,869 --> 00:03:22,640

traveling

39

00:03:26,879 --> 00:03:31,110

roger

40

00:03:34,470 --> 00:03:32,789

traveling one thousand miles per hour

41

00:03:35,910 --> 00:03:34,480

discoveries engines are now throttled

42

00:03:50,309 --> 00:03:35,920

back up and performing at full

43

00:03:53,030 --> 00:03:51,430

the booster officer in the mission

44

00:03:55,509 --> 00:03:53,040

control center has confirmed solid

45

00:04:09,750 --> 00:03:55,519

rocket booster separation all systems

46

00:04:12,789 --> 00:04:11,110

the booster officer here in mission

47

00:04:14,949 --> 00:04:12,799

control is reporting the discovery's

48

00:04:19,189 --> 00:04:14,959

three main engines have been shut off

49

00:04:22,310 --> 00:04:19,199

now waiting for external tank separation

50

00:04:25,030 --> 00:04:22,320

discovery houston nominal miko ohms1 is

51
00:04:30,469 --> 00:04:25,040
not required

52
00:04:34,710 --> 00:04:33,030
there is the external tank separation

53
00:04:37,510 --> 00:04:34,720
eight minutes and 53 seconds into the

54
00:04:40,550 --> 00:04:37,520
sts-130 mission discovery now safely in

55
00:04:52,230 --> 00:04:43,590
66 miles above the earth and traveling

56
00:04:57,670 --> 00:04:54,310
sequential still video view at the

57
00:04:59,749 --> 00:04:57,680
starboard wing leading edge of discovery

58
00:05:01,590 --> 00:04:59,759
wing leading edges and nose caps are the

59
00:05:03,350 --> 00:05:01,600
focus of today's inspections because

60
00:05:04,629 --> 00:05:03,360
they experience the hottest temperatures

61
00:05:06,950 --> 00:05:04,639
when the shuttle drops back into the

62
00:05:08,710 --> 00:05:06,960
earth's earth's atmosphere for landing

63
00:05:12,150 --> 00:05:08,720

those temperatures get as high as 3000

64

00:05:12,160 --> 00:05:15,189

normally this

65

00:05:18,469 --> 00:05:17,189

survey would be down late to the ground

66

00:05:20,150 --> 00:05:18,479

in real time

67

00:05:22,070 --> 00:05:20,160

for the

68

00:05:23,110 --> 00:05:22,080

imagery experts to begin their analysis

69

00:05:25,189 --> 00:05:23,120

however

70

00:05:27,189 --> 00:05:25,199

without the ku band antenna the crew is

71

00:05:29,430 --> 00:05:27,199

going to wait until they arrive at the

72

00:05:36,830 --> 00:05:29,440

international space station

73

00:05:53,749 --> 00:05:39,990

download discovery we're complete

74

00:05:57,270 --> 00:05:56,390

station discovery initiating rpm in

75

00:05:58,150 --> 00:05:57,280

three

76

00:05:58,950 --> 00:05:58,160

two

77

00:06:18,150 --> 00:05:58,960

one

78

00:06:22,870 --> 00:06:20,629

discovery station uh we got the great

79

00:06:25,430 --> 00:06:22,880

rpm shot uh look you guys looking

80

00:07:00,629 --> 00:06:25,440

beautiful

81

00:07:07,909 --> 00:07:03,510

glad you're here

82

00:07:22,870 --> 00:07:07,919

discovery station free drift confirmed

83

00:07:26,710 --> 00:07:24,390

space shuttle discovery's crew coming

84

00:07:30,790 --> 00:07:26,720

through the hatch at 4 11 am central

85

00:07:35,909 --> 00:07:32,309

while the shuttle and station are

86

00:07:38,550 --> 00:07:35,919

traveling 217 miles above the pacific

87

00:07:49,670 --> 00:07:38,560

ocean heading towards the

88

00:07:53,510 --> 00:07:51,430

pilot jim dunton just passing through

89

00:07:56,710 --> 00:07:53,520

the view there followed by mission

90

00:07:58,469 --> 00:07:56,720

specialist rick mastracchio

91

00:08:09,749 --> 00:07:58,479

and mission specialist clay anderson

92

00:08:13,749 --> 00:08:11,110

as you can see the space station's

93

00:08:16,309 --> 00:08:13,759

robotic arms moved in now and has a grip

94

00:08:18,230 --> 00:08:16,319

on the multi-purpose logistics module

95

00:08:25,670 --> 00:08:18,240

inside the space station space shuttle's

96

00:08:29,589 --> 00:08:27,110

mission specialist stephanie wilson and

97

00:08:31,350 --> 00:08:29,599

nako yamazaki working at the

98

00:08:33,829 --> 00:08:31,360

robotics workstation inside the

99

00:08:36,070 --> 00:08:33,839

station's destiny laboratory

100

00:08:38,949 --> 00:08:36,080

to control the

101
00:08:42,350 --> 00:08:38,959
57-foot long robotic arm

102
00:08:46,150 --> 00:08:44,230
13.6

103
00:08:49,509 --> 00:08:46,160
ton temporary module out of the

104
00:08:54,389 --> 00:08:52,550
that module is uh 21 feet long and 15

105
00:08:56,790 --> 00:08:54,399
feet wide

106
00:08:58,710 --> 00:08:56,800
and weighs a total right now of more

107
00:09:01,190 --> 00:08:58,720
than 13 tons

108
00:09:03,030 --> 00:09:01,200
six tons of that is cargo that

109
00:09:05,030 --> 00:09:03,040
the module is carrying up inside it

110
00:09:17,110 --> 00:09:05,040
basically works as

111
00:09:21,590 --> 00:09:18,870
see the hatches are open between the

112
00:09:23,269 --> 00:09:21,600
leonardo multipurpose logistics module

113
00:09:25,670 --> 00:09:23,279

and the harmony node

114

00:09:26,710 --> 00:09:25,680

the crew getting uh

115

00:09:29,990 --> 00:09:26,720

to work

116

00:09:31,670 --> 00:09:30,000

down inside the mplm

117

00:09:32,790 --> 00:09:31,680

you can see all the cargo inside as

118

00:09:34,550 --> 00:09:32,800

we've been mentioning there's more than

119

00:09:37,509 --> 00:09:34,560

twelve thousand pounds of cargo and

120

00:09:39,670 --> 00:09:37,519

supplies and equipment inside leonardo

121

00:09:41,269 --> 00:09:39,680

all of that has to be moved out of it

122

00:09:48,310 --> 00:09:41,279

and across that hatchway that you see

123

00:09:48,320 --> 00:09:53,350

just going to

124

00:09:57,350 --> 00:09:54,870

you know i had to move actually very

125

00:09:58,550 --> 00:09:57,360

very slow because that fgb is quite

126
00:09:59,509 --> 00:09:58,560
bulky

127
00:10:03,190 --> 00:09:59,519
but

128
00:10:04,949 --> 00:10:03,200
there

129
00:10:06,389 --> 00:10:04,959
rick and clay did a great job outside

130
00:10:09,269 --> 00:10:06,399
all day and we've got a couple of

131
00:10:10,630 --> 00:10:09,279
different clips of them uh

132
00:10:11,829 --> 00:10:10,640
around the space station doing the great

133
00:10:14,069 --> 00:10:11,839
work they did and with the great

134
00:10:16,150 --> 00:10:14,079
teamwork all day by uh by all parties

135
00:10:19,110 --> 00:10:16,160
involved the ground and the

136
00:10:24,710 --> 00:10:19,120
flight crews who just had a terrific day

137
00:10:30,150 --> 00:10:27,509
one of our big tasks on the eva

138
00:10:34,389 --> 00:10:32,389

move the ammonia tank assembly and and

139

00:10:35,990 --> 00:10:34,399

part of that required rick and i to go

140

00:10:38,069 --> 00:10:36,000

to the payload bay

141

00:10:39,590 --> 00:10:38,079

and prepare that to be removed and

142

00:10:41,030 --> 00:10:39,600

that's what you're seeing right here

143

00:10:41,829 --> 00:10:41,040

clay's on the left and rick's on the

144

00:10:43,670 --> 00:10:41,839

right

145

00:10:46,150 --> 00:10:43,680

and i'm in a foot restraint so that i

146

00:10:47,590 --> 00:10:46,160

can hold this 1800 pound thing when rick

147

00:10:49,829 --> 00:10:47,600

helps me lift it off and we're going to

148

00:10:52,310 --> 00:10:49,839

hand it to the arm operators

149

00:10:54,550 --> 00:10:52,320

and of course dottie was wonderful today

150

00:10:56,150 --> 00:10:54,560

she's just our quarterback inside the

151
00:10:57,030 --> 00:10:56,160
shuttle and tells us what to do and of

152
00:10:59,030 --> 00:10:57,040
course

153
00:11:00,550 --> 00:10:59,040
she's a former teacher so we do exactly

154
00:11:04,550 --> 00:11:00,560
what she tells us otherwise she might

155
00:11:07,910 --> 00:11:06,150
a lot of the big teamwork things today

156
00:11:10,710 --> 00:11:07,920
was uh between the robotics team and the

157
00:11:12,870 --> 00:11:10,720
eda team and here you see uh steph and

158
00:11:14,710 --> 00:11:12,880
jim flying the arm and it's really

159
00:11:17,910 --> 00:11:14,720
incredible uh stephanie did a fantastic

160
00:11:19,910 --> 00:11:17,920
job uh grappling a moving target

161
00:11:23,350 --> 00:11:19,920
yeah it was a lot of fun to work

162
00:11:24,389 --> 00:11:23,360
with clay and rick today and with jim

163
00:11:25,590 --> 00:11:24,399

they

164

00:11:27,750 --> 00:11:25,600

had a little bit of trouble getting the

165

00:11:30,630 --> 00:11:27,760

tank unbolted but were able to overcome

166

00:11:32,790 --> 00:11:30,640

that with their hard work and clay was

167

00:11:34,949 --> 00:11:32,800

holding it up for us nice and

168

00:11:36,630 --> 00:11:34,959

steady as she goes and

169

00:11:38,389 --> 00:11:36,640

we were able to fly it in and get a good

170

00:11:40,069 --> 00:11:38,399

grapple and

171

00:11:41,910 --> 00:11:40,079

towards the end of this

172

00:11:43,670 --> 00:11:41,920

spacewalk we were stowing the ammonia

173

00:11:45,670 --> 00:11:43,680

tank onto the uh

174

00:11:47,670 --> 00:11:45,680

the payload accommodations oru as a

175

00:11:53,110 --> 00:11:47,680

temporary location and we'll pick up

176

00:11:57,750 --> 00:11:55,350

this is jim i think uh the high point

177

00:12:00,710 --> 00:11:57,760

for me today was when stephanie i had a

178

00:12:02,470 --> 00:12:00,720

few pause points during our robotics

179

00:12:04,069 --> 00:12:02,480

and we had a chance to take turns

180

00:12:06,310 --> 00:12:04,079

sneaking away from the robotic station

181

00:12:08,550 --> 00:12:06,320

down into the cupola and take a look at

182

00:12:09,350 --> 00:12:08,560

the arm and its different configurations

183

00:12:11,910 --> 00:12:09,360

just

184

00:12:14,629 --> 00:12:11,920

you know 10 20 feet out from the windows

185

00:12:17,829 --> 00:12:14,639

the incredible views of the earth going

186

00:12:20,069 --> 00:12:17,839

by behind with some sunsets and

187

00:12:21,430 --> 00:12:20,079

and different landmasses passing it was

188

00:12:22,949 --> 00:12:21,440

phenomenal

189

00:12:32,870 --> 00:12:22,959

so

190

00:12:35,509 --> 00:12:32,880

at work in the mplm

191

00:12:37,829 --> 00:12:35,519

and we were able to get

192

00:12:38,790 --> 00:12:37,839

five of our seven racks transferred

193

00:12:40,470 --> 00:12:38,800

today

194

00:12:42,870 --> 00:12:40,480

and uh maroco

195

00:12:44,790 --> 00:12:42,880

did just a a wonderful job

196

00:12:45,509 --> 00:12:44,800

she worked with all of us occasionally

197

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

and

198

00:12:49,829 --> 00:12:47,519

a lot with suici today

199

00:12:51,590 --> 00:12:49,839

moving uh moving most of the

200

00:12:53,030 --> 00:12:51,600

mplm uh out

201
00:12:55,269 --> 00:12:53,040
into the various locations around the

202
00:12:56,949 --> 00:12:55,279
space station and moving a lot of the

203
00:12:58,389 --> 00:12:56,959
return supply

204
00:13:00,949 --> 00:12:58,399
back into place

205
00:13:03,990 --> 00:13:00,959
then here's the views in the mplm and

206
00:13:05,430 --> 00:13:04,000
here's soichi and naoko

207
00:13:07,590 --> 00:13:05,440
and they're

208
00:13:11,670 --> 00:13:07,600
working on moving another rack and

209
00:13:16,470 --> 00:13:13,110
yeah this is the marriage rack which is

210
00:13:18,790 --> 00:13:16,480
a muscle atrophy uh resistance

211
00:13:19,750 --> 00:13:18,800
science rack and it goes in the columbus

212
00:13:21,590 --> 00:13:19,760
module

213
00:13:23,269 --> 00:13:21,600

and again this is a full-size rack about

214

00:13:25,430 --> 00:13:23,279

the size of a

215

00:13:27,910 --> 00:13:25,440

of a large household refrigerator

216

00:13:30,069 --> 00:13:27,920

and it moves through the hatches very

217

00:13:31,990 --> 00:13:30,079

easily but again it has a lot of mass so

218

00:13:33,590 --> 00:13:32,000

once you get it moving it's quite

219

00:13:36,310 --> 00:13:33,600

difficult to stop so we have to be

220

00:13:37,190 --> 00:13:36,320

careful not to not to hit anything

221

00:13:39,030 --> 00:13:37,200

and

222

00:13:41,350 --> 00:13:39,040

we come out of the

223

00:13:46,710 --> 00:13:41,360

out of the mplm and turn it 90 degrees

224

00:13:52,150 --> 00:13:49,430

yeah it was very fun to see uh

225

00:13:54,790 --> 00:13:52,160

working with the transfer and also suici

226

00:13:57,030 --> 00:13:54,800

and the help of the spacing crew oleg

227

00:13:59,350 --> 00:13:57,040

helped us for a while today

228

00:14:01,110 --> 00:13:59,360

and dottie and jim and dex were also

229

00:14:02,629 --> 00:14:01,120

involved in transfer so we were able to

230

00:14:04,230 --> 00:14:02,639

transfer these racks

231

00:14:06,389 --> 00:14:04,240

uh get someone to pre-pack the space

232

00:14:09,189 --> 00:14:06,399

station crew has worked hard to pack for

233

00:14:11,430 --> 00:14:09,199

us into the mplm and

234

00:14:14,710 --> 00:14:11,440

we have also started to offload some of

235

00:14:16,550 --> 00:14:14,720

the resupply so it's a great team and we

236

00:14:19,189 --> 00:14:16,560

are enjoying the mplm it's a great

237

00:14:21,030 --> 00:14:19,199

volume there's already been some

238

00:14:27,590 --> 00:14:21,040

some bungee jumping and some flips in

239

00:14:31,509 --> 00:14:28,870

one of the things that's important to

240

00:14:33,030 --> 00:14:31,519

understand about all this transfer is

241

00:14:35,430 --> 00:14:33,040

the amount of work that went on on the

242

00:14:37,430 --> 00:14:35,440

ground prior to the mission to

243

00:14:39,269 --> 00:14:37,440

you know this is it's like a uh one of

244

00:14:41,030 --> 00:14:39,279

those games we all used to play as kids

245

00:14:42,949 --> 00:14:41,040

where you had to move all the squares

246

00:14:45,670 --> 00:14:42,959

and look for open holes and it's very

247

00:14:47,670 --> 00:14:45,680

choreographed in that we have to move

248

00:14:49,269 --> 00:14:47,680

one thing slide something over move

249

00:14:50,949 --> 00:14:49,279

something up and pull something back

250

00:14:53,110 --> 00:14:50,959

down to get out the piece that we want

251
00:14:55,350 --> 00:14:53,120
and then be able to transfer it so a lot

252
00:14:57,110 --> 00:14:55,360
of thanks goes out to all the guys and

253
00:14:58,710 --> 00:14:57,120
gals on the ground that put so many

254
00:15:01,110 --> 00:14:58,720
hours together to make this very

255
00:15:03,750 --> 00:15:01,120
choreographed plan that we just go up

256
00:15:06,389 --> 00:15:03,760
and execute and and the fact that we're

257
00:15:10,550 --> 00:15:06,399
way ahead of this transfer timeline is a

258
00:15:15,030 --> 00:15:12,550
again i just can't say it enough uh what

259
00:15:17,189 --> 00:15:15,040
what great teamwork uh

260
00:15:18,550 --> 00:15:17,199
that we saw all day today uh all around

261
00:15:19,750 --> 00:15:18,560
the space station and the shuttle

262
00:15:20,870 --> 00:15:19,760
complex

263
00:15:22,389 --> 00:15:20,880

on the ground

264

00:15:23,350 --> 00:15:22,399

we just got a tremendous amount of work

265

00:15:25,750 --> 00:15:23,360

done

266

00:15:33,670 --> 00:15:25,760

and uh it's just phenomenal to see this

267

00:15:37,189 --> 00:15:35,430

after a hard day's work it was nice to

268

00:15:39,430 --> 00:15:37,199

be able to greet rick and clay as they

269

00:15:41,350 --> 00:15:39,440

were coming inside

270

00:15:43,350 --> 00:15:41,360

handshakes and hugs all around for the

271

00:15:45,110 --> 00:15:43,360

fantastic job that they did

272

00:15:46,790 --> 00:15:45,120

and uh

273

00:15:48,389 --> 00:15:46,800

and dottie also

274

00:15:50,150 --> 00:15:48,399

orchestrating the

275

00:15:52,870 --> 00:15:50,160

space walk and leading them through

276

00:16:16,230 --> 00:15:52,880

setting up the tools it was just nice

277

00:16:20,949 --> 00:16:17,829

we started off the

278

00:16:26,550 --> 00:16:24,389

six uh doing some water ops and uh this

279

00:16:28,150 --> 00:16:26,560

is uh this is me down in the on the mid

280

00:16:31,350 --> 00:16:28,160

deck front of the galley

281

00:16:33,509 --> 00:16:31,360

filling up a cwc bag and uh

282

00:16:35,430 --> 00:16:33,519

inserting some silver biocide into it

283

00:16:37,749 --> 00:16:35,440

this is technical water that is over on

284

00:16:40,310 --> 00:16:37,759

the station

285

00:16:41,829 --> 00:16:40,320

and uh just after that jim and value

286

00:16:43,749 --> 00:16:41,839

were up on the flight deck

287

00:16:45,670 --> 00:16:43,759

and there's never a dull moment on a

288

00:16:47,030 --> 00:16:45,680

shuttle flight and so uh jim and i are

289

00:16:51,030 --> 00:16:47,040

wearing our t-shirts this morning

290

00:16:52,550 --> 00:16:51,040

because we basically got up and had this

291

00:16:54,629 --> 00:16:52,560

procedure to fly and then we were going

292

00:16:57,269 --> 00:16:54,639

to exercise afterwards

293

00:16:58,790 --> 00:16:57,279

but you can see this procedure

294

00:17:00,949 --> 00:16:58,800

it had some

295

00:17:03,509 --> 00:17:00,959

fairly close clearances with the

296

00:17:05,189 --> 00:17:03,519

gem module but all of it could be viewed

297

00:17:09,270 --> 00:17:05,199

basically out of the commander's window

298

00:17:16,549 --> 00:17:11,990

and this is clay and me transforming

299

00:17:20,630 --> 00:17:17,510

and

300

00:17:22,309 --> 00:17:20,640

today we transferred two racks into the

301
00:17:25,270 --> 00:17:22,319
space station

302
00:17:29,110 --> 00:17:25,280
this is walls uh the arts observatory

303
00:17:31,270 --> 00:17:29,120
rack which goes into the ui laboratory

304
00:17:34,310 --> 00:17:31,280
it enhances the earth observation

305
00:17:35,190 --> 00:17:34,320
capability a lot with our

306
00:17:36,230 --> 00:17:35,200
uh

307
00:17:40,549 --> 00:17:36,240
remote

308
00:17:42,789 --> 00:17:40,559
the whole

309
00:17:45,510 --> 00:17:42,799
the window and the camera and video

310
00:17:51,350 --> 00:17:49,590
as you see the rack is so big it just

311
00:17:53,430 --> 00:17:51,360
fits the heart

312
00:17:56,310 --> 00:17:53,440
so we have to very

313
00:17:57,110 --> 00:17:56,320

we have to be very careful we didn't hit

314

00:17:59,669 --> 00:17:57,120

any

315

00:18:03,750 --> 00:17:59,679

heart shield or structures

316

00:18:06,390 --> 00:18:03,760

so we move very slow and steady

317

00:18:08,950 --> 00:18:06,400

and this is another teamwork uh two or

318

00:18:09,909 --> 00:18:08,960

three crew members uh

319

00:18:13,350 --> 00:18:09,919

work

320

00:18:19,990 --> 00:18:13,360

together to transfer the wall flux and

321

00:18:22,950 --> 00:18:21,270

i was actually

322

00:18:24,470 --> 00:18:22,960

behind now so waiting to get through the

323

00:18:26,549 --> 00:18:24,480

lab

324

00:18:28,950 --> 00:18:26,559

when this was going on watching her do

325

00:18:29,990 --> 00:18:28,960

it now several of us have commented that

326

00:18:33,669 --> 00:18:30,000

uh

327

00:18:35,029 --> 00:18:33,679

ops that

328

00:18:37,350 --> 00:18:35,039

they're uh

329

00:18:41,190 --> 00:18:37,360

like fish and water they uh they move so

330

00:18:43,350 --> 00:18:41,200

gracefully with these these huge rocks

331

00:18:44,549 --> 00:18:43,360

you know hundreds of pounds so

332

00:18:46,150 --> 00:18:44,559

um

333

00:18:47,830 --> 00:18:46,160

it's one of those things where if you

334

00:18:49,830 --> 00:18:47,840

get it get it moving in the wrong

335

00:18:53,990 --> 00:18:49,840

direction it's really hard to stop it

336

00:18:59,270 --> 00:18:56,630

and most of our day all of us were uh at

337

00:19:00,710 --> 00:18:59,280

some point doing transfer um

338

00:19:02,630 --> 00:19:00,720

which uh

339

00:19:04,710 --> 00:19:02,640

is a lot like moving and we talked a

340

00:19:05,909 --> 00:19:04,720

little bit about yesterday how it's um

341

00:19:08,710 --> 00:19:05,919

kind of like a game where you have to

342

00:19:10,549 --> 00:19:08,720

move some things out of the station

343

00:19:13,430 --> 00:19:10,559

to make room for things coming out of

344

00:19:15,350 --> 00:19:13,440

the multi-purpose logistics module

345

00:19:16,950 --> 00:19:15,360

and today we are really putting that

346

00:19:18,789 --> 00:19:16,960

dance into play

347

00:19:22,230 --> 00:19:18,799

and when you go into the multi-purpose

348

00:19:24,870 --> 00:19:22,240

logistics module it is very empty

349

00:19:26,310 --> 00:19:24,880

and now we have the hard task of filling

350

00:19:28,390 --> 00:19:26,320

it back up

351
00:19:30,150 --> 00:19:28,400
so now we're going and finding a whole

352
00:19:32,150 --> 00:19:30,160
bunch of bags and trying to figure out

353
00:19:38,310 --> 00:19:32,160
where they go and as you can see that's

354
00:19:43,110 --> 00:19:40,549
well after daddy and i did the

355
00:19:46,630 --> 00:19:43,120
pdrs work got a chance to go over and

356
00:19:48,710 --> 00:19:46,640
work on the a red the advanced resistive

357
00:19:51,110 --> 00:19:48,720
exercise device you can see here doing

358
00:19:52,549 --> 00:19:51,120
squats it's really effective and it

359
00:19:55,590 --> 00:19:52,559
feels good to put some weight on the

360
00:19:59,990 --> 00:19:57,510
a-red's a great machine and uh here's

361
00:20:01,750 --> 00:20:00,000
jim racking the uh the bar in the upper

362
00:20:04,470 --> 00:20:01,760
position and here you can see where it

363
00:20:07,350 --> 00:20:04,480

just floats this is rick and the airlock

364

00:20:09,510 --> 00:20:07,360

preparing for our eda2 tomorrow

365

00:20:11,029 --> 00:20:09,520

he and clay spent a long time today

366

00:20:12,789 --> 00:20:11,039

preparing tools and getting the suits

367

00:20:13,990 --> 00:20:12,799

ready to go and checking out all the

368

00:20:15,990 --> 00:20:14,000

systems and

369

00:20:17,750 --> 00:20:16,000

and making sure that

370

00:20:20,870 --> 00:20:17,760

everything is ready to go for tomorrow's

371

00:20:23,430 --> 00:20:20,880

tomorrow's long eda

372

00:20:25,270 --> 00:20:23,440

this is a picture of the tool set up in

373

00:20:26,950 --> 00:20:25,280

the crew lock

374

00:20:28,789 --> 00:20:26,960

portion of the the international space

375

00:20:30,310 --> 00:20:28,799

station airlock this is some more

376

00:20:31,830 --> 00:20:30,320

exercise

377

00:20:33,669 --> 00:20:31,840

on the a-red

378

00:20:36,390 --> 00:20:33,679

the air it

379

00:20:38,149 --> 00:20:36,400

actually in front of uh next to the

380

00:20:39,270 --> 00:20:38,159

cupola

381

00:20:41,669 --> 00:20:39,280

module

382

00:20:44,310 --> 00:20:41,679

so while exercising

383

00:20:49,270 --> 00:20:44,320

we can enjoy the view of the arts with a

384

00:20:53,430 --> 00:20:51,029

working out in space is actually a lot

385

00:20:54,789 --> 00:20:53,440

of fun

386

00:20:57,830 --> 00:20:54,799

i'm checking all the tools that are

387

00:20:59,350 --> 00:20:57,840

going to go outside tomorrow for the eva

388

00:21:00,870 --> 00:20:59,360

making sure that the guys have every

389

00:21:05,190 --> 00:21:00,880

single thing that they need and that

390

00:21:08,870 --> 00:21:06,710

hey houston we did a lot of transfer

391

00:21:09,830 --> 00:21:08,880

today and everybody was really busy

392

00:21:12,070 --> 00:21:09,840

we uh

393

00:21:14,230 --> 00:21:12,080

we got a lot done today and uh we're

394

00:21:16,310 --> 00:21:14,240

really really happy to share just a few

395

00:21:17,510 --> 00:21:16,320

moments of what we did with you thanks

396

00:21:19,270 --> 00:21:17,520

to everybody on the ground for all the

397

00:21:21,990 --> 00:21:19,280

hard work preparation for this flight

398

00:21:23,510 --> 00:21:22,000

we're just having a terrific time

399

00:21:25,909 --> 00:21:23,520

we started the morning

400

00:21:28,310 --> 00:21:25,919

in the airlock this is uh

401
00:21:31,190 --> 00:21:28,320
trace caldwell and jim dutton helping

402
00:21:32,870 --> 00:21:31,200
rick and clay get into their suits and

403
00:21:34,630 --> 00:21:32,880
get into the airlock

404
00:21:37,029 --> 00:21:34,640
and here's uh tj

405
00:21:39,190 --> 00:21:37,039
getting our safers ready tj was also a

406
00:21:41,669 --> 00:21:39,200
great help today and of course dottie

407
00:21:43,110 --> 00:21:41,679
she loaded us up with tools and uh put

408
00:21:49,909 --> 00:21:43,120
us to work as soon as we got out the

409
00:21:52,950 --> 00:21:51,669
these safers are

410
00:21:54,630 --> 00:21:52,960
backpacks

411
00:21:57,029 --> 00:21:54,640
that are dotting right now on the

412
00:21:59,990 --> 00:21:57,039
spacesuit and those allow us that if we

413
00:22:01,830 --> 00:22:00,000

were to fall off in some strange event

414

00:22:03,830 --> 00:22:01,840

we could fly back and

415

00:22:06,390 --> 00:22:03,840

the way they put us into the airlock uh

416

00:22:07,909 --> 00:22:06,400

after they put the safers on is uh the

417

00:22:09,830 --> 00:22:07,919

first person to go out the door goes in

418

00:22:11,029 --> 00:22:09,840

head first and the second person goes in

419

00:22:12,710 --> 00:22:11,039

feet first

420

00:22:15,430 --> 00:22:12,720

and then we spend a little bit of time

421

00:22:17,830 --> 00:22:15,440

as we wait for the pressure to go down

422

00:22:20,870 --> 00:22:17,840

and to be ready to open the hatch

423

00:22:22,789 --> 00:22:20,880

we fiddle with our tools and we

424

00:22:24,549 --> 00:22:22,799

just try to get comfortable or relax a

425

00:22:26,310 --> 00:22:24,559

little bit before we head outside to do

426

00:22:27,350 --> 00:22:26,320

our eva and you see how many people it

427

00:22:30,870 --> 00:22:27,360

takes to

428

00:22:35,590 --> 00:22:32,710

a lot of work and effort and

429

00:22:38,470 --> 00:22:35,600

pre-planning goes into evas also this is

430

00:22:39,990 --> 00:22:38,480

stephanie mayoko in the mplm

431

00:22:41,270 --> 00:22:40,000

you know they're doing simultaneous

432

00:22:43,990 --> 00:22:41,280

operations

433

00:22:45,909 --> 00:22:44,000

uh trying to do a lot of resupply and uh

434

00:22:48,390 --> 00:22:45,919

return supply work

435

00:22:51,029 --> 00:22:48,400

and uh really really busy

436

00:22:52,310 --> 00:22:51,039

today was just a stellar example of a

437

00:22:55,590 --> 00:22:52,320

great teamwork

438

00:22:57,990 --> 00:22:55,600

so we had stephanie and jim honey harm

439

00:22:59,830 --> 00:22:58,000

rick and clay outside

440

00:23:01,190 --> 00:22:59,840

dottie on the flight deck front of the

441

00:23:03,510 --> 00:23:01,200

whole show

442

00:23:05,590 --> 00:23:03,520

and uh with lots of communication lots

443

00:23:07,510 --> 00:23:05,600

of practice lots of teamwork and a lot

444

00:23:09,510 --> 00:23:07,520

of help with from the ground

445

00:23:11,510 --> 00:23:09,520

with a lot of great planning

446

00:23:13,590 --> 00:23:11,520

and a year of training

447

00:23:16,070 --> 00:23:13,600

they were able to execute the plan

448

00:23:18,310 --> 00:23:16,080

really well

449

00:23:20,870 --> 00:23:18,320

this is on the cedar card

450

00:23:22,390 --> 00:23:20,880

on the truss of the space station

451
00:23:24,710 --> 00:23:22,400
and cedar is a crew equipment

452
00:23:25,669 --> 00:23:24,720
translation aid and they were preparing

453
00:23:27,830 --> 00:23:25,679
this

454
00:23:28,789 --> 00:23:27,840
uh cedar cart as a temporary storage

455
00:23:30,070 --> 00:23:28,799
place

456
00:23:32,390 --> 00:23:30,080
for the ammonia tank that was going to

457
00:23:34,870 --> 00:23:32,400
come out of the truck on the back side

458
00:23:36,630 --> 00:23:34,880
they just handed that that tank off to a

459
00:23:38,390 --> 00:23:36,640
stephen gym on the arm

460
00:23:40,789 --> 00:23:38,400
and then the old tank was going to be

461
00:23:42,710 --> 00:23:40,799
placed temporarily on this cedar cart

462
00:23:45,029 --> 00:23:42,720
while they took the new tank

463
00:23:47,669 --> 00:23:45,039

and took it off of the

464

00:23:50,070 --> 00:23:47,679

the payload attach mechanism on the

465

00:23:53,909 --> 00:23:50,080

mobile base system and took it across

466

00:23:57,750 --> 00:23:55,269

one of the things that was interesting

467

00:23:59,669 --> 00:23:57,760

today and unique for both rick and i was

468

00:24:02,230 --> 00:23:59,679

the fact that we were on the backside of

469

00:24:04,789 --> 00:24:02,240

the truss a lot for the station we found

470

00:24:06,630 --> 00:24:04,799

that the extremes of hot temperature and

471

00:24:07,830 --> 00:24:06,640

cold temperature were

472

00:24:11,430 --> 00:24:07,840

quite

473

00:24:13,430 --> 00:24:11,440

pronounced compared to our previous evas

474

00:24:16,070 --> 00:24:13,440

i'm sure we'll be able to find out

475

00:24:16,830 --> 00:24:16,080

exactly why that is we have an idea but

476
00:24:19,510 --> 00:24:16,840
we'll

477
00:24:21,110 --> 00:24:19,520
see here's the view inside the

478
00:24:23,669 --> 00:24:21,120
laboratory module at the robotics

479
00:24:25,830 --> 00:24:23,679
workstation uh jim and i were hard at

480
00:24:27,029 --> 00:24:25,840
work uh flying the arm and trying to do

481
00:24:28,710 --> 00:24:27,039
our best to

482
00:24:30,710 --> 00:24:28,720
keep it steady

483
00:24:32,630 --> 00:24:30,720
as we were either going over the pin or

484
00:24:34,789 --> 00:24:32,640
coming off of the pin for rick and clay

485
00:24:36,630 --> 00:24:34,799
and they were holding it steady for us

486
00:24:38,950 --> 00:24:36,640
and there's always of course uh time for

487
00:24:40,870 --> 00:24:38,960
a little camaraderie and uh and meal and

488
00:24:42,630 --> 00:24:40,880

this is back in the russian segment in

489

00:24:43,750 --> 00:24:42,640

the service module

490

00:24:47,029 --> 00:24:43,760

and uh

491

00:24:49,590 --> 00:24:47,039

we have three russian coprats on board

492

00:24:52,310 --> 00:24:49,600

and uh there you have the suici

493

00:24:56,870 --> 00:24:52,320

all like kotov tj kramer

494

00:25:09,029 --> 00:24:58,870

michelle korenko

495

00:25:12,870 --> 00:25:11,029

when it comes to transfer and today

496

00:25:15,190 --> 00:25:12,880

she's uh right there installing the

497

00:25:16,870 --> 00:25:15,200

glacier into the lab rack and these are

498

00:25:18,390 --> 00:25:16,880

large freezers that

499

00:25:20,390 --> 00:25:18,400

we brought up and

500

00:25:23,590 --> 00:25:20,400

and she installed one of those today

501
00:25:25,750 --> 00:25:23,600
this is now go again inside the mplm

502
00:25:29,430 --> 00:25:25,760
and you can see that it's a

503
00:25:30,789 --> 00:25:29,440
chock full of resupply racks and

504
00:25:32,390 --> 00:25:30,799
and

505
00:25:33,269 --> 00:25:32,400
storage bags

506
00:25:35,029 --> 00:25:33,279
and

507
00:25:37,990 --> 00:25:35,039
noko is having a great time doing it

508
00:25:39,350 --> 00:25:38,000
she's really a pro at it

509
00:25:41,269 --> 00:25:39,360
today one of the things that our

510
00:25:42,630 --> 00:25:41,279
timeline was to transfer

511
00:25:44,470 --> 00:25:42,640
temporary

512
00:25:46,070 --> 00:25:44,480
sleep station this is sort of the early

513
00:25:47,669 --> 00:25:46,080

version of uh

514

00:25:50,950 --> 00:25:47,679

crew quarters and we brought up a crew

515

00:25:52,710 --> 00:25:50,960

quarters in our logistics module the

516

00:25:53,669 --> 00:25:52,720

advanced version of the crew quarters

517

00:25:55,590 --> 00:25:53,679

has

518

00:25:57,350 --> 00:25:55,600

come so you can hear

519

00:26:00,310 --> 00:25:57,360

caution and warning tones it's noise

520

00:26:01,990 --> 00:26:00,320

insulated it has computer access so it's

521

00:26:03,909 --> 00:26:02,000

much more comfortable than the early

522

00:26:06,310 --> 00:26:03,919

version so we're packing up the earlier

523

00:26:25,269 --> 00:26:06,320

version and taking it home with us in

524

00:26:30,390 --> 00:26:27,510

guys have a great time out there

525

00:26:32,789 --> 00:26:30,400

last dva of the flight and uh daddy

526

00:26:36,310 --> 00:26:32,799

we'll hand over to you

527

00:26:37,909 --> 00:26:36,320

well it's a beautiful day to go eva um

528

00:26:39,830 --> 00:26:37,919

it's obviously you can see it's light

529

00:26:42,470 --> 00:26:39,840

outside and i'll start you through these

530

00:26:46,950 --> 00:26:45,590

there you go now look over here

531

00:26:48,390 --> 00:26:46,960

oh baby

532

00:26:52,710 --> 00:26:48,400

you're gonna want to take this one to

533

00:26:56,230 --> 00:26:53,990

all right

534

00:26:58,070 --> 00:26:56,240

get some work here though let's get this

535

00:27:00,870 --> 00:26:58,080

baby

536

00:27:02,710 --> 00:27:00,880

all right clay do the honors

537

00:27:04,310 --> 00:27:02,720

okay start heading to publish you got a

538

00:27:11,350 --> 00:27:04,320

good clearance

539

00:27:15,909 --> 00:27:13,110

mission specialist stephanie wilson and

540

00:27:18,630 --> 00:27:15,919

pilot jim dutton moving the

541

00:27:21,190 --> 00:27:18,640

ammonia tank assembly in towards the

542

00:27:23,669 --> 00:27:21,200

external storage platform to give the

543

00:27:27,190 --> 00:27:23,679

two space walkers access to the handle

544

00:27:27,200 --> 00:27:32,470

good motion continue keep it coming

545

00:27:35,350 --> 00:27:33,990

both spacewalkers and the old amount you

546

00:27:44,149 --> 00:27:35,360

take assembly now on their way to the

547

00:27:48,070 --> 00:27:46,389

good view of the

548

00:27:49,909 --> 00:27:48,080

side did you

549

00:28:03,830 --> 00:27:49,919

assembly in motion on its way to the

550

00:28:07,029 --> 00:28:05,269

both space walkers now in place they're

551
00:28:10,789 --> 00:28:07,039
getting ready to receive that ammonia

552
00:28:16,870 --> 00:28:12,789
good motion

553
00:28:20,230 --> 00:28:19,190
okay stop the end of the payload day

554
00:28:21,909 --> 00:28:20,240
motion

555
00:28:33,430 --> 00:28:21,919
okay we'll stop into the payload we'll

556
00:28:38,389 --> 00:28:34,950
in the mplm

557
00:28:41,350 --> 00:28:38,399
yes we have uh today and tomorrow and

558
00:28:44,149 --> 00:28:41,360
then we will close the mplm hot so we

559
00:28:45,669 --> 00:28:44,159
were very busy to reconfigure the mplm

560
00:28:48,870 --> 00:28:45,679
for return

561
00:28:51,830 --> 00:28:48,880
so a lot of form piece of forms

562
00:28:54,470 --> 00:28:51,840
we have to reconfigure for return which

563
00:28:56,149 --> 00:28:54,480

is different location from the resupply

564

00:29:00,149 --> 00:28:56,159

so we are

565

00:29:01,909 --> 00:29:00,159

working very hard to park everything

566

00:29:03,110 --> 00:29:01,919

we've had a couple of shots of video so

567

00:29:05,430 --> 00:29:03,120

people could see what these racks look

568

00:29:07,750 --> 00:29:05,440

like that that's a resupply rack it has

569

00:29:10,470 --> 00:29:07,760

different uh different storage volumes

570

00:29:13,029 --> 00:29:10,480

for uh different bags this is a resupply

571

00:29:15,510 --> 00:29:13,039

platform an rsp we call it with

572

00:29:17,430 --> 00:29:15,520

different with different size bags and

573

00:29:18,710 --> 00:29:17,440

there are several of those along each

574

00:29:20,630 --> 00:29:18,720

side and they can also rotate you can

575

00:29:22,310 --> 00:29:20,640

see one in the back background there

576
00:29:24,310 --> 00:29:22,320
that's rotated out of the way so we can

577
00:29:25,750 --> 00:29:24,320
get behind it because there are bags

578
00:29:27,909 --> 00:29:25,760
behind it as well

579
00:29:29,350 --> 00:29:27,919
anyway mplm looks great now this was

580
00:29:38,389 --> 00:29:29,360
first thing in the morning and now it's

581
00:29:42,470 --> 00:29:39,830
this is note one and we are waiting

582
00:29:43,669 --> 00:29:42,480
outside the airlock for it to open um

583
00:29:45,190 --> 00:29:43,679
right now

584
00:29:48,310 --> 00:29:45,200
tracy and jim

585
00:29:50,470 --> 00:29:48,320
are prepping and wrecking clay for eva

586
00:29:51,750 --> 00:29:50,480
three and uh pretty soon they'll come

587
00:29:53,750 --> 00:29:51,760
out of the

588
00:29:56,230 --> 00:29:53,760

um

589

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

come out we'll be able to get tools on

590

00:29:59,909 --> 00:29:58,399

and get them all ready put those safer

591

00:30:02,389 --> 00:29:59,919

packs on and then get them into the

592

00:30:08,149 --> 00:30:02,399

airlock so tj are waiting and here you

593

00:30:13,269 --> 00:30:10,950

that's jim coming out and uh

594

00:30:14,149 --> 00:30:13,279

rick and i spend the night so we camp

595

00:30:16,630 --> 00:30:14,159

out

596

00:30:19,029 --> 00:30:16,640

uh for the space walks and that's to

597

00:30:20,470 --> 00:30:19,039

pre-breathe uh oxygen and help get the

598

00:30:24,950 --> 00:30:20,480

nitrogen out of our system so we won't

599

00:30:29,510 --> 00:30:27,430

yeah we get a lot of good training at

600

00:30:31,750 --> 00:30:29,520

johnson space center and uh jim was

601
00:30:33,669 --> 00:30:31,760
noting today that though he and i hadn't

602
00:30:35,750 --> 00:30:33,679
trained together on the ground uh it

603
00:30:36,950 --> 00:30:35,760
seemed that our training was put to good

604
00:30:41,430 --> 00:30:36,960
work

605
00:30:44,389 --> 00:30:43,190
well the robotics went really well again

606
00:30:47,029 --> 00:30:44,399
today

607
00:30:49,190 --> 00:30:47,039
we got to go in and release

608
00:30:51,510 --> 00:30:49,200
the tank to clay in the back of the

609
00:30:52,549 --> 00:30:51,520
payload bay before he and rick bolted it

610
00:30:54,950 --> 00:30:52,559
down

611
00:30:57,269 --> 00:30:54,960
and stephanie did a great job of

612
00:30:59,269 --> 00:30:57,279
releasing that and getting back off the

613
00:31:00,870 --> 00:30:59,279

pin it's pretty dynamic when the guys

614

00:31:02,070 --> 00:31:00,880

are in the suits

615

00:31:03,909 --> 00:31:02,080

they

616

00:31:05,509 --> 00:31:03,919

have a very hard time stabilizing in

617

00:31:07,830 --> 00:31:05,519

positions where the seat doesn't want to

618

00:31:09,269 --> 00:31:07,840

be because of the uh the pressure inside

619

00:31:13,190 --> 00:31:09,279

of it and clay just did a really good

620

00:31:15,830 --> 00:31:13,200

job uh holding the tank still for us

621

00:31:18,950 --> 00:31:15,840

uh this is olive kotov the commander of

622

00:31:20,789 --> 00:31:18,960

the soyuz and the international space

623

00:31:23,590 --> 00:31:20,799

station he's doing some exercises on the

624

00:31:26,549 --> 00:31:23,600

new advanced resistive exercise device

625

00:31:28,549 --> 00:31:26,559

and this is soichi on the bike

626

00:31:30,230 --> 00:31:28,559

yeah i'm doing the cs workout aero

627

00:31:32,310 --> 00:31:30,240

biking at the speed over seventy

628

00:31:34,549 --> 00:31:32,320

thousand miles per hour it is from all

629

00:31:36,230 --> 00:31:34,559

the kudos to the aces thank you very

630

00:31:38,230 --> 00:31:36,240

much

631

00:31:40,470 --> 00:31:38,240

there's uh

632

00:31:42,710 --> 00:31:40,480

tracing in the mplm

633

00:31:45,430 --> 00:31:42,720

and a great no shot of daddy metcalf

634

00:31:48,389 --> 00:31:47,029

this is uh one of the interesting things

635

00:31:50,149 --> 00:31:48,399

about being in space is that you can use

636

00:31:53,190 --> 00:31:50,159

the windows in new and inventive ways

637

00:31:54,310 --> 00:31:53,200

and uh to look back at the station truss

638

00:31:55,909 --> 00:31:54,320

assembly

639

00:31:57,190 --> 00:31:55,919

from the pilot's window you have to kind

640

00:31:59,350 --> 00:31:57,200

of get on your back and put your face up

641

00:32:01,110 --> 00:31:59,360

in the window and so really a beautiful

642

00:32:02,630 --> 00:32:01,120

view

643

00:32:04,070 --> 00:32:02,640

this is the gulf of aden and the mouth

644

00:32:06,549 --> 00:32:04,080

of the red sea

645

00:32:09,190 --> 00:32:06,559

and uh the east coast of africa

646

00:32:11,430 --> 00:32:09,200

absolutely stunning contrast between the

647

00:32:13,350 --> 00:32:11,440

reds and browns and the sand and the

648

00:32:15,269 --> 00:32:13,360

bright blue waters

649

00:32:16,870 --> 00:32:15,279

really really stunning views

650

00:32:18,470 --> 00:32:16,880

and you can see the

651
00:32:19,190 --> 00:32:18,480
high contrast that you get there with

652
00:32:20,549 --> 00:32:19,200
the

653
00:32:22,710 --> 00:32:20,559
earth limb and

654
00:32:30,950 --> 00:32:22,720
and there's a shuttle ku italian view as

655
00:32:34,789 --> 00:32:33,110
my job is to just uh watch everybody and

656
00:32:42,310 --> 00:32:34,799
uh

657
00:32:44,310 --> 00:32:42,320
and helping keep track of all the small

658
00:32:45,909 --> 00:32:44,320
tasks that need to go on and uh

659
00:32:47,590 --> 00:32:45,919
delivering food and coffee to those that

660
00:32:49,110 --> 00:32:47,600
wanted it uh we've got such a hard

661
00:32:51,029 --> 00:32:49,120
working team up here

662
00:32:53,990 --> 00:32:51,039
they uh

663
00:32:55,750 --> 00:32:54,000

they used me as a runner and uh

664

00:32:57,750 --> 00:32:55,760

and uh to do the most miscellaneous

665

00:32:58,789 --> 00:32:57,760

tasks that everybody else can't get done

666

00:33:01,509 --> 00:32:58,799

because they're so busy doing the

667

00:33:05,509 --> 00:33:03,509

and uh sometimes you just have to make

668

00:33:08,470 --> 00:33:05,519

things that and as you can see here in

669

00:33:10,470 --> 00:33:08,480

the elko is uh getting all the foam and

670

00:33:12,470 --> 00:33:10,480

bags into place

671

00:33:16,389 --> 00:33:12,480

there's a real team effort to get

672

00:33:23,350 --> 00:33:18,630

and then she is being superwoman with

673

00:33:30,149 --> 00:33:25,909

sometimes the cameraman just needs to

674

00:33:33,909 --> 00:33:32,070

but you can see uh

675

00:33:36,149 --> 00:33:33,919

floating in space is a lot of fun and if

676
00:33:38,149 --> 00:33:36,159
you make your work fun then it has it's

677
00:33:41,029 --> 00:33:38,159
no problem to do it and i think that all

678
00:33:43,110 --> 00:33:41,039
of us could say no matter how tedious

679
00:33:45,669 --> 00:33:43,120
tying foam down may be

680
00:33:48,230 --> 00:33:45,679
it's really fun because you're floating

681
00:34:08,869 --> 00:33:48,240
all i can say is that the sts-131 crew

682
00:34:12,710 --> 00:34:11,030
mission specialist malko yamazaki here

683
00:34:14,550 --> 00:34:12,720
floating out of the multipurpose

684
00:34:16,470 --> 00:34:14,560
logistics module she's been

685
00:34:18,629 --> 00:34:16,480
one of the

686
00:34:21,190 --> 00:34:18,639
crew members in charge of the

687
00:34:23,669 --> 00:34:21,200
transfer of items to and from that

688
00:34:25,190 --> 00:34:23,679

module getting it ready now to be

689

00:34:26,869 --> 00:34:25,200

buttoned up and close the hatches

690

00:34:28,310 --> 00:34:26,879

between the two

691

00:34:31,030 --> 00:34:28,320

between the module and the rest of the

692

00:34:32,869 --> 00:34:31,040

station so that it can be removed today

693

00:34:34,470 --> 00:34:32,879

by the space station's robotic arm and

694

00:34:37,990 --> 00:34:34,480

installed back inside the shuttle's

695

00:34:43,109 --> 00:34:40,629

flight engineer suici with uh commander

696

00:34:45,030 --> 00:34:43,119

alan poindexter and

697

00:34:47,349 --> 00:34:45,040

mission specialist clay anderson closing

698

00:34:48,869 --> 00:34:47,359

that hatch on the leonardo multipurpose

699

00:34:51,270 --> 00:34:48,879

logistics module

700

00:34:52,550 --> 00:34:51,280

this will not be leonardo's last visit

701
00:34:55,750 --> 00:34:52,560
to the station and will be coming back

702
00:34:57,109 --> 00:34:55,760
up on the sts-133 mission to

703
00:34:58,950 --> 00:34:57,119
remain permanently at the station at

704
00:35:01,030 --> 00:34:58,960
that point

705
00:35:05,030 --> 00:35:01,040
be able then to act as a storage room

706
00:35:10,870 --> 00:35:07,109
eastern station on the big loop the

707
00:35:10,880 --> 00:35:15,990
copy closed hatch thank you

708
00:35:22,470 --> 00:35:18,950
okay rms operator from cbm operator go

709
00:35:25,190 --> 00:35:22,480
for rms to maneuver elements

710
00:35:28,310 --> 00:35:25,200
ssrms operator copies go to maneuver

711
00:35:31,349 --> 00:35:29,910
this is mission control houston just to

712
00:35:32,470 --> 00:35:31,359
confirm the four latches that were

713
00:35:34,550 --> 00:35:32,480

holding the

714

00:35:37,190 --> 00:35:34,560

leonardo multipurpose logistics module

715

00:35:39,030 --> 00:35:37,200

onto the station have been retracted

716

00:35:40,550 --> 00:35:39,040

leonardo is now under the control of the

717

00:35:43,349 --> 00:35:40,560

station's robotic arm which is being

718

00:35:45,270 --> 00:35:43,359

flown by stephanie wilson

719

00:35:49,270 --> 00:35:45,280

as well as naoko yamazaki the two

720

00:35:50,870 --> 00:35:49,280

sts-131 mission specialists

721

00:35:52,870 --> 00:35:50,880

the robotics officer here in mission

722

00:35:54,790 --> 00:35:52,880

control confirming that leonardo is

723

00:36:06,390 --> 00:35:54,800

being moved toward discovery's payload

724

00:36:15,430 --> 00:36:09,190

houston station saw the big loop for

725

00:36:20,950 --> 00:36:18,230

a real successful uh teammate there and

726

00:36:22,550 --> 00:36:20,960

or got it at low hover and uh after all

727

00:36:23,829 --> 00:36:22,560

the troubleshooting today and looked

728

00:36:25,589 --> 00:36:23,839

around at some

729

00:36:27,670 --> 00:36:25,599

tired faces what do you guys say we call

730

00:36:30,310 --> 00:36:27,680

it a night and

731

00:36:33,030 --> 00:36:30,320

sleep in a little bit tomorrow uh an

732

00:36:35,829 --> 00:36:33,040

hour or so and then get going on this

733

00:36:38,630 --> 00:36:35,839

first thing in the morning

734

00:36:40,950 --> 00:36:38,640

a great job on both the station and the

735

00:36:43,190 --> 00:36:40,960

discovery team

736

00:36:45,190 --> 00:36:43,200

on the ground station team and shuttle

737

00:36:45,990 --> 00:36:45,200

team are in agreement

738

00:36:50,069 --> 00:36:46,000

to

739

00:36:52,710 --> 00:36:50,079

pause at this point in low hover

740

00:36:54,870 --> 00:36:52,720

for tomorrow we'll pick up in the mplm

741

00:36:57,829 --> 00:36:54,880

activities about a one and a half one

742

00:37:01,109 --> 00:36:57,839

hour and five minute uh arm ops

743

00:37:03,829 --> 00:37:01,119

followed by the uh doc laid inspection

744

00:37:07,109 --> 00:37:03,839

uh as you mentioned you can sleep in one

745

00:37:08,390 --> 00:37:07,119

hour or as late as one and a half hours

746

00:37:10,230 --> 00:37:08,400

your choice

747

00:37:12,150 --> 00:37:10,240

just let us know

748

00:37:14,710 --> 00:37:12,160

once again congratulations to the whole

749

00:37:18,550 --> 00:37:16,870

congratulations to all the teams in

750

00:37:19,430 --> 00:37:18,560

houston you guys did all the hard work

751
00:37:21,190 --> 00:37:19,440
today

752
00:37:23,430 --> 00:37:21,200
and we're just real happy that cbm

753
00:37:24,870 --> 00:37:23,440
worked at advertised

754
00:37:26,390 --> 00:37:24,880
that you're able to work through your

755
00:37:28,630 --> 00:37:26,400
troubleshooting procedures

756
00:37:30,310 --> 00:37:28,640
uh we will take you up on your offer to

757
00:37:35,349 --> 00:37:30,320
sleep in one hour early we'll set up our

758
00:37:41,270 --> 00:37:38,470
copy 900 1900 for the wake up time we

759
00:37:46,230 --> 00:37:41,280
just need saving on the arm and standard

760
00:37:53,430 --> 00:37:48,630
we're black station discovery uh

761
00:37:57,750 --> 00:37:55,270
the space station's robotic arm is now

762
00:37:59,750 --> 00:37:57,760
in motion getting ready to pack the

763
00:38:01,510 --> 00:37:59,760

leonardo multi-purpose logistics module

764

00:38:03,589 --> 00:38:01,520

into the shuttle's cargo bay for return

765

00:38:05,589 --> 00:38:03,599

to earth

766

00:38:08,310 --> 00:38:05,599

arms being controlled from the station's

767

00:38:10,310 --> 00:38:08,320

destiny laboratory robotic workstation

768

00:38:16,310 --> 00:38:10,320

by mission specialist stephanie wilson

769

00:38:22,870 --> 00:38:19,910

discovery recording is on

770

00:38:24,470 --> 00:38:22,880

discovery copies

771

00:38:26,950 --> 00:38:24,480

getting a view we don't normally get to

772

00:38:28,870 --> 00:38:26,960

see of the inspection of the shuttle's

773

00:38:30,790 --> 00:38:28,880

heat shield

774

00:38:33,510 --> 00:38:30,800

it's being performed before the shuttle

775

00:38:35,829 --> 00:38:33,520

undocks due to the fact that the

776

00:38:36,790 --> 00:38:35,839
shuttle's own ku band antenna

777

00:38:38,630 --> 00:38:36,800
is uh

778

00:38:40,870 --> 00:38:38,640
not working this mission so they're

779

00:38:42,470 --> 00:38:40,880
taking advantage of the station's ku

780

00:38:44,230 --> 00:38:42,480
band antenna which allows them to send

781

00:38:47,430 --> 00:38:44,240
large packets of information down to the

782

00:38:48,870 --> 00:38:47,440
ground and also video

783

00:38:51,270 --> 00:38:48,880
and that's necessary to get the

784

00:38:53,349 --> 00:38:51,280
information from the

785

00:38:55,190 --> 00:38:53,359
heat heat shield inspection down to the

786

00:38:57,349 --> 00:38:55,200
experts on the ground to then study it

787

00:38:59,589 --> 00:38:57,359
for any sign that discovery's heat

788

00:39:06,470 --> 00:38:59,599

shield might have been damaged while

789

00:39:09,510 --> 00:39:08,630

we started off late day 12

790

00:39:11,030 --> 00:39:09,520

with some

791

00:39:13,270 --> 00:39:11,040

international space station robotics

792

00:39:15,109 --> 00:39:13,280

operations to put the mplm back in the

793

00:39:18,150 --> 00:39:15,119

payload bay discovery

794

00:39:21,109 --> 00:39:18,160

in the previous day we are unversed mpln

795

00:39:23,190 --> 00:39:21,119

from the space station when we

796

00:39:26,950 --> 00:39:23,200

kept the mplm at the low hardware

797

00:39:30,230 --> 00:39:26,960

position and on friday 12 uh we versed

798

00:39:33,510 --> 00:39:30,240

and plm into the shadow of payroll bay

799

00:39:35,670 --> 00:39:33,520

so stephanie and i uh made a pair and to

800

00:39:37,829 --> 00:39:35,680

do the umbers and the birthing in the

801
00:39:39,990 --> 00:39:37,839
payroll day so this is a

802
00:39:42,630 --> 00:39:40,000
robotics working station in the u.s

803
00:39:45,750 --> 00:39:42,640
laboratory

804
00:39:47,990 --> 00:39:45,760
and the clearance between the mplm

805
00:39:50,630 --> 00:39:48,000
structure and the payload-based seal

806
00:39:53,990 --> 00:39:50,640
it's very tight only a couple inches

807
00:39:56,230 --> 00:39:54,000
so uh stephanie made a great job to you

808
00:39:57,430 --> 00:39:56,240
know steady control the hand controls

809
00:40:13,670 --> 00:39:57,440
and

810
00:40:16,870 --> 00:40:13,680
mplm into the payload bay

811
00:40:20,870 --> 00:40:16,880
then uh jim and dex and i put the perlis

812
00:40:22,390 --> 00:40:20,880
on which latches the mplm firmly into

813
00:40:24,710 --> 00:40:22,400

the palo bay

814

00:40:27,109 --> 00:40:24,720

later we spent the whole morning and

815

00:40:29,030 --> 00:40:27,119

doing our final thermal protection

816

00:40:31,270 --> 00:40:29,040

system scan

817

00:40:32,630 --> 00:40:31,280

and this was our starboard side which

818

00:40:34,950 --> 00:40:32,640

had the most

819

00:40:37,430 --> 00:40:34,960

tight clearances and it also took the

820

00:40:42,470 --> 00:40:39,910

well this is our first time uh executing

821

00:40:45,109 --> 00:40:42,480

the doc late inspection as a team and

822

00:40:47,349 --> 00:40:45,119

um it went really well thanks to the the

823

00:40:48,870 --> 00:40:47,359

larger team that helped us to prepare um

824

00:40:51,030 --> 00:40:48,880

it was pretty impressive to see some of

825

00:40:54,470 --> 00:40:51,040

the clearances which got down to as low

826

00:40:55,190 --> 00:40:54,480

as uh 19 inches for the shuttle arm to

827

00:40:57,270 --> 00:40:55,200

the

828

00:41:00,150 --> 00:40:57,280

gem structure but we had some great

829

00:41:02,150 --> 00:41:00,160

clearance views thanks to the spdm and

830

00:41:04,870 --> 00:41:02,160

the tip lee that were able to keep it

831

00:41:07,190 --> 00:41:04,880

clear we had decks down in the cupola a

832

00:41:09,990 --> 00:41:07,200

lot of the time helping us out and went

833

00:41:14,230 --> 00:41:11,750

and thanks to the combined work of the

834

00:41:16,230 --> 00:41:14,240

robotics teams and the photo tv teams

835

00:41:17,829 --> 00:41:16,240

and the

836

00:41:19,190 --> 00:41:17,839

folks who pv the procedure the

837

00:41:21,829 --> 00:41:19,200

operations went very well and very

838

00:41:22,630 --> 00:41:21,839

smoothly we were able to finish on time

839

00:41:24,150 --> 00:41:22,640

and

840

00:41:26,870 --> 00:41:24,160

here's

841

00:41:28,230 --> 00:41:26,880

some a view from the mid deck

842

00:41:31,270 --> 00:41:28,240

this is how we actually get between the

843

00:41:33,030 --> 00:41:31,280

mid deck and the flight deck

844

00:41:36,069 --> 00:41:33,040

since we were finished early we had some

845

00:41:37,109 --> 00:41:36,079

time to spend

846

00:41:38,950 --> 00:41:37,119

with our

847

00:41:40,950 --> 00:41:38,960

friends and the international space

848

00:41:43,349 --> 00:41:40,960

station crew also came over so we had

849

00:41:45,270 --> 00:41:43,359

some time to share with them so this is

850

00:41:52,790 --> 00:41:45,280

just a little bit of down time while

851
00:41:57,829 --> 00:41:55,670
and we have a cycle ergometer so a few

852
00:41:59,589 --> 00:41:57,839
of us had a chance to exercise and very

853
00:42:04,309 --> 00:41:59,599
important to keep our bones and

854
00:42:08,710 --> 00:42:07,030
this is uh clay goofing off with

855
00:42:10,230 --> 00:42:08,720
dottie and

856
00:42:12,230 --> 00:42:10,240
we're playing a little bit with the

857
00:42:14,950 --> 00:42:12,240
conservation of angular momentum and you

858
00:42:16,550 --> 00:42:14,960
see that as she pulls herself in tighter

859
00:42:18,309 --> 00:42:16,560
she spins faster and then when she

860
00:42:20,309 --> 00:42:18,319
spreads out she slows down it's just a

861
00:42:22,630 --> 00:42:20,319
great opportunity you really can't do

862
00:42:30,550 --> 00:42:22,640
this in the classroom on earth so we do

863
00:42:34,790 --> 00:42:32,550

and i think i'm getting ready for the

864

00:42:35,990 --> 00:42:34,800

olympics

865

00:42:39,109 --> 00:42:36,000

i'm not sure which one i'm going to go

866

00:42:41,670 --> 00:42:39,119

for winter i got the ice skating earlier

867

00:42:47,430 --> 00:42:41,680

and uh looks like he may be able to make

868

00:42:50,710 --> 00:42:49,030

it is great to have the crew get some

869

00:42:53,430 --> 00:42:50,720

down time after a

870

00:42:56,230 --> 00:42:53,440

long docked period and uh lots of hard

871

00:42:58,710 --> 00:42:56,240

work and uh got the document inspection

872

00:43:00,470 --> 00:42:58,720

done early and again we got to have some

873

00:43:03,670 --> 00:43:00,480

down time again these are some more mid

874

00:43:07,030 --> 00:43:05,270

and this is uh

875

00:43:09,109 --> 00:43:07,040

this is some activity that happens late

876
00:43:23,829 --> 00:43:09,119
in the day every day and we end up doing

877
00:43:28,550 --> 00:43:25,270
yeah one of the great things we get to

878
00:43:30,870 --> 00:43:28,560
do with our international space station

879
00:43:31,829 --> 00:43:30,880
uh comrades here is to have dinner with

880
00:43:33,510 --> 00:43:31,839
them every once in a while i think this

881
00:43:34,950 --> 00:43:33,520
was the third major meal that we shared

882
00:43:36,230 --> 00:43:34,960
with them and it's probably the last big

883
00:43:37,829 --> 00:43:36,240
one we'll

884
00:43:39,670 --> 00:43:37,839
before undock

885
00:43:41,990 --> 00:43:39,680
so we have all the russian cosmonauts

886
00:43:43,829 --> 00:43:42,000
and of course suici tj and tracy and all

887
00:43:46,230 --> 00:43:43,839
of us gather around their table their

888
00:43:48,550 --> 00:43:46,240

dinner table in node one for a big meal

889

00:43:54,069 --> 00:43:48,560

and it's great to swap stories and to

890

00:43:58,710 --> 00:43:56,790

last night we also got to do something

891

00:44:01,349 --> 00:43:58,720

that's a tradition now for every shuttle

892

00:44:03,910 --> 00:44:01,359

flight we got to put our mission patch

893

00:44:06,630 --> 00:44:03,920

onto the one of the panels in node one

894

00:44:09,829 --> 00:44:06,640

and we all got our pictures taken by it

895

00:44:11,910 --> 00:44:09,839

and also added our patch to the airlock

896

00:44:14,069 --> 00:44:11,920

and signed it as is the tradition so it

897

00:44:15,589 --> 00:44:14,079

was a lot of fun to be able to be a part

898

00:44:18,309 --> 00:44:15,599

of that

899

00:44:27,829 --> 00:44:18,319

here is dex putting the

900

00:44:32,150 --> 00:44:29,510

the commander of the space station is

901
00:44:34,390 --> 00:44:32,160
just a wonderful guy and a great partner

902
00:44:36,630 --> 00:44:34,400
and a wonderful friend

903
00:44:38,390 --> 00:44:36,640
and they were very gracious hosts

904
00:44:40,390 --> 00:44:38,400
to uh have uh seven of us stumbling

905
00:44:42,870 --> 00:44:40,400
around in their house for uh

906
00:44:44,470 --> 00:44:42,880
the last seven or eight days they uh

907
00:44:45,510 --> 00:44:44,480
they've just uh just been wonderful

908
00:44:46,230 --> 00:44:45,520
folks and

909
00:44:56,230 --> 00:44:46,240
have

910
00:44:59,030 --> 00:44:56,240
say goodbye our friends and colleagues

911
00:45:01,349 --> 00:44:59,040
um it's an excellent career

912
00:45:02,630 --> 00:45:01,359
shuttle discovery

913
00:45:06,309 --> 00:45:02,640

flight

914

00:45:08,069 --> 00:45:06,319

19a which uh did excellent job

915

00:45:11,030 --> 00:45:08,079

uh we enjoyed

916

00:45:12,870 --> 00:45:11,040

working with them and uh

917

00:45:15,190 --> 00:45:12,880

they really really

918

00:45:17,349 --> 00:45:15,200

said to

919

00:45:19,349 --> 00:45:17,359

let them go but it's time and again

920

00:45:21,270 --> 00:45:19,359

let's let me

921

00:45:25,190 --> 00:45:21,280

say again as thank you very much really

922

00:45:25,200 --> 00:45:34,069

your job you did for us thanks a lot

923

00:45:37,670 --> 00:45:35,670

thanks alec uh

924

00:45:41,190 --> 00:45:37,680

this has been a just a wonderful stay

925

00:45:43,990 --> 00:45:41,200

for uh for the shuttle discovery crew

926
00:45:45,270 --> 00:45:44,000
we've had a very successful dock mission

927
00:45:46,950 --> 00:45:45,280
and uh

928
00:45:48,790 --> 00:45:46,960
and that is in large part due to the

929
00:45:50,790 --> 00:45:48,800
preparation that uh that you and your

930
00:45:53,510 --> 00:45:50,800
crew did ahead of time

931
00:45:56,390 --> 00:45:53,520
uh the pre-pack was uh amazing we were

932
00:45:57,589 --> 00:45:56,400
able to come in and uh you treated us

933
00:46:00,150 --> 00:45:57,599
just with the

934
00:46:02,150 --> 00:46:00,160
utmost hospitality and we felt welcomed

935
00:46:03,589 --> 00:46:02,160
the whole time we hoped we didn't tear

936
00:46:04,950 --> 00:46:03,599
up your house too much

937
00:46:06,790 --> 00:46:04,960
we tried to do a good job of cleaning

938
00:46:08,710 --> 00:46:06,800

when we left

939

00:46:11,349 --> 00:46:08,720

if you if we leave anything behind you

940

00:46:13,349 --> 00:46:11,359

can bring it with you at home but

941

00:46:15,510 --> 00:46:13,359

no it was a great doc mission and uh

942

00:46:17,430 --> 00:46:15,520

very successful and we had three three

943

00:46:18,950 --> 00:46:17,440

just uh outstanding evas and a lot of

944

00:46:21,190 --> 00:46:18,960

great robotics and

945

00:46:24,390 --> 00:46:21,200

and uh the transfer team was uh just

946

00:46:26,069 --> 00:46:24,400

fantastic and again i wanted to thank uh

947

00:46:28,230 --> 00:46:26,079

you and your crew for all the help you

948

00:46:31,670 --> 00:46:28,240

gave us with transfer i think suicide

949

00:46:33,750 --> 00:46:31,680

spent about half his time in the mplm

950

00:46:36,710 --> 00:46:33,760

packing bags and helping us unpack so it

951
00:46:39,030 --> 00:46:36,720
was just great and we're sorry to go

952
00:46:40,870 --> 00:46:39,040
and i know we'd all like to stay much

953
00:46:42,390 --> 00:46:40,880
longer but we had to let you guys get

954
00:46:44,870 --> 00:46:42,400
back to your normal routine

955
00:46:46,870 --> 00:46:44,880
and get ready for ulf4 so

956
00:46:49,190 --> 00:46:46,880
with that we want to say thanks again

957
00:47:14,150 --> 00:46:49,200
and we hope to see you soon back home

958
00:47:18,150 --> 00:47:16,790
houston and station discovery physical

959
00:47:21,190 --> 00:47:18,160
separation

960
00:47:27,990 --> 00:47:21,200
houston copies

961
00:47:28,000 --> 00:47:46,549
discovery departing

962
00:48:11,670 --> 00:47:48,390
another sequential still video view of

963
00:48:16,069 --> 00:48:13,910

good view of discovery here still 73

964

00:48:19,750 --> 00:48:16,079

miles away from kennedy space center

965

00:48:19,760 --> 00:48:30,150

traveling 1700 miles per hour

966

00:48:35,430 --> 00:48:32,950

discovery houston you are on energy

967

00:48:36,710 --> 00:48:35,440

approaching the hack no changes to winds

968

00:48:42,390 --> 00:48:36,720

and weather

969

00:49:02,950 --> 00:48:44,950

and commander alan poindexter is now at

970

00:49:06,230 --> 00:49:04,710

sonic booms announcing discovery's

971

00:49:08,150 --> 00:49:06,240

arrival it's now

972

00:49:09,750 --> 00:49:08,160

just 68 miles away from kennedy space

973

00:49:12,790 --> 00:49:09,760

center

974

00:49:15,990 --> 00:49:12,800

27 000 feet in altitude and

975

00:49:19,510 --> 00:49:16,000

traveling 530 miles per hour discovery

976
00:49:19,520 --> 00:49:37,990
on at the 180.

977
00:49:41,510 --> 00:49:39,270
less than a minute and a half until

978
00:49:43,670 --> 00:49:41,520
touchdown discovery is now descending at

979
00:49:46,470 --> 00:49:43,680
a rate 20 times higher and seven times

980
00:49:54,950 --> 00:49:46,480
steeper than what a commercial airline

981
00:49:58,470 --> 00:49:56,870
one minute now touchdown discovery's

982
00:50:08,309 --> 00:49:58,480
landing gear will be locked down and

983
00:50:13,829 --> 00:50:12,069
it's currently 3500 feet

984
00:50:16,069 --> 00:50:13,839
and

985
00:50:21,910 --> 00:50:16,079
traveling at a rate of 370 miles per

986
00:50:21,920 --> 00:50:43,430
30 seconds until touchdown

987
00:51:06,390 --> 00:50:45,910
main gear

988
00:51:06,400 --> 00:51:11,270

nose gear touchdown

989

00:51:16,069 --> 00:51:13,589

that brings an end to the sts-131

990

00:51:18,150 --> 00:51:16,079

mission the 131st space shuttle flight

991

00:51:23,829 --> 00:51:18,160

and the 33rd to the international space

992

00:51:29,030 --> 00:51:26,470

discovery left florida on april 5th with

993

00:51:30,710 --> 00:51:29,040

7.6 tons of new science equipment and

994

00:51:31,829 --> 00:51:30,720

spare parts including

995

00:51:33,430 --> 00:51:31,839

equipment that should improve the

996

00:51:35,349 --> 00:51:33,440

station's capability for earth

997

00:51:37,670 --> 00:51:35,359

observation work equipment that could

998

00:51:39,349 --> 00:51:37,680

help astronauts avoid muscle atrophy

999

00:51:41,349 --> 00:51:39,359

and scientists better understand muscle

1000

00:51:42,710 --> 00:51:41,359

atrophy and equipment that will help

1001
00:51:46,470 --> 00:51:42,720
keep the station systems cooling

1002
00:51:50,150 --> 00:51:48,390
discovery brings some with it the last

1003
00:51:52,710 --> 00:51:50,160
large return load from the station two

1004
00:51:55,750 --> 00:51:52,720
tons of used equipment

1005
00:51:57,990 --> 00:51:55,760
roger wheel stop discovery welcome home

1006
00:52:00,230 --> 00:51:58,000
dex congratulations to you and the crew

1007
00:52:01,829 --> 00:52:00,240
on an outstanding mission

1008
00:52:04,390 --> 00:52:01,839
there are no immediate post landing

1009
00:52:07,670 --> 00:52:04,400
deltas we'll meet you on page 5-3 of the

1010
00:52:11,349 --> 00:52:09,349
here's the discovery thanks for those

1011
00:52:13,349 --> 00:52:11,359
words cj it was a great mission we

1012
00:52:16,230 --> 00:52:13,359
enjoyed it we enjoyed working with you

1013
00:52:17,510 --> 00:52:16,240

and all the teams in mission control

1014

00:52:19,750 --> 00:52:17,520

and we're glad that the international

1015

00:52:34,230 --> 00:52:19,760

space station is stocked up again thanks

1016

00:52:39,510 --> 00:52:37,750

here come our sts-131 astronauts being

1017

00:52:42,309 --> 00:52:39,520

greeted by

1018

00:52:43,670 --> 00:52:42,319

lori garver

1019

00:52:45,750 --> 00:52:43,680

ksb

1020

00:52:47,270 --> 00:52:45,760

director bob cabana greeting our

1021

00:52:51,270 --> 00:52:47,280

commander

1022

00:52:58,150 --> 00:52:53,750

director of the

1023

00:53:01,510 --> 00:52:58,160

japanese space agency jaxa

1024

00:53:02,710 --> 00:53:01,520

was astronaut rick mastracchio

1025

00:53:04,790 --> 00:53:02,720

toddy

1026

00:53:23,270 --> 00:53:04,800

metcalfe lindenberger

1027

00:53:23,280 --> 00:53:26,150

good morning

1028

00:53:29,670 --> 00:53:27,589

it's great to be back at the kennedy

1029

00:53:31,670 --> 00:53:29,680

space center with discovery

1030

00:53:33,750 --> 00:53:31,680

it was a beautiful entry this morning

1031

00:53:35,990 --> 00:53:33,760

we've got the bonus of uh coming over

1032

00:53:37,750 --> 00:53:36,000

the entire united states

1033

00:53:40,230 --> 00:53:37,760

and it was just absolutely gorgeous the

1034

00:53:42,630 --> 00:53:40,240

entire entry track took us over the

1035

00:53:44,390 --> 00:53:42,640

rockies and over the midwest and across

1036

00:53:48,710 --> 00:53:44,400

the mississippi delta and

1037

00:53:52,790 --> 00:53:50,549

the landing back here at kennedy space

1038

00:53:54,630 --> 00:53:52,800

center was really nice

1039

00:53:55,670 --> 00:53:54,640

it's a beautiful day and it was a great

1040

00:53:57,109 --> 00:53:55,680

mission

1041

00:53:59,190 --> 00:53:57,119

and we're just happy to be back here in

1042

00:54:01,109 --> 00:53:59,200

florida with uh with discovery i'm gonna

1043

00:54:03,430 --> 00:54:01,119

let the rest of the crew come up and say

1044

00:54:05,670 --> 00:54:03,440

just a few words but thanks for thanks

1045

00:54:12,710 --> 00:54:05,680

to everybody for all of their support

1046

00:54:17,190 --> 00:54:14,630

well it was just an incredible mission

1047

00:54:20,390 --> 00:54:17,200

from start to finish uh the launch

1048

00:54:23,190 --> 00:54:20,400

uh having a orbital sunrise during our

1049

00:54:24,870 --> 00:54:23,200

ascend into orbit it was incredible

1050

00:54:26,630 --> 00:54:24,880

we had our share of challenges up there

1051

00:54:28,549 --> 00:54:26,640

but the larger team just did an

1052

00:54:31,109 --> 00:54:28,559

incredible job supporting us and we owe

1053

00:54:37,190 --> 00:54:31,119

them greatly for all they did for us so

1054

00:54:41,190 --> 00:54:38,870

well thanks for uh thanks for being here

1055

00:54:43,510 --> 00:54:41,200

we had a great mission like like uh jim

1056

00:54:45,190 --> 00:54:43,520

and dex said we had our challenges we

1057

00:54:46,789 --> 00:54:45,200

had our eva challenges where some of the

1058

00:54:48,390 --> 00:54:46,799

hardware gave us a little bit of trouble

1059

00:54:49,510 --> 00:54:48,400

but i think we got all the big tasks

1060

00:54:55,589 --> 00:54:49,520

done and we're very happy with

1061

00:55:01,030 --> 00:54:58,230

hi i'm donnie metcalf lindenberger ms2

1062

00:55:03,109 --> 00:55:01,040

for the flight and uh what an incredible

1063

00:55:05,430 --> 00:55:03,119

morning to be out here i can't believe

1064

00:55:07,430 --> 00:55:05,440

that a few days ago we were looking down

1065

00:55:08,950 --> 00:55:07,440

on this part of the united states and it

1066

00:55:10,870 --> 00:55:08,960

was so beautiful

1067

00:55:13,349 --> 00:55:10,880

and i want to say thanks to all of the

1068

00:55:14,789 --> 00:55:13,359

people that made this possible

1069

00:55:17,910 --> 00:55:14,799

and we hope that we've made the

1070

00:55:18,829 --> 00:55:17,920

international space station ready for

1071

00:55:21,190 --> 00:55:18,839

future

1072

00:55:22,870 --> 00:55:21,200

exploration and i just again want to say

1073

00:55:29,910 --> 00:55:22,880

thank you and it's great to be back on

1074

00:55:34,309 --> 00:55:32,390

hi i'm stephanie wilson and it's been an

1075

00:55:36,230 --> 00:55:34,319

incredible journey we had a great time

1076
00:55:37,589 --> 00:55:36,240
it was a wonderful mission we enjoyed

1077
00:55:38,549 --> 00:55:37,599
our time with the international space

1078
00:55:39,990 --> 00:55:38,559
station

1079
00:55:42,230 --> 00:55:40,000
we were able to complete all the mission

1080
00:55:44,390 --> 00:55:42,240
objectives and so we're very grateful to

1081
00:55:46,390 --> 00:55:44,400
all the teams across our nasa

1082
00:55:47,910 --> 00:55:46,400
international partner centers

1083
00:55:50,069 --> 00:55:47,920
especially johnson space center and the

1084
00:55:51,910 --> 00:55:50,079
kennedy space center us kennedy space

1085
00:55:53,990 --> 00:55:51,920
center thanks so much for uh readying

1086
00:55:56,309 --> 00:55:54,000
discovery for us and making her such a

1087
00:55:57,910 --> 00:55:56,319
wonderful bird folks here work very hard

1088
00:55:59,910 --> 00:55:57,920

and we're just very thankful to all the

1089

00:56:08,390 --> 00:55:59,920

teams that made this mission possible

1090

00:56:13,430 --> 00:56:10,710

hello i'm naoko yamazaki mission

1091

00:56:16,309 --> 00:56:13,440

specialist of sts-131

1092

00:56:18,870 --> 00:56:16,319

it is such a great pleasure to be able

1093

00:56:21,270 --> 00:56:18,880

to work with thousands of millions of

1094

00:56:25,270 --> 00:56:21,280

people during the mission and during the

1095

00:56:27,990 --> 00:56:25,280

preparation period and i'm so glad we

1096

00:56:29,910 --> 00:56:28,000

could come back home safe

1097

00:56:50,470 --> 00:56:29,920

so thank you so much i really really

1098

00:56:50,480 --> 00:56:59,190

thank you very much

1099

00:57:04,549 --> 00:57:01,190

hi my name is clayton anderson and i was

1100

00:57:05,829 --> 00:57:04,559

ms-5 on this flight and ev2 and was

1101
00:57:07,910 --> 00:57:05,839
fortunate enough to have the opportunity

1102
00:57:09,589 --> 00:57:07,920
to go outside three times we had a lot

1103
00:57:11,349 --> 00:57:09,599
of adversity but we overcame it all with

1104
00:57:13,910 --> 00:57:11,359
some great teamwork

1105
00:57:16,069 --> 00:57:13,920
it's been a wonderful experience for me

1106
00:57:17,349 --> 00:57:16,079
i've had two homecomings this flight i

1107
00:57:19,190 --> 00:57:17,359
got to go home to the international

1108
00:57:22,309 --> 00:57:19,200
space station and now i get to come home

1109
00:57:24,150 --> 00:57:22,319
to ksc and to all of you who helped get

1110
00:57:25,190 --> 00:57:24,160
us up and bring us back thank you so

1111
00:57:41,349 --> 00:57:25,200
very much

1112
00:57:44,549 --> 00:57:42,549
and the

1113
00:57:45,670 --> 00:57:44,559

crew now will

1114

00:57:47,589 --> 00:57:45,680

pause a

1115

00:57:49,829 --> 00:57:47,599

for brief moments for

1116

00:57:51,109 --> 00:57:49,839

pictures and then they will

1117

00:57:54,150 --> 00:57:51,119

board the

1118

00:57:57,589 --> 00:57:54,160

astrovan the astronaut transfer van to

1119

00:57:59,670 --> 00:57:57,599

go back to the astronaut quarters

1120

00:58:01,030 --> 00:57:59,680

crew orders where they will

1121

00:58:03,670 --> 00:58:01,040

have a more thorough physical

1122

00:58:05,030 --> 00:58:03,680

examination have a debriefing

1123

00:58:06,710 --> 00:58:05,040

meet with their