1
00:00:06,869 --> 00:00:03,110
discovery in iss this is houston are you

2
00:00:12,070 --> 00:00:09,629
we are ready houston

3
00:00:15,669 --> 00:00:12,080
jscpao this is houston please call

4
00:00:22,310 --> 00:00:15,679
discovery and iss for a voice check

5
00:00:26,070 --> 00:00:24,390
we hear you loud and clear welcome

6
00:00:26,950 --> 00:00:26,080
aboard the international space station

7
00:00:29,349 --> 00:00:26,960
rob

8
00:00:32,709 --> 00:00:29,359
be with you scott and crew and we'll

9
00:00:35,110 --> 00:00:32,719
start off questions with robert perlman

10
00:00:36,790 --> 00:00:35,120
hi robert perlman with collectspace.com

11
00:00:39,990 --> 00:00:36,800
with a question for commander steve

12
00:00:42,150 --> 00:00:40,000
lindsey and his uh discovery crewmates

13
00:00:44,389 --> 00:00:42,160

outside of times when the media like

14
00:00:45,590 --> 00:00:44,399
myself ask about this being discovery's

15
00:00:47,670 --> 00:00:45,600
last mission

16
00:00:49,190 --> 00:00:47,680
how prevalent has the finality of this

17
00:00:51,189 --> 00:00:49,200
flight been during the course of your

18
00:00:53,029 --> 00:00:51,199
mission have there been specific times

19
00:00:59,510 --> 00:00:53,039
where the legacy and history of the

20
00:01:03,189 --> 00:01:01,110
well that's a that's a difficult

21
00:01:05,030 --> 00:01:03,199
question um

22
00:01:06,950 --> 00:01:05,040
we've been very busy during our mission

23
00:01:08,950 --> 00:01:06,960
as all shuttle missions are in space

24
00:01:11,270 --> 00:01:08,960
station missions and so mostly we've

25
00:01:14,310 --> 00:01:11,280
been probably spent spending 95 percent

26
00:01:16,390 --> 00:01:14,320
of our time to 99 on just doing the work

27
00:01:17,670 --> 00:01:16,400
and uh and getting the work done and and

28
00:01:19,190 --> 00:01:17,680
so when you're really busy like that

29
00:01:21,270 --> 00:01:19,200
you're focusing on doing the tasks doing

30
00:01:22,950 --> 00:01:21,280
the tasks correctly making sure you uh

31
00:01:25,350 --> 00:01:22,960
you get everything done how it's

32
00:01:26,870 --> 00:01:25,360
supposed to done and don't miss anything

33
00:01:28,390 --> 00:01:26,880
however there are times i know

34
00:01:30,630 --> 00:01:28,400
personally when i've been reflecting

35
00:01:32,870 --> 00:01:30,640
about it being the last mission and what

36
00:01:34,390 --> 00:01:32,880
a wonderful vehicle it is and probably

37
00:01:36,550 --> 00:01:34,400
you know we were coming up and docking

38
00:01:38,310 --> 00:01:36,560

and when you look out the cupola windows

39
00:01:40,230 --> 00:01:38,320
you can look right into discovery's

40
00:01:42,069 --> 00:01:40,240
payload bay and see the wings and see

41
00:01:44,310 --> 00:01:42,079
discovery written on the wings and times

42
00:01:46,389 --> 00:01:44,320
like that i really reflect about

43
00:01:49,270 --> 00:01:46,399
what a great vehicle it's been 39

44
00:01:51,830 --> 00:01:49,280
missions uh nearly one year on orbit and

45
00:01:54,550 --> 00:01:51,840
uh think about all the things that that

46
00:01:56,310 --> 00:01:54,560
vehicle has done and it's just really

47
00:01:58,950 --> 00:01:56,320
inspiring to me and and kind of

48
00:02:01,109 --> 00:01:58,960
bittersweet um and and quite frankly sad

49
00:02:04,630 --> 00:02:01,119
that that knowing that when we land that

50
00:02:10,309 --> 00:02:07,030
thank you and and to follow up on that

51
00:02:11,830 --> 00:02:10,319
a question for steve bowen and al drew

52
00:02:14,150 --> 00:02:11,840
they say a picture is worth a thousand

53
00:02:15,030 --> 00:02:14,160
words and through your helmet cam we got

54
00:02:17,190 --> 00:02:15,040
to see

55
00:02:18,550 --> 00:02:17,200
when you took a glance at discovery uh

56
00:02:20,390 --> 00:02:18,560
docked to the station during your

57
00:02:22,630 --> 00:02:20,400
spacewalks

58
00:02:25,430 --> 00:02:22,640
would you uh one or both of you describe

59
00:02:28,869 --> 00:02:25,440
what it was like uh to see discovery

60
00:02:36,630 --> 00:02:28,879
there and uh and reflect on its

61
00:02:40,229 --> 00:02:38,630
a lot of us captured repeated what steve

62
00:02:41,589 --> 00:02:40,239
had from the cupola just to have

63
00:02:43,830 --> 00:02:41,599

discovery right there and filling our

64
00:02:45,990 --> 00:02:43,840
entire visor up close and personal you

65
00:02:48,790 --> 00:02:46,000
realize it's just a magnificent ship

66
00:02:50,550 --> 00:02:48,800
it's huge it's complex just a wonderful

67
00:02:52,309 --> 00:02:50,560
completely capable vehicle

68
00:02:54,229 --> 00:02:52,319
and to be out there

69
00:02:55,830 --> 00:02:54,239
working on around near is just a

70
00:02:58,550 --> 00:02:55,840
privilege to be part of the legacy of

71
00:03:03,670 --> 00:02:58,560
discovery is just a i guess it just

72
00:03:07,990 --> 00:03:05,670
this is gera dauma the german aerospace

73
00:03:09,990 --> 00:03:08,000
center and space expo association

74
00:03:11,910 --> 00:03:10,000
question for el drew what was the most

75
00:03:19,430 --> 00:03:11,920
difficult and the most exciting moment

76
00:03:23,910 --> 00:03:21,589
uh that's easy they were both the same

77
00:03:26,149 --> 00:03:23,920
uh when i first exited the airlock on my

78
00:03:27,509 --> 00:03:26,159
first eva uh we were over top the

79
00:03:30,309 --> 00:03:27,519
jungles that looked like it was maybe

80
00:03:32,149 --> 00:03:30,319
south america the amazon basin somewhere

81
00:03:34,309 --> 00:03:32,159
just beautiful the clouds the river

82
00:03:36,149 --> 00:03:34,319
valleys down there all the greenery and

83
00:03:37,589 --> 00:03:36,159
i had to remind myself that i had work

84
00:03:38,630 --> 00:03:37,599
to do and i couldn't just take in the

85
00:03:40,229 --> 00:03:38,640
scenery

86
00:03:41,830 --> 00:03:40,239
so it's exciting and it was difficult to

87
00:03:43,589 --> 00:03:41,840
tear my eyes away from that and actually

88
00:03:46,390 --> 00:03:43,599

focus on getting things ready for our

89
00:03:49,030 --> 00:03:46,400
tasks ahead

90
00:03:50,869 --> 00:03:49,040
question for paolo you accomplished

91
00:03:52,869 --> 00:03:50,879
about half of your long duration mission

92
00:03:54,789 --> 00:03:52,879
what was your most challenging task and

93
00:04:03,030 --> 00:03:54,799
did you have any surprises and what was

94
00:04:07,509 --> 00:04:05,270
well it's been a pleasure so far here

95
00:04:09,350 --> 00:04:07,519
we've been spent uh yeah two months uh

96
00:04:12,789 --> 00:04:09,360
expedition 26

97
00:04:15,030 --> 00:04:12,799
and uh i think the most challenging

98
00:04:17,270 --> 00:04:15,040
time here it's not there is not really a

99
00:04:18,789 --> 00:04:17,280
time i mean it's the challenge is when i

100
00:04:20,789 --> 00:04:18,799
look at a procedure for the first time

101
00:04:22,790 --> 00:04:20,799
it looks very complex and i try to

102
00:04:24,870 --> 00:04:22,800
understand and interpret it try to do it

103
00:04:25,590 --> 00:04:24,880
without making mistakes and sometimes i

104
00:04:26,550 --> 00:04:25,600
do

105
00:04:27,350 --> 00:04:26,560
uh

106
00:04:29,270 --> 00:04:27,360
so

107
00:04:32,469 --> 00:04:29,280
i think those are the for me are the

108
00:04:34,790 --> 00:04:32,479
most uh challenging times but uh as

109
00:04:37,270 --> 00:04:34,800
usual with the familiarity we're

110
00:04:39,990 --> 00:04:37,280
repeating things things get familiar and

111
00:04:42,230 --> 00:04:40,000
uh we get to do it with no problems and

112
00:04:44,790 --> 00:04:42,240
of course we always have the ground

113
00:04:49,590 --> 00:04:44,800

control mission control helping us and

114
00:04:53,909 --> 00:04:51,350
this is jill tulk representing the

115
00:04:56,310 --> 00:04:53,919
cohasset mariner in massachusetts a

116
00:04:58,469 --> 00:04:56,320
question for the east coast steve what

117
00:05:00,150 --> 00:04:58,479
has been the most challenging part and

118
00:05:06,950 --> 00:05:00,160
the most rewarding part of your

119
00:05:10,950 --> 00:05:08,950
i think the most challenging part was

120
00:05:13,189 --> 00:05:10,960
trying to get up to speed to understand

121
00:05:15,110 --> 00:05:13,199
the evas and then

122
00:05:16,629 --> 00:05:15,120
even more so trying to get them to speed

123
00:05:18,230 --> 00:05:16,639
with everything else that goes on on a

124
00:05:20,390 --> 00:05:18,240
shuttle flight and where my tasks would

125
00:05:21,990 --> 00:05:20,400
be and what they were and how familiar i

126
00:05:23,350 --> 00:05:22,000
was with them and how much more training

127
00:05:25,590 --> 00:05:23,360
i had to have so

128
00:05:26,710 --> 00:05:25,600
that was uh clearly the most difficult

129
00:05:28,230 --> 00:05:26,720
part of it

130
00:05:30,070 --> 00:05:28,240
uh

131
00:05:32,790 --> 00:05:30,080
the the best part really was you know

132
00:05:34,710 --> 00:05:32,800
getting to to work with the crews uh

133
00:05:37,510 --> 00:05:34,720
four of my classmates from

134
00:05:40,070 --> 00:05:37,520
uh 2000 and uh commander steve lindsey

135
00:05:41,510 --> 00:05:40,080
and that's been great uh great crew just

136
00:05:43,189 --> 00:05:41,520
having the ability to spend time with

137
00:05:45,430 --> 00:05:43,199
them it's been fantastic and then

138
00:05:49,590 --> 00:05:45,440

getting up here with the iss crew it's

139
00:05:54,469 --> 00:05:51,909
thanks for the good word stevo now a

140
00:05:57,590 --> 00:05:54,479
question for the west coast steve and

141
00:05:59,510 --> 00:05:57,600
for eric beau what good bowen anecdote

142
00:06:07,830 --> 00:05:59,520
from this week could you share with

143
00:06:07,840 --> 00:06:13,510
we're consulting hang on

144
00:06:18,309 --> 00:06:16,070
i i i think the favorite uh our favorite

145
00:06:20,550 --> 00:06:18,319
uh steve bowen's toy for uh for this

146
00:06:22,070 --> 00:06:20,560
mission so far was i'm sure there are

147
00:06:23,189 --> 00:06:22,080
more to come

148
00:06:28,550 --> 00:06:23,199
was

149
00:06:31,510 --> 00:06:28,560
module off of uh off of a a transporter

150
00:06:33,350 --> 00:06:31,520
on the on the truss segment uh eva and

151
00:06:35,909 --> 00:06:33,360
mike barrett and scott kelly were

152
00:06:37,590 --> 00:06:35,919
driving him on the robotic arm

153
00:06:38,550 --> 00:06:37,600
about the time they released that pump

154
00:06:40,150 --> 00:06:38,560
module

155
00:06:42,550 --> 00:06:40,160
which about a uh

156
00:06:44,230 --> 00:06:42,560
several hundred pounds for steve to uh

157
00:06:46,150 --> 00:06:44,240
to take in his arm so they could fly him

158
00:06:48,469 --> 00:06:46,160
over to where it belonged

159
00:06:51,189 --> 00:06:48,479
the the entire uh space station robotic

160
00:06:54,309 --> 00:06:51,199
arm crashed and uh which means he was

161
00:06:56,230 --> 00:06:54,319
stuck there holding this uh payload for

162
00:06:58,390 --> 00:06:56,240
not for for what seemed like a really

163
00:07:00,790 --> 00:06:58,400

long time for him but actually uh the

164
00:07:02,629 --> 00:07:00,800
crew did a great job reconfiguring to an

165
00:07:04,790 --> 00:07:02,639
alternate to robotic workstation to get

166
00:07:06,150 --> 00:07:04,800
it back alive pretty quickly but steve

167
00:07:08,390 --> 00:07:06,160
was stuck there for probably i don't

168
00:07:09,350 --> 00:07:08,400
know 30 35 minutes holding this pump

169
00:07:11,990 --> 00:07:09,360
module

170
00:07:14,150 --> 00:07:12,000
loose and so it gave us an opportunity

171
00:07:16,150 --> 00:07:14,160
to uh to joke with him and kind of make

172
00:07:27,350 --> 00:07:16,160
fun of him while he was out there stuck

173
00:07:31,670 --> 00:07:29,670
hey and i just want to add one story for

174
00:07:34,469 --> 00:07:31,680
steve and that's just from today we're

175
00:07:36,390 --> 00:07:34,479
we're outfitting the the pmm you know

176
00:07:38,710 --> 00:07:36,400
the the giant module that the discovery

177
00:07:40,950 --> 00:07:38,720
crew brought to us and one of the steps

178
00:07:42,629 --> 00:07:40,960
in that is to actually just install some

179
00:07:44,070 --> 00:07:42,639
brackets and there's six bolts on every

180
00:07:45,830 --> 00:07:44,080
bracket but i will tell you there's only

181
00:07:47,909 --> 00:07:45,840
one tiny little tool on the space

182
00:07:49,990 --> 00:07:47,919
station here that can do it it's a tiny

183
00:07:52,070 --> 00:07:50,000
tiny little work space to do it in and

184
00:07:53,990 --> 00:07:52,080
steve has been in there all morning long

185
00:07:55,990 --> 00:07:54,000
doing every one of these bolts i think

186
00:07:57,589 --> 00:07:56,000
there are about 60 of them i think he

187
00:07:59,350 --> 00:07:57,599
just finished and so that's the kind of

188
00:08:00,869 --> 00:07:59,360

guy he is he works in big spaces small

189
00:08:07,350 --> 00:08:00,879
spaces and he just always gets stuff

190
00:08:12,790 --> 00:08:10,150
one more is what's great about this is

191
00:08:14,150 --> 00:08:12,800
steve is what flew with me on sts-126

192
00:08:17,270 --> 00:08:14,160
and just like katie was just talking

193
00:08:18,869 --> 00:08:17,280
about uh steve and i have been working

194
00:08:21,189 --> 00:08:18,879
together on the racks

195
00:08:23,350 --> 00:08:21,199
in there in the pmm so it's a pleasure

196
00:08:26,390 --> 00:08:23,360
to watch him get to work just like the

197
00:08:28,550 --> 00:08:26,400
last flight

198
00:08:30,469 --> 00:08:28,560
uh mark caro for aviation week and i

199
00:08:32,070 --> 00:08:30,479
have a couple of questions the first is

200
00:08:33,670 --> 00:08:32,080
for scott kelly could you sort of

201
00:08:35,990 --> 00:08:33,680
explain how the

202
00:08:38,230 --> 00:08:36,000
extra time that discovery is spending at

203
00:08:42,790 --> 00:08:38,240
the space station benefits the station

204
00:08:48,310 --> 00:08:46,150
well uh in the original plan they were

205
00:08:49,910 --> 00:08:48,320
not going to have much involvement in

206
00:08:53,030 --> 00:08:49,920
getting uh

207
00:08:54,949 --> 00:08:53,040
pmm basically emptied out of a lot of

208
00:08:57,030 --> 00:08:54,959
the hardware that needs to be disposed

209
00:08:58,630 --> 00:08:57,040
of on htv so when they were going to

210
00:09:01,190 --> 00:08:58,640
leave

211
00:09:03,670 --> 00:09:01,200
we were going to really be in a

212
00:09:04,710 --> 00:09:03,680
time crunch to get

213
00:09:07,030 --> 00:09:04,720

all this

214
00:09:09,670 --> 00:09:07,040
you know all these metal structures and

215
00:09:11,829 --> 00:09:09,680
foam and stuff that we want to dispose

216
00:09:13,750 --> 00:09:11,839
of in htv because htv has to leave at a

217
00:09:14,949 --> 00:09:13,760
certain time so by having

218
00:09:17,670 --> 00:09:14,959
the uh

219
00:09:19,350 --> 00:09:17,680
the extension gives us two extra days of

220
00:09:22,310 --> 00:09:19,360
six people which is a lot of crew time

221
00:09:25,269 --> 00:09:22,320
to get all that stuff or or some of it

222
00:09:26,470 --> 00:09:25,279
uh done uh before they leave and then it

223
00:09:28,949 --> 00:09:26,480
kind of

224
00:09:31,030 --> 00:09:28,959
you know it just helps maximize our time

225
00:09:33,430 --> 00:09:31,040
uh post undocking for things like

226
00:09:34,870 --> 00:09:33,440
science and

227
00:09:37,110 --> 00:09:34,880
you know other activities we have to

228
00:09:39,030 --> 00:09:37,120
perform onboard the space station on a

229
00:09:41,829 --> 00:09:39,040
daily basis

230
00:09:44,310 --> 00:09:41,839
thanks and could someone explain where

231
00:09:46,949 --> 00:09:44,320
express rack 8 ends up

232
00:09:48,790 --> 00:09:46,959
at the end of this process and it's my

233
00:09:50,949 --> 00:09:48,800
understanding that's the last of the

234
00:09:53,030 --> 00:09:50,959
express racks and if anybody

235
00:09:55,110 --> 00:09:53,040
wants to comment on the significance of

236
00:09:59,030 --> 00:09:55,120
that for science activities that'd be

237
00:10:03,670 --> 00:10:01,750
well express rack 8 is right next to

238
00:10:05,350 --> 00:10:03,680

steve bowen here right to my left and we

239
00:10:08,150 --> 00:10:05,360
moved that this morning

240
00:10:10,230 --> 00:10:08,160
and yes it is the last express rack i'm

241
00:10:12,470 --> 00:10:10,240
not actually familiar with what

242
00:10:14,790 --> 00:10:12,480
kind of science express rack 8 is going

243
00:10:17,670 --> 00:10:14,800
to be performing

244
00:10:19,430 --> 00:10:17,680
right now it has a merlin which is a a

245
00:10:21,750 --> 00:10:19,440
small refrigerator

246
00:10:23,670 --> 00:10:21,760
a glacier which is another refrigerator

247
00:10:25,910 --> 00:10:23,680
and those things generally keep science

248
00:10:27,829 --> 00:10:25,920
samples uh you know human science

249
00:10:29,829 --> 00:10:27,839
samples in them as well as some other

250
00:10:33,430 --> 00:10:29,839
lockers i think katie might have a

251
00:10:34,949 --> 00:10:33,440
better idea i'll pass the mic to her

252
00:10:36,389 --> 00:10:34,959
well i was going to say what's great

253
00:10:38,550 --> 00:10:36,399
about an express rack is that it's

254
00:10:40,230 --> 00:10:38,560
actually not specific it's very modular

255
00:10:42,230 --> 00:10:40,240
you know it's the size of a refrigerator

256
00:10:44,710 --> 00:10:42,240
it has drawers that are then

257
00:10:46,949 --> 00:10:44,720
interchangeable that can contain either

258
00:10:49,190 --> 00:10:46,959
stowage or more importantly experiments

259
00:10:51,030 --> 00:10:49,200
that need power need cooling things like

260
00:10:53,350 --> 00:10:51,040
that and so now that we've got the big

261
00:10:54,630 --> 00:10:53,360
refrigerator size thing in place through

262
00:10:56,870 --> 00:10:54,640
discovery

263
00:10:59,190 --> 00:10:56,880

smaller locker size things can come up

264
00:11:00,710 --> 00:10:59,200
and so we can have payload after payload

265
00:11:02,470 --> 00:11:00,720
in this facility

266
00:11:03,910 --> 00:11:02,480
because everything is provided in an

267
00:11:06,069 --> 00:11:03,920
express rack so it's pretty exciting to

268
00:11:07,670 --> 00:11:06,079
have yet another on board it gives us a

269
00:11:11,350 --> 00:11:07,680
lot of different locations for small

270
00:11:15,269 --> 00:11:13,590
hi denise ciao at space.com with a

271
00:11:16,550 --> 00:11:15,279
question for either steve lindsey or

272
00:11:18,310 --> 00:11:16,560
eric beau

273
00:11:19,990 --> 00:11:18,320
when discovery does its fly around after

274
00:11:21,430 --> 00:11:20,000
undocking i was wondering if either or

275
00:11:23,590 --> 00:11:21,440
both of you could speak to the

276
00:11:25,509 --> 00:11:23,600
significance of performing that maneuver

277
00:11:27,110 --> 00:11:25,519
with discovery for the final time and in

278
00:11:28,949 --> 00:11:27,120
doing so seeing the space station

279
00:11:30,630 --> 00:11:28,959
completed with a vehicle that's been so

280
00:11:34,949 --> 00:11:30,640
instrumental in its construction thank

281
00:11:39,190 --> 00:11:36,790
well we've been talking about the

282
00:11:40,949 --> 00:11:39,200
the long history of the space shuttle

283
00:11:42,630 --> 00:11:40,959
and it's a privilege to get the

284
00:11:44,470 --> 00:11:42,640
opportunity to undock and do the fly

285
00:11:47,190 --> 00:11:44,480
around the space station you know

286
00:11:49,269 --> 00:11:47,200
the international space station has

287
00:11:50,790 --> 00:11:49,279
every partner represented with the

288
00:11:52,790 --> 00:11:50,800

different modules on board right now we

289
00:11:54,230 --> 00:11:52,800
have atv which is from the european

290
00:11:59,190 --> 00:11:54,240
space agency

291
00:12:02,949 --> 00:12:00,870
and also after we finished the fly

292
00:12:04,629 --> 00:12:02,959
around it what's amazing is how big this

293
00:12:06,470 --> 00:12:04,639
structure is right now when we're docked

294
00:12:07,750 --> 00:12:06,480
for more than a million pounds

295
00:12:09,509 --> 00:12:07,760
and so to actually fly around the

296
00:12:12,550 --> 00:12:09,519
vehicle take pictures

297
00:12:14,629 --> 00:12:12,560
and marvel at that every the majority of

298
00:12:16,870 --> 00:12:14,639
the us segment was brought up piece by

299
00:12:20,870 --> 00:12:16,880
piece by the space shuttle will be truly

300
00:12:25,430 --> 00:12:23,509
hi uh eric berger with houston chronicle

301
00:12:27,269 --> 00:12:25,440
congratulations on a successful mission

302
00:12:29,350 --> 00:12:27,279
a question maybe maybe for nicole or

303
00:12:30,710 --> 00:12:29,360
someone else who wants to tackle it but

304
00:12:32,790 --> 00:12:30,720
i don't think people on the ground can

305
00:12:34,629 --> 00:12:32,800
sort of fully appreciate what the living

306
00:12:36,470 --> 00:12:34,639
space is like in the space station so

307
00:12:38,629 --> 00:12:36,480
now that it's complete maybe you could

308
00:12:40,310 --> 00:12:38,639
talk a little bit in terms that people

309
00:12:48,949 --> 00:12:40,320
can understand how large it is and how

310
00:12:53,590 --> 00:12:49,829
and

311
00:12:55,750 --> 00:12:53,600
points this out is that

312
00:12:59,269 --> 00:12:55,760
this space station here now is the

313
00:13:01,910 --> 00:12:59,279

largest pressurized volume in space in

314
00:13:03,750 --> 00:13:01,920
history it's it's huge i mean i use a

315
00:13:05,509 --> 00:13:03,760
word my son uses all the time which is

316
00:13:07,750 --> 00:13:05,519
ginormous

317
00:13:10,150 --> 00:13:07,760
we have 12 people up here now and

318
00:13:12,470 --> 00:13:10,160
honestly if we spread ourselves out you

319
00:13:14,389 --> 00:13:12,480
could spread across this vehicle and

320
00:13:16,629 --> 00:13:14,399
you know not see another person it's

321
00:13:18,069 --> 00:13:16,639
it's that big i think volume wise

322
00:13:20,629 --> 00:13:18,079
equivalent to

323
00:13:22,550 --> 00:13:20,639
the interior of a 747 or a little bit

324
00:13:24,870 --> 00:13:22,560
bigger and

325
00:13:26,069 --> 00:13:24,880
it's just really really impressive to

326
00:13:29,269 --> 00:13:26,079
know that

327
00:13:31,350 --> 00:13:29,279
as a volume and a total volume workspace

328
00:13:33,030 --> 00:13:31,360
we can use every single one of the walls

329
00:13:35,430 --> 00:13:33,040
and every single one of these modules in

330
00:13:37,030 --> 00:13:35,440
a way that we just can't do on the

331
00:13:38,710 --> 00:13:37,040
ground and so it makes for a really

332
00:13:40,790 --> 00:13:38,720
wonderful resource for

333
00:13:42,230 --> 00:13:40,800
science and living and

334
00:13:45,350 --> 00:13:42,240
and just being up here floating around

335
00:13:49,030 --> 00:13:47,189
it's chris baltimore the houston bureau

336
00:13:52,550 --> 00:13:49,040
chief for reuters news agency and i have

337
00:13:56,230 --> 00:13:52,560
a question about garbage literally

338
00:14:03,750 --> 00:13:56,240

how much trash does the iss generate

339
00:14:09,030 --> 00:14:06,150
we we do recycle certain things we

340
00:14:09,829 --> 00:14:09,040
recycle our our water and uh turn it

341
00:14:14,790 --> 00:14:09,839
into

342
00:14:16,550 --> 00:14:14,800
that's very helpful because uh you know

343
00:14:19,350 --> 00:14:16,560
disposing of that is

344
00:14:21,030 --> 00:14:19,360
and disposing of any trash is quite a

345
00:14:23,110 --> 00:14:21,040
challenge

346
00:14:25,430 --> 00:14:23,120
right now believe it or not we don't

347
00:14:27,110 --> 00:14:25,440
have a whole lot of what's called common

348
00:14:29,509 --> 00:14:27,120
trash on board which is basically the

349
00:14:30,949 --> 00:14:29,519
garbage we generate from our food

350
00:14:33,350 --> 00:14:30,959
and our clothing

351
00:14:36,790 --> 00:14:33,360
and uh and that's because we've recently

352
00:14:39,030 --> 00:14:36,800
had two progress vehicles uh depart

353
00:14:40,710 --> 00:14:39,040
and uh you know our cosmonaut colleagues

354
00:14:42,150 --> 00:14:40,720
were very efficient in getting them

355
00:14:44,710 --> 00:14:42,160
loaded with uh

356
00:14:48,230 --> 00:14:44,720
we had probably about 11 or 12 very

357
00:14:50,550 --> 00:14:48,240
large garbage bags like a you know a

358
00:14:52,629 --> 00:14:50,560
outs outdoor kind of garbage bag filled

359
00:14:55,829 --> 00:14:52,639
with trash and we were able to

360
00:14:57,750 --> 00:14:55,839
uh get rid of those and um

361
00:15:00,389 --> 00:14:57,760
generally though that the trash stays in

362
00:15:02,389 --> 00:15:00,399
a certain area of the node as well as

363
00:15:04,389 --> 00:15:02,399

there's a certain area in the russian

364
00:15:06,230 --> 00:15:04,399
segment where some trash stays and it

365
00:15:07,990 --> 00:15:06,240
stays there until we can dispose of it

366
00:15:09,910 --> 00:15:08,000
and we can dispose of it

367
00:15:11,910 --> 00:15:09,920
probably on average every uh you know

368
00:15:14,949 --> 00:15:11,920
two to three months when we have a

369
00:15:16,629 --> 00:15:14,959
vehicle that that departs and

370
00:15:21,110 --> 00:15:16,639
generally burns up in the in the

371
00:15:25,990 --> 00:15:23,430
discovery iss this is houston acr that

372
00:15:28,150 --> 00:15:26,000
concludes questions from jsc please

373
00:15:32,870 --> 00:15:28,160
stand by for a voice check from kennedy

374
00:15:39,749 --> 00:15:36,310
discovery iss this is kscpao how do you

375
00:15:45,189 --> 00:15:41,030
we have you loud and clear welcome

376
00:15:48,870 --> 00:15:46,870
uh hello this is marcia dunna the

377
00:15:50,230 --> 00:15:48,880
associated press with a question for

378
00:15:52,550 --> 00:15:50,240
katie coleman

379
00:15:54,389 --> 00:15:52,560
there's great interest in r2 all the way

380
00:15:56,230 --> 00:15:54,399
up to the president of the united states

381
00:15:58,389 --> 00:15:56,240
and i'm wondering will the robots

382
00:16:00,870 --> 00:15:58,399
unveiling be moved up considering all

383
00:16:06,230 --> 00:16:00,880
the interest and how excited are you to

384
00:16:11,110 --> 00:16:08,550
well i think uh we've all been voting to

385
00:16:13,110 --> 00:16:11,120
move up the m move up getting him out of

386
00:16:15,269 --> 00:16:13,120
his box in fact we're all pretty sure

387
00:16:17,269 --> 00:16:15,279
that we hear scratching from the inside

388
00:16:18,629 --> 00:16:17,279

there um there's a very elaborate

389
00:16:20,870 --> 00:16:18,639
choreography of all the things that have

390
00:16:22,710 --> 00:16:20,880
to come out of the pmm and get stowed

391
00:16:24,470 --> 00:16:22,720
different places and folks on the ground

392
00:16:26,230 --> 00:16:24,480
are working real hard at that and we'll

393
00:16:28,230 --> 00:16:26,240
see if we end up being able to bring

394
00:16:30,150 --> 00:16:28,240
robonaut robonaut out before discover

395
00:16:32,310 --> 00:16:30,160
leaves i'm really not sure i am looking

396
00:16:34,790 --> 00:16:32,320
forward to working with him you know as

397
00:16:36,710 --> 00:16:34,800
we bring robots up into space one of the

398
00:16:38,629 --> 00:16:36,720
reasons to do that is just to understand

399
00:16:40,230 --> 00:16:38,639
a how to work with them and b just the

400
00:16:42,389 --> 00:16:40,240
mechanics of how they work and how

401
00:16:44,310 --> 00:16:42,399
that's affected by zero g we want to

402
00:16:46,550 --> 00:16:44,320
learn those lessons here on the inside

403
00:16:48,230 --> 00:16:46,560
of the space station before we send them

404
00:16:50,550 --> 00:16:48,240
out to the outside of the space station

405
00:16:52,870 --> 00:16:50,560
or to other planets which we need to be

406
00:16:54,550 --> 00:16:52,880
able to do in in terms of exploring both

407
00:16:56,310 --> 00:16:54,560
as you know a human presence and a

408
00:16:58,069 --> 00:16:56,320
robotics presence it'll take both of

409
00:17:00,150 --> 00:16:58,079
those to to get us further out into the

410
00:17:03,430 --> 00:17:00,160
universe and robonaut is a good first

411
00:17:07,350 --> 00:17:05,510
thank you and for steve bowen it's it's

412
00:17:09,990 --> 00:17:07,360
been a real whirlwind for you the past

413
00:17:11,750 --> 00:17:10,000

month i'm wondering um are you pinching

414
00:17:14,150 --> 00:17:11,760
yourself that you're even in space on

415
00:17:16,150 --> 00:17:14,160
this mission and have had a chance to go

416
00:17:17,750 --> 00:17:16,160
spacewalking and how are you going to

417
00:17:22,870 --> 00:17:17,760
make it up to tim croprow when you get

418
00:17:27,270 --> 00:17:25,029
i am pinching myself and there's no

419
00:17:28,710 --> 00:17:27,280
possible way i can make it up to tim but

420
00:17:29,830 --> 00:17:28,720
you know tim did an incredible job

421
00:17:32,470 --> 00:17:29,840
putting this together it's the only

422
00:17:34,950 --> 00:17:32,480
reason we were so successful outside he

423
00:17:36,870 --> 00:17:34,960
really did a fantastic job

424
00:17:38,230 --> 00:17:36,880
so if there's anything i can do for him

425
00:17:43,270 --> 00:17:38,240
i'm willing to

426
00:17:47,350 --> 00:17:45,430
hi guys it's bill harwood with cbs news

427
00:17:49,750 --> 00:17:47,360
and i have a question for alexander

428
00:17:51,270 --> 00:17:49,760
kaleri and for scott kelly

429
00:17:52,870 --> 00:17:51,280
first for alexander kaleri were you

430
00:17:55,510 --> 00:17:52,880
looking forward to

431
00:17:57,990 --> 00:17:55,520
the soyuz fly around were you

432
00:18:00,070 --> 00:17:58,000
disappointed that got called off and for

433
00:18:02,310 --> 00:18:00,080
scott kelly how do you balance the risk

434
00:18:04,150 --> 00:18:02,320
versus the benefit of a picture like

435
00:18:05,510 --> 00:18:04,160
that versus everything that goes into

436
00:18:13,270 --> 00:18:05,520
undocking and

437
00:18:16,950 --> 00:18:15,430
yes we were going to fly around and we

438
00:18:19,750 --> 00:18:16,960

were ready but

439
00:18:22,870 --> 00:18:19,760
uh now we have no decision

440
00:18:26,549 --> 00:18:22,880
for this operation so i think it would

441
00:18:30,230 --> 00:18:26,559
be unique pictures of the

442
00:18:31,270 --> 00:18:30,240
of the international space station with

443
00:18:33,270 --> 00:18:31,280
uh

444
00:18:36,789 --> 00:18:33,280
modules of all the international

445
00:18:40,710 --> 00:18:36,799
partners but unfortunately we'll we

446
00:18:45,909 --> 00:18:42,390
well i think the uh

447
00:18:48,230 --> 00:18:45,919
the value of those pictures are you know

448
00:18:50,070 --> 00:18:48,240
clear there's a there is a value to it

449
00:18:53,110 --> 00:18:50,080
but it's kind of hard to measure it it's

450
00:18:54,230 --> 00:18:53,120
uh it's very subjective in my opinion

451
00:18:56,150 --> 00:18:54,240
and the uh

452
00:18:58,950 --> 00:18:56,160
you know the risk is is something you

453
00:19:01,029 --> 00:18:58,960
can quantify although uh we never got

454
00:19:02,870 --> 00:19:01,039
far enough along in the process for me

455
00:19:04,870 --> 00:19:02,880
to actually see the uh the hazard

456
00:19:07,430 --> 00:19:04,880
analysis associated with doing a fly

457
00:19:08,789 --> 00:19:07,440
around so you know there are advantages

458
00:19:11,830 --> 00:19:08,799
to do it doing it and there are

459
00:19:14,390 --> 00:19:11,840
disadvantages it to doing it and uh you

460
00:19:17,270 --> 00:19:14,400
know both programs uh weighed those and

461
00:19:19,270 --> 00:19:17,280
came up with the the the decision not to

462
00:19:21,110 --> 00:19:19,280
do it and uh you know i'm really not

463
00:19:22,789 --> 00:19:21,120

familiar with the details of exactly how

464
00:19:25,750 --> 00:19:22,799
they came to that decision but you know

465
00:19:27,510 --> 00:19:25,760
as a crew we you know we support

466
00:19:31,990 --> 00:19:27,520
the decisions that are made

467
00:19:36,470 --> 00:19:34,070
hi this is emily baldwin from astronomy

468
00:19:38,310 --> 00:19:36,480
now magazine in the uk and it's always

469
00:19:39,750 --> 00:19:38,320
really amazing seeing views of the earth

470
00:19:41,590 --> 00:19:39,760
from space and i'd certainly be

471
00:19:42,870 --> 00:19:41,600
interested to hear your comments on any

472
00:19:44,789 --> 00:19:42,880
earth observation you've done this

473
00:19:46,870 --> 00:19:44,799
mission but what i'd really like to know

474
00:19:57,270 --> 00:19:46,880
is do you do any nighttime astronomical

475
00:20:01,830 --> 00:19:59,830
well hello to the uk and uh let me get

476
00:20:03,909 --> 00:20:01,840
the first part of that the earth views

477
00:20:05,830 --> 00:20:03,919
are just stunning uh it's very very

478
00:20:07,830 --> 00:20:05,840
difficult to explain them to people even

479
00:20:09,270 --> 00:20:07,840
pictures don't do it justice

480
00:20:10,870 --> 00:20:09,280
and your senses can be really

481
00:20:13,669 --> 00:20:10,880
overwhelmed by how beautiful the earth

482
00:20:15,990 --> 00:20:13,679
is i want to mention to the uk that we

483
00:20:18,230 --> 00:20:16,000
actually have a medallion up here struck

484
00:20:19,990 --> 00:20:18,240
in honor of james cook this was

485
00:20:20,870 --> 00:20:20,000
commissioned about five years after his

486
00:20:22,950 --> 00:20:20,880
death

487
00:20:25,430 --> 00:20:22,960
and we're very very happy to have that

488
00:20:27,990 --> 00:20:25,440

and to honor the rich maritime legacy of

489
00:20:30,710 --> 00:20:28,000
world discovery that the uk has

490
00:20:32,390 --> 00:20:30,720
as far as astronomical observations one

491
00:20:35,510 --> 00:20:32,400
of the problems is that we're moving

492
00:20:37,909 --> 00:20:35,520
around the earth at 17 500 miles an hour

493
00:20:40,310 --> 00:20:37,919
it'd be kind of difficult to train on to

494
00:20:42,789 --> 00:20:40,320
something unless we were really

495
00:20:44,470 --> 00:20:42,799
more mechanically equipped to do that we

496
00:20:46,549 --> 00:20:44,480
keep our space station

497
00:20:48,549 --> 00:20:46,559
oriented so that we're looking belly to

498
00:20:50,470 --> 00:20:48,559
the ground most of the time and that's

499
00:20:52,149 --> 00:20:50,480
comfortable to us for a lot of reasons

500
00:20:54,870 --> 00:20:52,159
and we get really good ground views that

501
00:20:56,390 --> 00:20:54,880
way now having said that we have some

502
00:20:59,270 --> 00:20:56,400
very good cameras on board and we're

503
00:21:00,950 --> 00:20:59,280
able to take some astrophotographs

504
00:21:03,029 --> 00:21:00,960
that don't require much

505
00:21:05,750 --> 00:21:03,039
much in the way of exposures but most of

506
00:21:08,070 --> 00:21:05,760
these are milky way shots and aurora

507
00:21:09,510 --> 00:21:08,080
shots and they're quite spectacular but

508
00:21:12,470 --> 00:21:09,520
nothing compared to what the hubble can

509
00:21:17,510 --> 00:21:15,510
thank you and my second question um

510
00:21:20,470 --> 00:21:17,520
apollo inspired the children of the 60s

511
00:21:22,950 --> 00:21:20,480
and the 70s um the shuttle the the 80s

512
00:21:24,789 --> 00:21:22,960
and 90s in the early 21st century with

513
00:21:27,270 --> 00:21:24,799

the shuttle program retiring how do you

514
00:21:40,630 --> 00:21:27,280
think uh will be able to inspire

515
00:21:45,990 --> 00:21:43,510
well you know i think the space program

516
00:21:47,510 --> 00:21:46,000
in general is is inspiring and i think

517
00:21:49,350 --> 00:21:47,520
you know our

518
00:21:51,190 --> 00:21:49,360
country and certain countries around the

519
00:21:53,750 --> 00:21:51,200
world have a strong history of

520
00:21:55,750 --> 00:21:53,760
exploration and uh now exploration and

521
00:21:57,190 --> 00:21:55,760
space and i think even when the shuttle

522
00:21:58,630 --> 00:21:57,200
retires we're going to continue that

523
00:22:00,549 --> 00:21:58,640
we're still going to have a

524
00:22:01,909 --> 00:22:00,559
a space station it's still going to be

525
00:22:03,990 --> 00:22:01,919
uh

526
00:22:06,310 --> 00:22:04,000
supported by astronauts and cosmonauts

527
00:22:07,510 --> 00:22:06,320
from around the world and i think uh

528
00:22:09,270 --> 00:22:07,520
you know we're going to have a program

529
00:22:11,669 --> 00:22:09,280
beyond this we're not sure exactly what

530
00:22:13,430 --> 00:22:11,679
it is right now but you know someday

531
00:22:16,950 --> 00:22:13,440
humans are going to venture again beyond

532
00:22:19,110 --> 00:22:16,960
lower earth orbit back to the moon and

533
00:22:21,669 --> 00:22:19,120
mars and other destinations in our solar

534
00:22:23,590 --> 00:22:21,679
system and it's uh

535
00:22:25,350 --> 00:22:23,600
you know something i think can inspire

536
00:22:32,870 --> 00:22:25,360
kids and it's something that we all can

537
00:22:37,909 --> 00:22:35,750
hi it's james dean from florida today

538
00:22:39,990 --> 00:22:37,919

for nicole stott

539
00:22:42,470 --> 00:22:40,000
if you could put yourself back in the

540
00:22:43,430 --> 00:22:42,480
shoes of the ground teams here at ksc

541
00:22:46,390 --> 00:22:43,440
who are

542
00:22:48,789 --> 00:22:46,400
going to be watching you return and

543
00:22:50,630 --> 00:22:48,799
seeing discovery land for the last time

544
00:22:51,909 --> 00:22:50,640
i wondered if you could

545
00:22:54,630 --> 00:22:51,919
just looking at it from their

546
00:22:56,149 --> 00:22:54,640
perspective try to describe just how

547
00:22:57,510 --> 00:22:56,159
emotional and difficult you think that's

548
00:22:58,870 --> 00:22:57,520
going to be for

549
00:23:01,110 --> 00:22:58,880
those folks on the ground as they see

550
00:23:02,870 --> 00:23:01,120
you come in including many who are going

551
00:23:07,990 --> 00:23:02,880
to be working their last launch or last

552
00:23:13,190 --> 00:23:11,029
well um i'd like to include us as a crew

553
00:23:14,630 --> 00:23:13,200
uh in that ground team at that point i

554
00:23:16,789 --> 00:23:14,640
think um

555
00:23:18,789 --> 00:23:16,799
as uh steve may and uh scott may have

556
00:23:20,710 --> 00:23:18,799
mentioned earlier this um

557
00:23:22,470 --> 00:23:20,720
it's gonna be a it's gonna be a sad day

558
00:23:25,510 --> 00:23:22,480
i think we

559
00:23:27,350 --> 00:23:25,520
we all i know appreciate the the legacy

560
00:23:31,029 --> 00:23:27,360
and the history and the really fine work

561
00:23:32,390 --> 00:23:31,039
that the space shuttle has done

562
00:23:35,510 --> 00:23:32,400
and it's going to be hard to walk away

563
00:23:37,029 --> 00:23:35,520

from discovery on the runway that day

564
00:23:40,310 --> 00:23:37,039
knowing it's the last time that this

565
00:23:43,110 --> 00:23:40,320
really magnificent seemingly

566
00:23:45,269 --> 00:23:43,120
brand new to us vehicle and the way it's

567
00:23:46,789 --> 00:23:45,279
just wonderfully performed is going to

568
00:23:48,630 --> 00:23:46,799
be retired

569
00:23:51,029 --> 00:23:48,640
what i like to think is going to happen

570
00:23:53,430 --> 00:23:51,039
and after speaking to a lot of people

571
00:23:54,630 --> 00:23:53,440
down at kennedy space center

572
00:23:57,909 --> 00:23:54,640
while we've been down there for some

573
00:24:00,070 --> 00:23:57,919
training and in the different facilities

574
00:24:02,950 --> 00:24:00,080
it seems that there is

575
00:24:03,909 --> 00:24:02,960
just an abundant pride in everyone and

576
00:24:06,390 --> 00:24:03,919
the work that they've had the

577
00:24:08,230 --> 00:24:06,400
opportunity to do on these vehicles

578
00:24:09,909 --> 00:24:08,240
and it just shines through

579
00:24:11,909 --> 00:24:09,919
and it shines through and you know in

580
00:24:14,870 --> 00:24:11,919
the fact that discovery is in the shape

581
00:24:16,789 --> 00:24:14,880
that she is right now and

582
00:24:18,470 --> 00:24:16,799
and i think everybody is proud to have

583
00:24:20,630 --> 00:24:18,480
been a part of this program

584
00:24:23,350 --> 00:24:20,640
everybody will be sad to see it ending

585
00:24:25,430 --> 00:24:23,360
but i think that um in the end we'll be

586
00:24:27,750 --> 00:24:25,440
taking the time to celebrate just what a

587
00:24:33,190 --> 00:24:27,760
wonderful program and all of the

588
00:24:39,350 --> 00:24:36,070

thanks and for dr barrett um i wondered

589
00:24:42,390 --> 00:24:39,360
if you could uh describe

590
00:24:45,110 --> 00:24:42,400
uh as you begin your re-entry and begin

591
00:24:47,669 --> 00:24:45,120
feeling the effects of the atmosphere

592
00:24:49,430 --> 00:24:47,679
for the first time in in a couple weeks

593
00:24:51,750 --> 00:24:49,440
what is uh going what are you guys going

594
00:24:53,510 --> 00:24:51,760
to be feeling uh physically what types

595
00:24:54,950 --> 00:24:53,520
of things are your bodies going to be

596
00:24:57,110 --> 00:24:54,960
experiencing and how different do you

597
00:25:01,350 --> 00:24:57,120
think that's going to be from your soyuz

598
00:25:04,230 --> 00:25:02,710
that's a great question the the big

599
00:25:06,470 --> 00:25:04,240
difference between this and the soyuz

600
00:25:08,630 --> 00:25:06,480
return is that one came after about six

601
00:25:10,310 --> 00:25:08,640
and a half months up here so i had that

602
00:25:12,549 --> 00:25:10,320
much time to decondition in the

603
00:25:14,870 --> 00:25:12,559
weightless environment and to

604
00:25:17,590 --> 00:25:14,880
train hard with my counter measures

605
00:25:18,870 --> 00:25:17,600
for us with a 13 or 14 day flight a

606
00:25:20,549 --> 00:25:18,880
couple of weeks

607
00:25:22,710 --> 00:25:20,559
you don't decondition quite that much

608
00:25:24,630 --> 00:25:22,720
but you also don't quite get on the top

609
00:25:26,950 --> 00:25:24,640
of your game for counter measures

610
00:25:28,789 --> 00:25:26,960
so i think i'll probably look

611
00:25:30,630 --> 00:25:28,799
very much like the typical people that

612
00:25:32,310 --> 00:25:30,640
we see coming down

613
00:25:34,950 --> 00:25:32,320

we're seated upright compared to the

614
00:25:36,870 --> 00:25:34,960
soyuz so the gravity gradient is pulling

615
00:25:38,549 --> 00:25:36,880
the blood out of our head rather than

616
00:25:41,269 --> 00:25:38,559
going through our chest

617
00:25:42,870 --> 00:25:41,279
which is a much friendlier orientation

618
00:25:44,710 --> 00:25:42,880
however the g loads are quite a bit

619
00:25:47,669 --> 00:25:44,720
gentler in the shuttle they're about

620
00:25:50,390 --> 00:25:47,679
maybe 1.2 for several minutes 15 plus

621
00:25:52,470 --> 00:25:50,400
minutes rather than peaking up to a four

622
00:25:54,710 --> 00:25:52,480
and a half and sometimes even five g's

623
00:25:56,789 --> 00:25:54,720
for a few seconds in the soyuz

624
00:25:59,029 --> 00:25:56,799
but i can tell you that 1.2 g's will

625
00:26:01,269 --> 00:25:59,039
will feel like three or so after being

626
00:26:03,190 --> 00:26:01,279
up here for quite a while uh but do we

627
00:26:05,669 --> 00:26:03,200
have g suits that are gonna keep that

628
00:26:07,830 --> 00:26:05,679
blood flow into our heads and uh

629
00:26:10,070 --> 00:26:07,840
we have uh fluid loading that we do that

630
00:26:12,470 --> 00:26:10,080
tries to get our vascular volume up

631
00:26:14,630 --> 00:26:12,480
again and for the most part people do

632
00:26:16,789 --> 00:26:14,640
fairly well and you'll see in the post

633
00:26:18,549 --> 00:26:16,799
flight film but hopefully you'll see

634
00:26:23,990 --> 00:26:18,559
six happy people walking around under

635
00:26:28,870 --> 00:26:26,310
discovery iss this is houston acr that

636
00:26:31,029 --> 00:26:28,880
concludes questions from ksc

637
00:26:37,269 --> 00:26:31,039
please stand by for a voice check from

638
00:26:47,430 --> 00:26:40,230

iss this is isabelle jo grants here in

639
00:26:50,630 --> 00:26:48,950
answering rome we have you loud and

640
00:26:55,430 --> 00:26:50,640
clear welcome on board the international

641
00:26:58,789 --> 00:26:57,110
from either thank you to commanders

642
00:27:01,029 --> 00:26:58,799
kelly and lindsey having us participate

643
00:27:02,789 --> 00:27:01,039
in this event first question for

644
00:27:05,430 --> 00:27:02,799
commander kelly how it is on station

645
00:27:10,950 --> 00:27:05,440
while having vehicles and components

646
00:27:15,029 --> 00:27:12,870
well i think it's one of the uh the

647
00:27:17,510 --> 00:27:15,039
great things about this program that's

648
00:27:20,389 --> 00:27:17,520
it's an international program it shows

649
00:27:22,549 --> 00:27:20,399
how countries that cooperate can do

650
00:27:24,149 --> 00:27:22,559
great things and building a space

651
00:27:26,230 --> 00:27:24,159
station such as the international space

652
00:27:27,909 --> 00:27:26,240
station is probably one of the most

653
00:27:30,389 --> 00:27:27,919
you know significant engineering

654
00:27:32,470 --> 00:27:30,399
achievements that people have achieved

655
00:27:34,470 --> 00:27:32,480
and and we've done that

656
00:27:36,070 --> 00:27:34,480
with this international partnership that

657
00:27:42,149 --> 00:27:36,080
i think is really one of the uh the

658
00:27:42,159 --> 00:27:45,590
question to paula nespoli

659
00:27:45,600 --> 00:27:56,630
erica battifolia

660
00:28:01,430 --> 00:27:59,669
leonardo module an italian room on the

661
00:28:03,190 --> 00:28:01,440
international space station so what are

662
00:28:05,909 --> 00:28:03,200
the first operations that are going to

663
00:28:09,350 --> 00:28:05,919

happen on its interior

664
00:28:14,230 --> 00:28:12,230
we're working very hard inside the

665
00:28:17,029 --> 00:28:14,240
leonardo

666
00:28:18,630 --> 00:28:17,039
module because it came in a flight

667
00:28:21,190 --> 00:28:18,640
configuration so

668
00:28:22,549 --> 00:28:21,200
everything is fastened uh in a way to

669
00:28:24,950 --> 00:28:22,559
secure it

670
00:28:26,149 --> 00:28:24,960
for launch so we're removing

671
00:28:30,549 --> 00:28:26,159
all the

672
00:28:35,350 --> 00:28:32,470
so that we can store it in the japanese

673
00:28:37,510 --> 00:28:35,360
module that's going to be leaving soon

674
00:28:39,590 --> 00:28:37,520
so we're using all the astronauts

675
00:28:41,029 --> 00:28:39,600
including the discovery crew that are

676
00:28:56,710 --> 00:28:41,039
staying here another couple of days to

677
00:29:02,389 --> 00:28:59,190
in less than two weeks on march 17th

678
00:29:04,630 --> 00:29:02,399
it's 150 years of the unity of italy

679
00:29:07,430 --> 00:29:04,640
so how do you plan on celebrating aboard

680
00:29:10,230 --> 00:29:07,440
the international space station

681
00:29:25,029 --> 00:29:10,240
an event that's so important for the

682
00:29:27,909 --> 00:29:26,389
i have brought

683
00:29:30,389 --> 00:29:27,919
a little flag

684
00:29:31,830 --> 00:29:30,399
that i will be able to uh fly on that

685
00:29:35,029 --> 00:29:31,840
day

686
00:29:37,110 --> 00:29:35,039
and uh from the cupola which is also an

687
00:29:41,430 --> 00:29:37,120
italian product

688
00:29:45,269 --> 00:29:41,440

seeing italy from up here is a beautiful

689
00:29:47,909 --> 00:29:45,279
view and i have tried to uh

690
00:29:49,990 --> 00:29:47,919
have everyone partake in it by sending

691
00:29:52,230 --> 00:29:50,000
pictures and it's a country that stands

692
00:29:55,590 --> 00:29:52,240
out from the mediterranean both during

693
00:29:56,470 --> 00:29:55,600
the day and at night it's uh it's easy

694
00:29:58,389 --> 00:29:56,480
to see

695
00:30:00,710 --> 00:29:58,399
how beautiful it is from a geographical

696
00:30:03,430 --> 00:30:00,720
and natural point of view

697
00:30:16,630 --> 00:30:03,440
and we have to keep it in that

698
00:30:21,750 --> 00:30:18,710
every 90 minutes so you have 45 minutes

699
00:30:23,269 --> 00:30:21,760
of light and 45 minutes of day do you do

700
00:30:26,470 --> 00:30:23,279
you realize that

701
00:30:30,710 --> 00:30:26,480
and how do you manage to keep uh the

702
00:30:34,470 --> 00:30:32,710
we're here inside the space station we

703
00:30:36,789 --> 00:30:34,480
have some viewports that are not always

704
00:30:38,710 --> 00:30:36,799
open

705
00:30:41,669 --> 00:30:38,720
because most of the times they have to

706
00:30:43,430 --> 00:30:41,679
stay closed because we're maneuvering

707
00:30:46,549 --> 00:30:43,440
outside

708
00:30:48,950 --> 00:30:46,559
we live our days based on the clock and

709
00:30:50,950 --> 00:30:48,960
the time that is given to us which is

710
00:30:51,990 --> 00:30:50,960
fixed on the greenwich mean time of

711
00:30:54,470 --> 00:30:52,000
london

712
00:30:56,149 --> 00:30:54,480
and the mission control centers work to

713
00:30:58,950 --> 00:30:56,159

give us

714
00:31:01,750 --> 00:30:58,960
uh some sort of standard work hours so

715
00:31:03,110 --> 00:31:01,760
we usually work from 8 a.m to 8 p.m with

716
00:31:05,509 --> 00:31:03,120
about an hour

717
00:31:08,070 --> 00:31:05,519
break for lunch

718
00:31:09,029 --> 00:31:08,080
and in this way we kind of fix our our

719
00:31:10,549 --> 00:31:09,039
day

720
00:31:13,190 --> 00:31:10,559
when we go to the cupola it's a little

721
00:31:14,149 --> 00:31:13,200
strange because we're looking outside

722
00:31:16,630 --> 00:31:14,159
and it's

723
00:31:18,710 --> 00:31:16,640
it's day or light depending on where you

724
00:31:21,909 --> 00:31:18,720
are what time so you're a little

725
00:31:24,389 --> 00:31:21,919
disoriented from this coming going of

726
00:31:26,549 --> 00:31:24,399
sunset and sunrise but it's extremely

727
00:31:29,590 --> 00:31:26,559
beautiful to see the world

728
00:31:40,310 --> 00:31:30,789
within the

729
00:31:45,350 --> 00:31:42,630
i wanted to know if you've touched the

730
00:31:47,750 --> 00:31:45,360
moon if you've touched the moon rock

731
00:31:51,190 --> 00:31:47,760
that the apollo 11 astronauts have

732
00:31:53,909 --> 00:31:51,200
brought back which is now aboard the iss

733
00:31:56,070 --> 00:31:53,919
yes surely

734
00:31:57,669 --> 00:31:56,080
it's on the cupola

735
00:31:59,190 --> 00:31:57,679
and this moon rock

736
00:32:01,350 --> 00:31:59,200
has also been

737
00:32:03,509 --> 00:32:01,360
on top of everest with scott perezinski

738
00:32:06,549 --> 00:32:03,519

so it's a rock that has been all over

739
00:32:08,710 --> 00:32:06,559
the place i have touched it i've seen it

740
00:32:10,149 --> 00:32:08,720
it's very interesting

741
00:32:11,590 --> 00:32:10,159
it's stimulating

742
00:32:15,110 --> 00:32:11,600
to know that

743
00:32:17,110 --> 00:32:15,120
that rock has been on such a tour and

744
00:32:18,470 --> 00:32:17,120
it's with us today

745
00:32:20,310 --> 00:32:18,480
but it also

746
00:32:22,630 --> 00:32:20,320
shows us that we need to continue our

747
00:32:23,990 --> 00:32:22,640
exploration come back to the moon

748
00:32:26,789 --> 00:32:24,000
and go to mars

749
00:32:37,750 --> 00:32:26,799
this will surely be our goal in the

750
00:32:42,630 --> 00:32:39,669
some people are going to be leaving soon

751
00:32:43,590 --> 00:32:42,640
for what is going to be

752
00:32:54,149 --> 00:32:43,600
a

753
00:32:57,590 --> 00:32:55,669
i'm convinced

754
00:32:59,669 --> 00:32:57,600
that space tourism will be one of the

755
00:33:02,549 --> 00:32:59,679
new frontiers that will be opening in

756
00:33:04,149 --> 00:33:02,559
space when i got here in the first place

757
00:33:06,549 --> 00:33:04,159
when we had a little more time to get

758
00:33:09,110 --> 00:33:06,559
used to the absence of gravity and i had

759
00:33:11,350 --> 00:33:09,120
a little more time to get used to it

760
00:33:12,870 --> 00:33:11,360
i really thought that it's really a

761
00:33:14,470 --> 00:33:12,880
shame that so many people on earth

762
00:33:16,950 --> 00:33:14,480
cannot see this

763
00:33:18,630 --> 00:33:16,960

so surely in the future this will change

764
00:33:20,789 --> 00:33:18,640
and it will be a pleasure

765
00:33:23,110 --> 00:33:20,799
to have the opportunity for everyone to

766
00:33:25,830 --> 00:33:23,120
come up here spend some time here

767
00:33:28,870 --> 00:33:25,840
and be able to see earth

768
00:33:30,310 --> 00:33:28,880
and experience the absence of gravity

769
00:33:32,789 --> 00:33:30,320
this is surely something that will

770
00:33:35,509 --> 00:33:32,799
happen in the future and i hope

771
00:33:50,149 --> 00:33:35,519
that it will happen sooner rather than

772
00:33:55,590 --> 00:33:53,269
in north africa for example

773
00:34:02,630 --> 00:33:55,600
there are very important changes how how

774
00:34:08,629 --> 00:34:05,269
yes we're a little bit isolated up here

775
00:34:12,230 --> 00:34:08,639
we do receive news

776
00:34:13,349 --> 00:34:12,240
we have uh pieces of newscasts that we

777
00:34:15,270 --> 00:34:13,359
receive

778
00:34:17,270 --> 00:34:15,280
i've read some newspapers and a little

779
00:34:18,629 --> 00:34:17,280
bit of time that i have i

780
00:34:20,550 --> 00:34:18,639
read them

781
00:34:23,750 --> 00:34:20,560
it's interesting

782
00:34:26,230 --> 00:34:23,760
to understand how the world keeps going

783
00:34:27,909 --> 00:34:26,240
from up here it looks still but it's

784
00:34:30,550 --> 00:34:27,919
it's still going

785
00:34:31,669 --> 00:34:30,560
and sometimes i look down when when we

786
00:34:33,669 --> 00:34:31,679
fly over

787
00:34:35,589 --> 00:34:33,679
north africa and i try to see if i can

788
00:34:37,669 --> 00:34:35,599

see something but i don't see anything i

789
00:34:39,109 --> 00:34:37,679
don't see anyone i would like to be able

790
00:34:41,109 --> 00:34:39,119
to see people down there and what's

791
00:34:44,550 --> 00:34:41,119
going on but i don't see it

792
00:34:46,470 --> 00:34:44,560
but i do know and we all know that

793
00:34:48,710 --> 00:34:46,480
things are happening

794
00:34:50,550 --> 00:34:48,720
and this is history

795
00:34:54,869 --> 00:34:50,560
continuing on

796
00:34:56,310 --> 00:34:54,879
and we are certainly with all those down

797
00:35:00,470 --> 00:34:56,320
there who are trying to have a better

798
00:35:00,480 --> 00:35:05,109
and again

799
00:35:07,910 --> 00:35:06,870
you're more or less halfway through your

800
00:35:10,150 --> 00:35:07,920
mission

801
00:35:15,670 --> 00:35:10,160
and what do you expect at this point and

802
00:35:19,510 --> 00:35:16,470
yes

803
00:35:21,670 --> 00:35:19,520
my halfway point was passed uh a little

804
00:35:24,390 --> 00:35:21,680
few a few days ago

805
00:35:26,310 --> 00:35:24,400
and i'm beginning to not feel like i

806
00:35:29,190 --> 00:35:26,320
just got here so that i don't have to

807
00:35:31,510 --> 00:35:29,200
ask scott where things got where things

808
00:35:33,750 --> 00:35:31,520
are and

809
00:35:36,470 --> 00:35:33,760
questions about this or that procedure

810
00:35:41,589 --> 00:35:38,710
i'm i'm feeling a little bit more at

811
00:35:44,630 --> 00:35:41,599
home now not such a guest anymore

812
00:35:47,109 --> 00:35:44,640
i also like working i i find more

813
00:35:49,589 --> 00:35:47,119

enjoyment in working because initially i

814
00:35:51,910 --> 00:35:49,599
was i was a little afraid of what i was

815
00:35:54,150 --> 00:35:51,920
doing i didn't i didn't want to create

816
00:35:59,910 --> 00:35:54,160
some disaster

817
00:36:03,910 --> 00:36:01,829
that this is going to get even better

818
00:36:06,230 --> 00:36:03,920
and i expect that i'm going to have a

819
00:36:08,390 --> 00:36:06,240
little more time to enjoy

820
00:36:11,510 --> 00:36:08,400
the the views from the outside and the

821
00:36:16,150 --> 00:36:13,270
for the inside being i'm not missing

822
00:36:19,990 --> 00:36:18,230
i do talk to my wife and my daughter

823
00:36:21,270 --> 00:36:20,000
who's growing up

824
00:36:23,349 --> 00:36:21,280
we uh

825
00:36:25,349 --> 00:36:23,359
we talk almost

826
00:36:27,349 --> 00:36:25,359
every day and we have video conferences

827
00:36:29,670 --> 00:36:27,359
every couple of weeks i would love to

828
00:36:32,150 --> 00:36:29,680
see them and hug them and go out with

829
00:36:39,030 --> 00:36:35,349
but it's not

830
00:36:42,390 --> 00:36:39,040
that is is destroying me

831
00:36:47,030 --> 00:36:43,829
jokingly

832
00:36:49,670 --> 00:36:47,040
a week ago i sent a message asking

833
00:36:51,750 --> 00:36:49,680
if they would send me a pizza

834
00:36:58,470 --> 00:36:51,760
so actually maybe the one thing that i'm