



1
00:00:07,030 --> 00:00:05,190
good afternoon thank you for joining us

2
00:00:09,430 --> 00:00:07,040
for this afternoon's uh conference with

3
00:00:11,589 --> 00:00:09,440
the sts-133 crew we'll start with

4
00:00:12,950 --> 00:00:11,599
opening remarks and then take questions

5
00:00:15,350 --> 00:00:12,960
we'll begin with the introduction of

6
00:00:16,950 --> 00:00:15,360
commander steve lindsay steve was born

7
00:00:19,029 --> 00:00:16,960
in arcadia california and considers

8
00:00:20,950 --> 00:00:19,039
temple city his hometown he holds

9
00:00:22,870 --> 00:00:20,960
degrees from the u.s air force academy

10
00:00:24,630 --> 00:00:22,880
and air force institute of technology

11
00:00:26,710 --> 00:00:24,640
he's also a retired colonel in the u.s

12
00:00:29,029 --> 00:00:26,720
air force steve was selected as an

13
00:00:30,790 --> 00:00:29,039

astronaut candidate in 1995 now a

14

00:00:33,190 --> 00:00:30,800

veteran of four space flights steve has

15

00:00:35,750 --> 00:00:33,200

acquired more than 1200 hours in space

16

00:00:39,270 --> 00:00:35,760

he served as the pilot on sts-87 and

17

00:00:41,910 --> 00:00:39,280

sts-95 and as commander for sts-104 and

18

00:00:44,950 --> 00:00:41,920

sts-121 we'll now turn it over to steve

19

00:00:46,549 --> 00:00:44,960

to introduce his crew thanks nicole

20

00:00:48,470 --> 00:00:46,559

um let's see just a real brief

21

00:00:49,990 --> 00:00:48,480

introduction of my crew as i mentioned

22

00:00:51,110 --> 00:00:50,000

i'm the commander this will be my fifth

23

00:00:53,590 --> 00:00:51,120

flight and actually my third flight

24

00:00:55,750 --> 00:00:53,600

aboard discovery um we've had a great

25

00:00:57,590 --> 00:00:55,760

training flow uh we're all ready to go

26

00:00:59,990 --> 00:00:57,600

all trained just a couple of more things

27

00:01:01,349 --> 00:01:00,000

we'll go into quarantine on monday and

28

00:01:03,670 --> 00:01:01,359

we're ready for a launch hopefully on

29

00:01:05,830 --> 00:01:03,680

november 1st if everything goes well so

30

00:01:07,670 --> 00:01:05,840

real briefly my crew my pilot sitting

31

00:01:10,149 --> 00:01:07,680

next to me eric bowe

32

00:01:12,070 --> 00:01:10,159

this will be eric's second flight

33

00:01:14,630 --> 00:01:12,080

he previously flown his pilot on on the

34

00:01:16,230 --> 00:01:14,640

space shuttle he'll be doing uh robotics

35

00:01:18,789 --> 00:01:16,240

uh on the shuttle

36

00:01:20,310 --> 00:01:18,799

um he's uh basically performing all the

37

00:01:21,670 --> 00:01:20,320

piloting tasks on the orbiter

38

00:01:23,510 --> 00:01:21,680

specifically he'll be doing the

39

00:01:26,630 --> 00:01:23,520

undocking and fly around and he'll fly

40

00:01:28,230 --> 00:01:26,640

some of the entry as we come in to land

41

00:01:29,590 --> 00:01:28,240

in addition to doing transfer and a

42

00:01:32,550 --> 00:01:29,600

whole bunch of other things on the

43

00:01:34,469 --> 00:01:32,560

flight uh next eric is al drew he's our

44

00:01:35,749 --> 00:01:34,479

ms-1 he'll be flying on the flight deck

45

00:01:37,830 --> 00:01:35,759

for ascent

46

00:01:38,950 --> 00:01:37,840

and he'll be on the middeck for entry

47

00:01:41,590 --> 00:01:38,960

al's are

48

00:01:43,990 --> 00:01:41,600

one of our space walkers so he'll be

49

00:01:45,590 --> 00:01:44,000

doing two space walks during the mission

50

00:01:47,830 --> 00:01:45,600

additionally he'll be flying the robotic

51
00:01:49,830 --> 00:01:47,840
arm with eric and myself using the

52
00:01:52,389 --> 00:01:49,840
shuttle robotic arm for inspection tasks

53
00:01:53,749 --> 00:01:52,399
and all the other shuttle robotic arms

54
00:01:55,910 --> 00:01:53,759
operations that are planned for the

55
00:01:58,149 --> 00:01:55,920
flight um and this will be uh al's

56
00:01:59,350 --> 00:01:58,159
second flight as well on the shuttle and

57
00:02:02,149 --> 00:01:59,360
next to al

58
00:02:03,749 --> 00:02:02,159
tim kopra is our ms2 he's our flight

59
00:02:06,469 --> 00:02:03,759
engineer on the flight deck for acid and

60
00:02:08,309 --> 00:02:06,479
entry he's also our ev1 or our lead

61
00:02:10,790 --> 00:02:08,319
spacewalker for the flight uh performing

62
00:02:13,110 --> 00:02:10,800
two evas in addition tim will be flying

63
00:02:15,110 --> 00:02:13,120

the uh space station robotic arm during

64

00:02:16,949 --> 00:02:15,120

a number of our different operations

65

00:02:18,710 --> 00:02:16,959

while we're docked to space station tim

66

00:02:21,670 --> 00:02:18,720

previously flew on space station a long

67

00:02:22,869 --> 00:02:21,680

duration mission uh next to tim i've got

68

00:02:25,510 --> 00:02:22,879

mike barrett

69

00:02:27,750 --> 00:02:25,520

and mike is uh is also on his second

70

00:02:29,350 --> 00:02:27,760

space flight having previously flown a

71

00:02:31,589 --> 00:02:29,360

six-month mission on the space station

72

00:02:33,670 --> 00:02:31,599

and he actually is actually be mike's

73

00:02:35,830 --> 00:02:33,680

first shuttle mission he flew uh up and

74

00:02:37,910 --> 00:02:35,840

down on the soyuz as flight engineer or

75

00:02:39,589 --> 00:02:37,920

essentially the pilot position so he has

76

00:02:41,430 --> 00:02:39,599

a lot of experience of that in addition

77

00:02:43,830 --> 00:02:41,440

to doing spacewalks in russian

78

00:02:45,589 --> 00:02:43,840

spacesuits on this flight um mike will

79

00:02:47,430 --> 00:02:45,599

be our mid-deck captain for both assen

80

00:02:50,150 --> 00:02:47,440

and entry run and post insertion deorbit

81

00:02:52,470 --> 00:02:50,160

prep he'll be flying the space station

82

00:02:54,070 --> 00:02:52,480

arm during a number of the operations

83

00:02:56,550 --> 00:02:54,080

while we're docked as well as during

84

00:02:57,910 --> 00:02:56,560

both of the spacewalks um and he'll be

85

00:02:59,589 --> 00:02:57,920

doing a lot of transfer work and

86

00:03:01,430 --> 00:02:59,599

actually doing some maintenance and

87

00:03:03,750 --> 00:03:01,440

repair work on board the space station

88

00:03:06,070 --> 00:03:03,760

while he's there um finally last but not

89

00:03:08,790 --> 00:03:06,080

least nicole stott uh she'll be flying

90

00:03:11,350 --> 00:03:08,800

on the middeck for rent for ascent and

91

00:03:12,550 --> 00:03:11,360

on the flight deck for entry um nicole's

92

00:03:14,390 --> 00:03:12,560

previously experienced with a

93

00:03:16,470 --> 00:03:14,400

long-duration space flight aboard the

94

00:03:17,990 --> 00:03:16,480

space station nicole's been doing a lot

95

00:03:19,350 --> 00:03:18,000

of the space station robotic arm

96

00:03:20,710 --> 00:03:19,360

operations

97

00:03:23,030 --> 00:03:20,720

additionally probably our biggest job

98

00:03:24,710 --> 00:03:23,040

during doc dops is she'll be uh

99

00:03:26,470 --> 00:03:24,720

directing or running the spacewalks from

100

00:03:29,110 --> 00:03:26,480

inside the orbiter as the

101
00:03:30,949 --> 00:03:29,120
as the iv crew member and so i've got a

102
00:03:32,550 --> 00:03:30,959
great crew i've got a lot of talent i've

103
00:03:34,470 --> 00:03:32,560
got a lot of experience on this crew

104
00:03:36,949 --> 00:03:34,480
something unique that we have is three

105
00:03:38,630 --> 00:03:36,959
veteran space station astronauts

106
00:03:40,309 --> 00:03:38,640
so they're they'll be up there to keep

107
00:03:42,309 --> 00:03:40,319
us out of trouble uh while we're on

108
00:03:44,550 --> 00:03:42,319
board space station so we have a great

109
00:03:46,390 --> 00:03:44,560
mission plan talked to the uh onboard

110
00:03:48,390 --> 00:03:46,400
crew this morning just hanging out doing

111
00:03:50,710 --> 00:03:48,400
some last-minute details they're ready

112
00:03:52,710 --> 00:03:50,720
for us and with a few more

113
00:03:54,309 --> 00:03:52,720

preparatory things to go and so we're

114

00:03:56,630 --> 00:03:54,319

looking forward to having a great

115

00:03:58,550 --> 00:03:56,640

mission up there and so with that

116

00:04:00,070 --> 00:03:58,560

i guess we're ready uh to take questions

117

00:04:02,229 --> 00:04:00,080

all right thank you steve we're going to

118

00:04:04,309 --> 00:04:02,239

start on this side if you can

119

00:04:08,229 --> 00:04:04,319

state your name and affiliation and

120

00:04:12,070 --> 00:04:09,830

oh thank you mark

121

00:04:13,830 --> 00:04:12,080

representing aviation week

122

00:04:15,750 --> 00:04:13,840

i wonder

123

00:04:17,390 --> 00:04:15,760

perhaps steve lindsay or you can pick

124

00:04:18,949 --> 00:04:17,400

someone but speaking a little

125

00:04:20,870 --> 00:04:18,959

philosophically

126

00:04:22,710 --> 00:04:20,880

about discovery and the kind of

127

00:04:23,830 --> 00:04:22,720

condition you'd like to bring her back

128

00:04:32,390 --> 00:04:23,840

and

129

00:04:34,870 --> 00:04:32,400

museum sorry

130

00:04:37,430 --> 00:04:34,880

and um just like to know what your what

131

00:04:39,670 --> 00:04:37,440

your thoughts are about returning it and

132

00:04:41,270 --> 00:04:39,680

what happens to it after your flight

133

00:04:42,870 --> 00:04:41,280

well um

134

00:04:44,469 --> 00:04:42,880

we were actually down down at kennedy

135

00:04:46,150 --> 00:04:44,479

space center last week doing the

136

00:04:47,830 --> 00:04:46,160

terminal countdown demonstration test

137

00:04:49,909 --> 00:04:47,840

the dry count and uh

138

00:04:50,790 --> 00:04:49,919

talked to the uh the folks down at ksc

139

00:04:51,749 --> 00:04:50,800

and

140

00:04:54,150 --> 00:04:51,759

it's interesting because i've always

141

00:04:55,510 --> 00:04:54,160

viewed the vehicles as belonging to uh

142

00:04:57,430 --> 00:04:55,520

kennedy space center and they kind of

143

00:04:59,510 --> 00:04:57,440

loan them to us for a couple of weeks

144

00:05:01,510 --> 00:04:59,520

and our job is to uh

145

00:05:03,909 --> 00:05:01,520

is to take care of them as best we can

146

00:05:06,230 --> 00:05:03,919

and and and i always promise to bring

147

00:05:08,310 --> 00:05:06,240

the vehicle back at least as clean as we

148

00:05:10,469 --> 00:05:08,320

got it which is pretty much impossible

149

00:05:11,749 --> 00:05:10,479

to do because they they're pristine i'm

150

00:05:14,150 --> 00:05:11,759

always amazed walking into these

151

00:05:16,790 --> 00:05:14,160

vehicles you know discovery being

152

00:05:19,270 --> 00:05:16,800

gosh 25 years old and you still walk in

153

00:05:21,029 --> 00:05:19,280

and it's like a new car and so

154

00:05:22,710 --> 00:05:21,039

we're going to deliver it back hopefully

155

00:05:24,550 --> 00:05:22,720

in the best condition possible and take

156

00:05:27,029 --> 00:05:24,560

the best care that we can with it and

157

00:05:28,870 --> 00:05:27,039

it's uh it's gonna be a great vehicle um

158

00:05:30,710 --> 00:05:28,880

historically it's obviously a very

159

00:05:32,710 --> 00:05:30,720

historical vehicle having flown all the

160

00:05:33,909 --> 00:05:32,720

return to flight test missions after

161

00:05:35,029 --> 00:05:33,919

both the challenger and columbia

162

00:05:37,749 --> 00:05:35,039

accidents it

163

00:05:39,749 --> 00:05:37,759

deployed hubble it's uh it's the fleet

164

00:05:42,150 --> 00:05:39,759

leader in terms of number of flights uh

165

00:05:43,510 --> 00:05:42,160

it'll flown about a year on orbit by the

166

00:05:45,670 --> 00:05:43,520

time we're done with it which is pretty

167

00:05:47,990 --> 00:05:45,680

remarkable for a space shuttle

168

00:05:49,830 --> 00:05:48,000

personally having flown it twice and now

169

00:05:51,430 --> 00:05:49,840

in my third flight it has a special

170

00:05:53,510 --> 00:05:51,440

meaning to me so

171

00:05:55,990 --> 00:05:53,520

my thoughts on when it comes back and

172

00:05:57,749 --> 00:05:56,000

when it's done with its service life i

173

00:05:59,430 --> 00:05:57,759

um you know they haven't made decisions

174

00:06:01,830 --> 00:05:59,440

on where these vehicles are going yet

175

00:06:03,830 --> 00:06:01,840

but i i think we all have pretty good

176
00:06:06,309 --> 00:06:03,840
suspicion on where this one's going but

177
00:06:07,990 --> 00:06:06,319
i just hope that when it's displayed i

178
00:06:10,629 --> 00:06:08,000
would like to see it displayed in in

179
00:06:13,110 --> 00:06:10,639
such a way that that people that go and

180
00:06:15,110 --> 00:06:13,120
see it for the many years to come can

181
00:06:16,469 --> 00:06:15,120
get an appreciation for what it was like

182
00:06:17,909 --> 00:06:16,479
to fly it

183
00:06:19,670 --> 00:06:17,919
from our perspective you know what was

184
00:06:21,670 --> 00:06:19,680
like in a cockpit what was really like

185
00:06:23,590 --> 00:06:21,680
to operate an appreciation for all the

186
00:06:26,070 --> 00:06:23,600
missions it did and all the versatility

187
00:06:27,749 --> 00:06:26,080
that the shuttle has offered and in the

188
00:06:29,510 --> 00:06:27,759

end though when it really comes down to

189

00:06:31,029 --> 00:06:29,520

it

190

00:06:32,629 --> 00:06:31,039

people are going to see the vehicles but

191

00:06:34,790 --> 00:06:32,639

for those of us that have participated

192

00:06:36,230 --> 00:06:34,800

in the space shuttle program it's really

193

00:06:37,830 --> 00:06:36,240

more about the people when i think of

194

00:06:39,749 --> 00:06:37,840

space shuttle program i think people i

195

00:06:41,430 --> 00:06:39,759

don't think vehicles and

196

00:06:42,870 --> 00:06:41,440

and i think that's probably for all of

197

00:06:44,390 --> 00:06:42,880

us the biggest memory that we'll have

198

00:06:46,710 --> 00:06:44,400

out of this is the opportunity to work

199

00:06:50,309 --> 00:06:46,720

with a fantastic team all across the

200

00:06:52,469 --> 00:06:50,319

country over many years of this program

201
00:06:54,790 --> 00:06:52,479
all right next question robert

202
00:06:56,710 --> 00:06:54,800
hi robert pelman with collectspace.com

203
00:06:59,270 --> 00:06:56,720
sort of work to work off that question

204
00:07:02,790 --> 00:06:59,280
and the answer um what does it mean to

205
00:07:04,790 --> 00:07:02,800
each of you personally to be on a final

206
00:07:06,469 --> 00:07:04,800
flight for an orbiter

207
00:07:09,029 --> 00:07:06,479
um does it carry an additional

208
00:07:10,629 --> 00:07:09,039
significance is there added symbolism

209
00:07:15,029 --> 00:07:10,639
beyond the goals that you have set out

210
00:07:18,629 --> 00:07:17,189
i'm pretty talked when you guys i think

211
00:07:21,830 --> 00:07:18,639
overall i think all of us are happy to

212
00:07:24,469 --> 00:07:21,840
be on a a another flight get to go fly

213
00:07:25,830 --> 00:07:24,479

again and for us obviously it's always

214

00:07:27,589 --> 00:07:25,840

nice you know it's a little bittersweet

215

00:07:28,469 --> 00:07:27,599

obviously when something's coming to an

216

00:07:31,270 --> 00:07:28,479

end

217

00:07:32,790 --> 00:07:31,280

the uh but it's a privilege to get the

218

00:07:34,230 --> 00:07:32,800

fly of the vehicle and steve said it

219

00:07:36,550 --> 00:07:34,240

very well it's really about the people

220

00:07:38,150 --> 00:07:36,560

you know we have discovery but there's

221

00:07:40,309 --> 00:07:38,160

thousands of people that make up getting

222

00:07:43,110 --> 00:07:40,319

keeping that vehicle flying and making

223

00:07:45,350 --> 00:07:43,120

it uh look look the way it does and and

224

00:07:47,430 --> 00:07:45,360

fly the way it does for me that's really

225

00:07:52,469 --> 00:07:47,440

what makes this a great privilege to get

226

00:07:55,830 --> 00:07:54,550

anybody else want to answer that

227

00:08:00,150 --> 00:07:55,840

okay

228

00:08:03,909 --> 00:08:02,469

what these guys have said it's that

229

00:08:06,790 --> 00:08:03,919

you know this

230

00:08:08,309 --> 00:08:06,800

it is a historic thing i think that um

231

00:08:11,430 --> 00:08:08,319

you know that we have such a special

232

00:08:13,270 --> 00:08:11,440

vehicle to fly and you know the hope uh

233

00:08:14,230 --> 00:08:13,280

in addition to having successful mission

234

00:08:17,430 --> 00:08:14,240

is that

235

00:08:19,430 --> 00:08:17,440

um in conclusion we'll be celebrating

236

00:08:22,150 --> 00:08:19,440

the just the real significance of the

237

00:08:23,670 --> 00:08:22,160

vehicle itself of um and that includes

238

00:08:25,749 --> 00:08:23,680

the people because it wouldn't happen

239

00:08:27,909 --> 00:08:25,759

without them and i think that

240

00:08:30,150 --> 00:08:27,919

we have to look at this as uh as a

241

00:08:32,870 --> 00:08:30,160

celebration of just how wonderful

242

00:08:33,909 --> 00:08:32,880

uh discovery has performed and just how

243

00:08:35,509 --> 00:08:33,919

just

244

00:08:36,389 --> 00:08:35,519

fantastic the team that has put it

245

00:08:37,509 --> 00:08:36,399

together

246

00:08:41,909 --> 00:08:37,519

um

247

00:08:44,790 --> 00:08:42,790

all right

248

00:08:45,990 --> 00:08:44,800

uh bill harvard cbs so i'll ask the call

249

00:08:48,070 --> 00:08:46,000

this question

250

00:08:49,829 --> 00:08:48,080

mike or tim could also add you as

251
00:08:51,190 --> 00:08:49,839
commander said you guys are veterans of

252
00:08:52,949 --> 00:08:51,200
long duration flights on board the

253
00:08:54,310 --> 00:08:52,959
station and i wonder what does that

254
00:08:55,910 --> 00:08:54,320
really bring to the table or does it

255
00:08:57,750 --> 00:08:55,920
bring anything i mean when you get down

256
00:09:04,230 --> 00:08:57,760
to it

257
00:09:07,990 --> 00:09:06,230
no seriously what does

258
00:09:10,630 --> 00:09:08,000
past experience on the station help you

259
00:09:12,710 --> 00:09:10,640
guys with on a mission like this

260
00:09:14,870 --> 00:09:12,720
well well i think um

261
00:09:16,389 --> 00:09:14,880
it just to start i think and the fact

262
00:09:19,110 --> 00:09:16,399
that i think everybody here is an

263
00:09:20,710 --> 00:09:19,120

experienced flyer just kind of puts um

264

00:09:21,829 --> 00:09:20,720

you know maybe a

265

00:09:24,310 --> 00:09:21,839

kind of a boost to the level of

266

00:09:26,470 --> 00:09:24,320

efficiency we'll start out with um the

267

00:09:27,829 --> 00:09:26,480

three of us certainly are i guess you

268

00:09:30,070 --> 00:09:27,839

could say intimately involved or

269

00:09:32,310 --> 00:09:30,080

intimately knowledgeable of the layout

270

00:09:34,070 --> 00:09:32,320

of the station and and how to get around

271

00:09:35,509 --> 00:09:34,080

and where things are and

272

00:09:38,310 --> 00:09:35,519

kind of the day-to-day operations that

273

00:09:40,070 --> 00:09:38,320

go on normally up there but you know as

274

00:09:41,430 --> 00:09:40,080

a crew i think we just will be in a

275

00:09:42,870 --> 00:09:41,440

position to just

276

00:09:44,630 --> 00:09:42,880

operate a little bit more efficiently

277

00:09:45,509 --> 00:09:44,640

right out you know right as we cross the

278

00:09:47,030 --> 00:09:45,519

hatch

279

00:09:47,750 --> 00:09:47,040

yeah if i could jump in a little bit on

280

00:09:49,269 --> 00:09:47,760

that

281

00:09:51,110 --> 00:09:49,279

seeing him from the other side

282

00:09:52,870 --> 00:09:51,120

been up on station a couple of times and

283

00:09:54,710 --> 00:09:52,880

when you when you get up there

284

00:09:56,150 --> 00:09:54,720

and you're with a group of folks that

285

00:09:57,990 --> 00:09:56,160

have been on station for a long period

286

00:09:59,269 --> 00:09:58,000

of time in terms of just moving around

287

00:10:00,870 --> 00:09:59,279

the vehicle

288

00:10:02,310 --> 00:10:00,880

they go through a series you go through

289

00:10:04,790 --> 00:10:02,320

a series of adaptations when you get

290

00:10:05,910 --> 00:10:04,800

into zero g and and when you your first

291

00:10:07,509 --> 00:10:05,920

flight when you first get up there

292

00:10:09,269 --> 00:10:07,519

you're just bouncing all over the place

293

00:10:11,509 --> 00:10:09,279

because you don't understand how little

294

00:10:13,269 --> 00:10:11,519

force is really required to move around

295

00:10:15,590 --> 00:10:13,279

you get better and better but you never

296

00:10:17,110 --> 00:10:15,600

really achieve a high level proficiency

297

00:10:18,790 --> 00:10:17,120

on a short duration flight if you watch

298

00:10:19,829 --> 00:10:18,800

a space station crew member move around

299

00:10:21,829 --> 00:10:19,839

on orbit

300

00:10:24,389 --> 00:10:21,839

their ability to get things done in a

301
00:10:26,389 --> 00:10:24,399
very efficient and effective manner far

302
00:10:27,430 --> 00:10:26,399
exceeds what we can do and you really

303
00:10:28,870 --> 00:10:27,440
notice it when you're when you're

304
00:10:30,870 --> 00:10:28,880
working next to somebody that's been up

305
00:10:32,710 --> 00:10:30,880
on space station for a few months that

306
00:10:34,710 --> 00:10:32,720
they can do things so much faster and so

307
00:10:37,430 --> 00:10:34,720
much better than you can so they i think

308
00:10:39,030 --> 00:10:37,440
they bring that to the table all of the

309
00:10:40,790 --> 00:10:39,040
all of the things that

310
00:10:42,790 --> 00:10:40,800
kind of the bread and butter what we do

311
00:10:44,630 --> 00:10:42,800
in day-to-day operations you know the

312
00:10:46,470 --> 00:10:44,640
when we have to do different photography

313
00:10:47,750 --> 00:10:46,480

things when you know hooking up

314

00:10:49,750 --> 00:10:47,760

electrical components working the

315

00:10:51,269 --> 00:10:49,760

computers on space station which are

316

00:10:52,949 --> 00:10:51,279

similar to shuttle but different they

317

00:10:54,790 --> 00:10:52,959

work different the systems are different

318

00:10:56,630 --> 00:10:54,800

having all that knowledge built into the

319

00:10:58,150 --> 00:10:56,640

crew i've never i've never actually been

320

00:11:00,150 --> 00:10:58,160

on a crew where we had space station

321

00:11:01,110 --> 00:11:00,160

experience folks i think but with all of

322

00:11:05,350 --> 00:11:01,120

that

323

00:11:06,630 --> 00:11:05,360

we're not sure about and uh and so i

324

00:11:07,829 --> 00:11:06,640

think it brings a lot i mean we'll see

325

00:11:09,350 --> 00:11:07,839

how it goes but i think it brings an

326

00:11:11,430 --> 00:11:09,360

awful lot

327

00:11:13,910 --> 00:11:11,440

to death

328

00:11:15,670 --> 00:11:13,920

that's that's actually very important

329

00:11:17,110 --> 00:11:15,680

and they do know how to work it and so

330

00:11:18,630 --> 00:11:17,120

uh yeah

331

00:11:20,230 --> 00:11:18,640

one more quick one for me for for tim

332

00:11:21,509 --> 00:11:20,240

morale i was confused in the eva

333

00:11:23,190 --> 00:11:21,519

briefing about where you guys are when

334

00:11:24,790 --> 00:11:23,200

you're vending aluminum aluminum when

335

00:11:27,269 --> 00:11:24,800

you're getting ammonia

336

00:11:29,110 --> 00:11:27,279

europa i guess uh right right by the

337

00:11:30,310 --> 00:11:29,120

pump module on the front side i didn't

338

00:11:31,910 --> 00:11:30,320

know where tim was i just want to know

339

00:11:33,590 --> 00:11:31,920

where you guys were so if things go per

340

00:11:35,670 --> 00:11:33,600

the timeline i'll be crawling over the

341

00:11:37,750 --> 00:11:35,680

top of lab and heading towards columbus

342

00:11:40,550 --> 00:11:37,760

so i'm going to be well clear in fact

343

00:11:42,310 --> 00:11:40,560

ideally if uh if we had to synchronize

344

00:11:44,470 --> 00:11:42,320

in another way i could be in a position

345

00:11:47,030 --> 00:11:44,480

to take photographs of the venting but

346

00:11:49,750 --> 00:11:47,040

by the time i get to my location i think

347

00:11:53,030 --> 00:11:49,760

the venting is going to be complete

348

00:11:57,110 --> 00:11:54,870

jill talk with the bay area houston

349

00:11:59,350 --> 00:11:57,120

magazine a similar question to bill's

350

00:12:00,310 --> 00:11:59,360

first question for the past station crew

351
00:12:01,269 --> 00:12:00,320
members

352
00:12:02,230 --> 00:12:01,279
things are going to be a little bit

353
00:12:04,230 --> 00:12:02,240
different obviously you're not going to

354
00:12:06,069 --> 00:12:04,240
have the marathon

355
00:12:08,230 --> 00:12:06,079
equivalent of a space flight you have a

356
00:12:11,269 --> 00:12:08,240
sprint because you're on shuttle and

357
00:12:12,790 --> 00:12:11,279
this time you will have cupola so you

358
00:12:15,430 --> 00:12:12,800
will have a bit of

359
00:12:17,590 --> 00:12:15,440
fun challenge a difference you're it'll

360
00:12:19,509 --> 00:12:17,600
be a different flight so what thoughts

361
00:12:21,110 --> 00:12:19,519
and feelings do you have about that

362
00:12:22,470 --> 00:12:21,120
where you'll be able to have a bit of a

363
00:12:23,430 --> 00:12:22,480

different flight this time a different

364

00:12:26,150 --> 00:12:23,440

experience

365

00:12:28,310 --> 00:12:26,160

i'll take that to start with um you know

366

00:12:29,910 --> 00:12:28,320

we often use those analogies marathon

367

00:12:32,230 --> 00:12:29,920

versus sprint i want to remind people

368

00:12:34,550 --> 00:12:32,240

that a marathon you're still running

369

00:12:36,150 --> 00:12:34,560

and six months are running you get more

370

00:12:38,230 --> 00:12:36,160

efficient at it and you actually cover

371

00:12:39,910 --> 00:12:38,240

more ground at the end of a day after

372

00:12:41,750 --> 00:12:39,920

say three months up there than than you

373

00:12:43,030 --> 00:12:41,760

would at the very very start of your

374

00:12:45,110 --> 00:12:43,040

race

375

00:12:47,350 --> 00:12:45,120

i was surprised how little free time we

376

00:12:48,790 --> 00:12:47,360

had on our station mission after six and

377

00:12:51,430 --> 00:12:48,800

a half months we were still working very

378

00:12:53,910 --> 00:12:51,440

long days so i wouldn't call a station

379

00:12:55,509 --> 00:12:53,920

mission leisurely in any way shape or

380

00:12:57,269 --> 00:12:55,519

form

381

00:12:58,949 --> 00:12:57,279

i think for all of us we're looking

382

00:13:00,470 --> 00:12:58,959

forward to a larger station and you

383

00:13:01,910 --> 00:13:00,480

mentioned the cupola

384

00:13:03,350 --> 00:13:01,920

and

385

00:13:05,750 --> 00:13:03,360

certainly most people would agree that

386

00:13:08,150 --> 00:13:05,760

the best use of any downtime you do get

387

00:13:09,750 --> 00:13:08,160

which is very little is to be looking

388

00:13:11,350 --> 00:13:09,760

out the window and even that you're

389

00:13:13,030 --> 00:13:11,360

typically using a camera and trying to

390

00:13:14,629 --> 00:13:13,040

take pictures of geological sites of

391

00:13:16,949 --> 00:13:14,639

interest but i think most of us can't

392

00:13:18,389 --> 00:13:16,959

wait to see the cupola for uh tim and

393

00:13:19,910 --> 00:13:18,399

nicole and i

394

00:13:22,710 --> 00:13:19,920

will be doing a lot of the robotic ops

395

00:13:24,870 --> 00:13:22,720

with the uh station arm and that is

396

00:13:27,190 --> 00:13:24,880

currently the uh robotic workstation

397

00:13:28,550 --> 00:13:27,200

placed azure so we're very much looking

398

00:13:29,990 --> 00:13:28,560

forward to doing business out of there

399

00:13:31,430 --> 00:13:30,000

and relying a little bit less on our

400

00:13:35,190 --> 00:13:31,440

camera views and a little bit more on

401
00:13:38,230 --> 00:13:35,200
direct line of sight

402
00:13:39,670 --> 00:13:38,240
uh gina cincer abc news for eric eric

403
00:13:41,430 --> 00:13:39,680
what are you looking forward on this

404
00:13:43,430 --> 00:13:41,440
mission it's your second mission i mean

405
00:13:45,350 --> 00:13:43,440
like they said no one's a rookie anymore

406
00:13:47,189 --> 00:13:45,360
or not a rookie but not you're all

407
00:13:49,189 --> 00:13:47,199
experienced but what's going to be the

408
00:13:50,470 --> 00:13:49,199
highlight of this mission for you

409
00:13:52,310 --> 00:13:50,480
well the highlight for the mission for

410
00:13:53,590 --> 00:13:52,320
me is actually you know the first

411
00:13:55,189 --> 00:13:53,600
time you're up there things go pretty

412
00:13:56,949 --> 00:13:55,199
quick i'm sure it's going to go fast

413
00:13:58,389 --> 00:13:56,959

this time as well but i think i'll have

414

00:13:59,829 --> 00:13:58,399

a little bit more time to look around

415

00:14:01,350 --> 00:13:59,839

and kind of pay attention to the small

416

00:14:02,710 --> 00:14:01,360

details to really

417

00:14:04,069 --> 00:14:02,720

you know soak in

418

00:14:05,750 --> 00:14:04,079

all the things that are happening at the

419

00:14:07,269 --> 00:14:05,760

same time

420

00:14:09,269 --> 00:14:07,279

you know just like the last flight i'm

421

00:14:11,269 --> 00:14:09,279

going to enjoy just again working with

422

00:14:13,189 --> 00:14:11,279

the control teams you know it's a big

423

00:14:15,030 --> 00:14:13,199

team effort to get the job done so to me

424

00:14:16,389 --> 00:14:15,040

that's always a fun part and obviously

425

00:14:18,069 --> 00:14:16,399

getting the opportunity mike had

426

00:14:19,509 --> 00:14:18,079

mentioned looking out at the cupola look

427

00:14:21,110 --> 00:14:19,519

out the windows and see

428

00:14:22,710 --> 00:14:21,120

see the view out there but i think the

429

00:14:24,790 --> 00:14:22,720

the biggest overall thing that i hope to

430

00:14:26,069 --> 00:14:24,800

get out of this is just to really absorb

431

00:14:27,430 --> 00:14:26,079

some of the smaller details that you

432

00:14:33,509 --> 00:14:27,440

might that i may have missed on the

433

00:14:37,829 --> 00:14:35,509

eric berger with the houston chronicle

434

00:14:39,110 --> 00:14:37,839

uh question for steve or maybe tim mike

435

00:14:40,389 --> 00:14:39,120

or nicole people have been to the

436

00:14:41,590 --> 00:14:40,399

station before

437

00:14:42,550 --> 00:14:41,600

for some time

438

00:14:43,990 --> 00:14:42,560

uh

439

00:14:45,509 --> 00:14:44,000

you when y'all leave you're going to be

440

00:14:48,069 --> 00:14:45,519

seeing the station in its final

441

00:14:50,069 --> 00:14:48,079

configuration with the last module

442

00:14:52,470 --> 00:14:50,079

attached to it so maybe

443

00:14:53,910 --> 00:14:52,480

one of you could talk about sort of

444

00:14:55,590 --> 00:14:53,920

seeing the station at different points

445

00:14:57,750 --> 00:14:55,600

in its evolution then getting to see it

446

00:14:59,590 --> 00:14:57,760

in its final form as you fly away and

447

00:15:03,030 --> 00:14:59,600

really sort of be the first crew to do

448

00:15:05,110 --> 00:15:03,040

that from an external viewpoint

449

00:15:06,269 --> 00:15:05,120

i can give you one impression i had as i

450

00:15:08,949 --> 00:15:06,279

left on

451
00:15:10,949 --> 00:15:08,959
sts-128 and having spent a long time

452
00:15:12,470 --> 00:15:10,959
like the rest of my crewmates

453
00:15:14,710 --> 00:15:12,480
especially the ones that were in our

454
00:15:16,629 --> 00:15:14,720
astronaut class waiting to fly

455
00:15:19,269 --> 00:15:16,639
you know you you go to program meetings

456
00:15:21,350 --> 00:15:19,279
you work with hardware vendors and

457
00:15:23,750 --> 00:15:21,360
you work at johnson space and other

458
00:15:26,310 --> 00:15:23,760
other nasa centers to build this space

459
00:15:28,069 --> 00:15:26,320
station and to be able to see it all

460
00:15:30,230 --> 00:15:28,079
working together this really like a

461
00:15:32,470 --> 00:15:30,240
flying city in space is is almost

462
00:15:34,710 --> 00:15:32,480
overwhelming and uh for all the hard

463
00:15:36,710 --> 00:15:34,720

work and sometimes uh conflict and

464

00:15:39,509 --> 00:15:36,720

consternation is really great to see

465

00:15:40,949 --> 00:15:39,519

this beautiful piece of hardware that's

466

00:15:42,150 --> 00:15:40,959

flying in space and so i'm looking

467

00:15:43,590 --> 00:15:42,160

forward to seeing it with a few more

468

00:15:44,949 --> 00:15:43,600

components and

469

00:15:46,470 --> 00:15:44,959

like mike had talked about from the

470

00:15:48,949 --> 00:15:46,480

inside being able to see outside the

471

00:15:51,269 --> 00:15:48,959

cupola

472

00:15:53,749 --> 00:15:51,279

all right great hi greg dobbs with hd

473

00:15:55,829 --> 00:15:53,759

net television steve your first answer

474

00:15:57,910 --> 00:15:55,839

to the first question

475

00:15:59,749 --> 00:15:57,920

was that you always try to bring a

476
00:16:01,350 --> 00:15:59,759
vehicle home in the same condition in

477
00:16:02,949 --> 00:16:01,360
which you left

478
00:16:04,710 --> 00:16:02,959
it may be a weird question but if

479
00:16:06,470 --> 00:16:04,720
somebody didn't think that way didn't

480
00:16:09,670 --> 00:16:06,480
operate that way what is it that could

481
00:16:11,030 --> 00:16:09,680
be done to a vehicle so it wouldn't come

482
00:16:12,389 --> 00:16:11,040
back as good

483
00:16:15,269 --> 00:16:12,399
you know what is it you're going to do

484
00:16:17,030 --> 00:16:15,279
to make sure it does

485
00:16:19,670 --> 00:16:17,040
oh well

486
00:16:22,629 --> 00:16:19,680
gosh a whole bunch of things i mean

487
00:16:24,790 --> 00:16:22,639
first and foremost uh we uh you know in

488
00:16:26,150 --> 00:16:24,800

every activity we do on the shuttle and

489

00:16:27,030 --> 00:16:26,160

every uh

490

00:16:28,710 --> 00:16:27,040

um

491

00:16:31,430 --> 00:16:28,720

procedure we do we have procedures that

492

00:16:32,710 --> 00:16:31,440

we follow and uh and in ways of doing

493

00:16:33,829 --> 00:16:32,720

business and we want to make sure we

494

00:16:36,470 --> 00:16:33,839

always stay

495

00:16:38,310 --> 00:16:36,480

doing those things correctly

496

00:16:40,150 --> 00:16:38,320

in terms of the vehicle itself

497

00:16:41,430 --> 00:16:40,160

um you know housekeeping believe it or

498

00:16:42,629 --> 00:16:41,440

not is a really big deal when you're

499

00:16:44,629 --> 00:16:42,639

living you know it's like living in

500

00:16:46,230 --> 00:16:44,639

winnebago for 14 days and you want to

501
00:16:48,550 --> 00:16:46,240
keep it clean and so housekeeping is a

502
00:16:50,310 --> 00:16:48,560
really important part

503
00:16:52,949 --> 00:16:50,320
so we try uh try to take really good

504
00:16:55,110 --> 00:16:52,959
care of it um try not to uh do anything

505
00:16:57,350 --> 00:16:55,120
with it we shouldn't be doing and make

506
00:16:59,030 --> 00:16:57,360
sure we follow the procedures and uh you

507
00:17:00,629 --> 00:16:59,040
know it's what i just said is what every

508
00:17:01,749 --> 00:17:00,639
crew thinks the same way as they just

509
00:17:04,789 --> 00:17:01,759
want to bring it back as good as

510
00:17:06,150 --> 00:17:04,799
possible in in the past it's uh

511
00:17:07,270 --> 00:17:06,160
you know it's it's always because we're

512
00:17:08,390 --> 00:17:07,280
going to turn the vehicle we're going to

513
00:17:09,669 --> 00:17:08,400

use it again

514

00:17:11,189 --> 00:17:09,679

this is a little unique because it's the

515

00:17:12,949 --> 00:17:11,199

last time we're going to learn uh use

516

00:17:14,470 --> 00:17:12,959

the vehicle but you know if we were to

517

00:17:16,549 --> 00:17:14,480

land and all of a sudden every the whole

518

00:17:18,390 --> 00:17:16,559

world were to change they'd they we're

519

00:17:19,909 --> 00:17:18,400

going to get ready to fly it again for

520

00:17:21,669 --> 00:17:19,919

some reason it would be ready to fly

521

00:17:24,949 --> 00:17:21,679

again and so that would be our objective

522

00:17:28,630 --> 00:17:26,470

all right

523

00:17:31,909 --> 00:17:28,640

phillips loss with nasaspaceflight.com

524

00:17:33,990 --> 00:17:31,919

not sure who this is for exactly but

525

00:17:35,669 --> 00:17:34,000

your mission has changed from when it

526

00:17:37,110 --> 00:17:35,679

was originally when you're originally

527

00:17:39,990 --> 00:17:37,120

assigned this is going to be an eight

528

00:17:43,350 --> 00:17:40,000

plus one day mission no evas

529

00:17:45,590 --> 00:17:43,360

and now you've had two evas added and

530

00:17:46,630 --> 00:17:45,600

three flight days um could you talk

531

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

about

532

00:17:49,590 --> 00:17:48,000

the changes that have occurred during

533

00:17:51,430 --> 00:17:49,600

the training flow and

534

00:17:52,549 --> 00:17:51,440

kind of you know what's what's happened

535

00:17:53,990 --> 00:17:52,559

with that

536

00:17:55,909 --> 00:17:54,000

sure um

537

00:17:57,190 --> 00:17:55,919

you know we started out we were the we

538

00:17:59,190 --> 00:17:57,200

were going to be the final flight in the

539

00:18:01,830 --> 00:17:59,200

space shuttle program and uh and the

540

00:18:03,750 --> 00:18:01,840

objective of that final flight

541

00:18:05,990 --> 00:18:03,760

to make it really simple so somebody

542

00:18:07,669 --> 00:18:06,000

like me can understand was basically

543

00:18:09,029 --> 00:18:07,679

leave space station in the best possible

544

00:18:11,029 --> 00:18:09,039

configuration which means get the

545

00:18:12,950 --> 00:18:11,039

maximum amount of mass to station the

546

00:18:14,710 --> 00:18:12,960

supplies they need

547

00:18:16,870 --> 00:18:14,720

because it'd be the last shuttle uh

548

00:18:19,110 --> 00:18:16,880

flight and uh leaving the best condition

549

00:18:21,590 --> 00:18:19,120

possible so you're gonna go up drop up

550

00:18:23,270 --> 00:18:21,600

drop off our stuff and and undock as

551
00:18:25,350 --> 00:18:23,280
soon as we could so that we didn't use

552
00:18:26,870 --> 00:18:25,360
any of their resources

553
00:18:29,110 --> 00:18:26,880
since then we are no longer the last

554
00:18:30,549 --> 00:18:29,120
flight the flight before us had

555
00:18:32,630 --> 00:18:30,559
some payload changes so they moved

556
00:18:34,390 --> 00:18:32,640
behind us and now at least in the

557
00:18:35,909 --> 00:18:34,400
authorization bill they've they've added

558
00:18:38,630 --> 00:18:35,919
that additional flight

559
00:18:40,310 --> 00:18:38,640
um so our objectives have changed um

560
00:18:42,549 --> 00:18:40,320
by the way going into this as an eight

561
00:18:44,310 --> 00:18:42,559
day mission i never thought we'd ever

562
00:18:46,070 --> 00:18:44,320
stay an eight day mission i always

563
00:18:49,830 --> 00:18:46,080

thought we would pick up a spacewalk or

564

00:18:52,390 --> 00:18:49,840

two because things change things break

565

00:18:54,150 --> 00:18:52,400

we have different objectives so the

566

00:18:56,789 --> 00:18:54,160

program's added in a couple of

567

00:18:58,789 --> 00:18:56,799

spacewalks to do some basically some

568

00:19:00,950 --> 00:18:58,799

some cleanup objectives some things what

569

00:19:02,950 --> 00:19:00,960

we call homeless tasks eva tests that

570

00:19:05,510 --> 00:19:02,960

need to get done but didn't have another

571

00:19:07,830 --> 00:19:05,520

place so we added those in

572

00:19:09,669 --> 00:19:07,840

returning a payload then

573

00:19:11,510 --> 00:19:09,679

recently when the when the space station

574

00:19:13,669 --> 00:19:11,520

had the uh the pump module failure and

575

00:19:15,830 --> 00:19:13,679

they had to do the replacement um we're

576

00:19:18,310 --> 00:19:15,840

doing some cleanup actions uh gonna vent

577

00:19:19,669 --> 00:19:18,320

that move it back into place and uh and

578

00:19:22,230 --> 00:19:19,679

get ready so that they can bring it home

579

00:19:24,310 --> 00:19:22,240

hopefully on a on a subsequent mission

580

00:19:25,110 --> 00:19:24,320

um so we're picking up all those tasks

581

00:19:26,870 --> 00:19:25,120

um

582

00:19:28,870 --> 00:19:26,880

it's been a challenge because we added

583

00:19:31,110 --> 00:19:28,880

those tasks fairly late in our in our in

584

00:19:33,510 --> 00:19:31,120

our evas the content changed very very

585

00:19:36,549 --> 00:19:33,520

late um but we were kind of prepared for

586

00:19:38,390 --> 00:19:36,559

that we had some um had some pool runs

587

00:19:39,909 --> 00:19:38,400

kind of held in reserve with

588

00:19:42,230 --> 00:19:39,919

that we knew we were going to do uh

589

00:19:43,830 --> 00:19:42,240

probably get new objectives

590

00:19:46,710 --> 00:19:43,840

tim and

591

00:19:49,110 --> 00:19:46,720

training i think they focused on more of

592

00:19:50,390 --> 00:19:49,120

a skills based approach early on so they

593

00:19:52,150 --> 00:19:50,400

could go and pick up those additional

594

00:19:53,510 --> 00:19:52,160

tasks we looked at they looked for

595

00:19:55,430 --> 00:19:53,520

example they looked at tasks they

596

00:19:56,870 --> 00:19:55,440

thought well this may come on our flight

597

00:19:58,310 --> 00:19:56,880

even though it's not and and so i think

598

00:19:59,750 --> 00:19:58,320

they're well prepared when those changes

599

00:20:01,430 --> 00:19:59,760

occurred so we've had a lot of robotics

600

00:20:03,110 --> 00:20:01,440

change a lot of eva changes but i think

601
00:20:04,470 --> 00:20:03,120
we've adapted to it pretty well and

602
00:20:05,909 --> 00:20:04,480
trained to it so that's part of the

603
00:20:07,270 --> 00:20:05,919
business you need to be able to react to

604
00:20:08,870 --> 00:20:07,280
changes you need to be able to react to

605
00:20:11,110 --> 00:20:08,880
failures just like the space station

606
00:20:13,270 --> 00:20:11,120
does and just like they did recently and

607
00:20:14,710 --> 00:20:13,280
so it's kind of how we've changed our

608
00:20:18,390 --> 00:20:14,720
approach over the years to be able to

609
00:20:22,870 --> 00:20:20,950
hi mark kirkman interspace news um first

610
00:20:24,789 --> 00:20:22,880
question uh for steve uh i understand

611
00:20:25,990 --> 00:20:24,799
you had i think your final entry sim

612
00:20:27,510 --> 00:20:26,000
this morning i was just wondering if you

613
00:20:29,029 --> 00:20:27,520

might be able to give uh kind of an

614

00:20:30,950 --> 00:20:29,039

insider's look at the horrors you faced

615

00:20:32,549 --> 00:20:30,960

this morning and what some of the

616

00:20:34,149 --> 00:20:32,559

remaining training uh requirements you

617

00:20:36,470 --> 00:20:34,159

have between now and heading to the cape

618

00:20:37,590 --> 00:20:36,480

and then a follow-up for ben ins insight

619

00:20:39,590 --> 00:20:37,600

on the the

620

00:20:41,510 --> 00:20:39,600

the training that's left yeah what major

621

00:20:42,870 --> 00:20:41,520

events you have oh and also what what

622

00:20:45,350 --> 00:20:42,880

you faced this morning what it was like

623

00:20:48,789 --> 00:20:45,360

to be in oh well we uh we did our uh to

624

00:20:51,190 --> 00:20:48,799

start off we did our last uh entry uh

625

00:20:52,070 --> 00:20:51,200

simulator this morning we did about four

626
00:20:52,950 --> 00:20:52,080
runs

627
00:20:54,950 --> 00:20:52,960
now

628
00:20:57,510 --> 00:20:54,960
we do various runs but these four we all

629
00:20:58,870 --> 00:20:57,520
started from 200 000 feet um so kind of

630
00:21:02,310 --> 00:20:58,880
about mach

631
00:21:04,310 --> 00:21:02,320
17 18 19 somewhere around there and

632
00:21:06,789 --> 00:21:04,320
you know they throw various failures at

633
00:21:08,390 --> 00:21:06,799
us computer failures uh reaction control

634
00:21:10,870 --> 00:21:08,400
system failures

635
00:21:13,270 --> 00:21:10,880
electrical failures you know they

636
00:21:14,390 --> 00:21:13,280
and it just forces us to work as a team

637
00:21:16,630 --> 00:21:14,400
with us in the ground to go through

638
00:21:18,549 --> 00:21:16,640

those and all those runs went great um

639

00:21:20,549 --> 00:21:18,559

and then the very last run

640

00:21:22,149 --> 00:21:20,559

well is probably was probably the most

641

00:21:23,350 --> 00:21:22,159

important run we took it down all the

642

00:21:24,789 --> 00:21:23,360

way to the ground then we did what's

643

00:21:27,510 --> 00:21:24,799

called post landing after we land the

644

00:21:29,350 --> 00:21:27,520

shuttle we go through about an hour of

645

00:21:31,669 --> 00:21:29,360

reconfiguration of the vehicle working

646

00:21:33,190 --> 00:21:31,679

with mission control to get the vehicle

647

00:21:34,549 --> 00:21:33,200

safe and configured so that we can

648

00:21:36,149 --> 00:21:34,559

actually exit the vehicle we actually

649

00:21:38,149 --> 00:21:36,159

went through all of those procedures to

650

00:21:40,149 --> 00:21:38,159

practice those once more time one more

651
00:21:41,430 --> 00:21:40,159
time as far as remaining training left

652
00:21:44,390 --> 00:21:41,440
we have some

653
00:21:47,110 --> 00:21:44,400
photo tv type training to go

654
00:21:49,350 --> 00:21:47,120
some review of some systems and computer

655
00:21:51,270 --> 00:21:49,360
systems and a few other things

656
00:21:54,149 --> 00:21:51,280
we have

657
00:21:56,149 --> 00:21:54,159
some medical tomorrow our launch minus

658
00:21:58,070 --> 00:21:56,159
10 day physicals and a few other things

659
00:22:00,310 --> 00:21:58,080
like that we'll go into quarantine on

660
00:22:02,789 --> 00:22:00,320
monday and we'll do a few more review

661
00:22:04,789 --> 00:22:02,799
classes we have one ascent sim left with

662
00:22:06,950 --> 00:22:04,799
our asset team

663
00:22:08,149 --> 00:22:06,960

and then after that we'll fly down to

664

00:22:09,510 --> 00:22:08,159

the cape and

665

00:22:11,029 --> 00:22:09,520

we'll be ready to go so there's very

666

00:22:12,630 --> 00:22:11,039

little training left

667

00:22:13,990 --> 00:22:12,640

mostly it's a lot of administrative

668

00:22:15,350 --> 00:22:14,000

things we're trying to you know

669

00:22:16,549 --> 00:22:15,360

personally prepare for going into

670

00:22:18,230 --> 00:22:16,559

quarantine and

671

00:22:20,710 --> 00:22:18,240

and leaving our families for you know

672

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

three plus weeks at least so um so

673

00:22:24,470 --> 00:22:22,400

that's kind of where we are now so we're

674

00:22:27,430 --> 00:22:24,480

we're well ready to go

675

00:22:29,430 --> 00:22:27,440

and then if i uh may a question for bim

676

00:22:31,590 --> 00:22:29,440

um i actually think i remember you as a

677

00:22:33,510 --> 00:22:31,600

cadet in cap and i was just wondering uh

678

00:22:36,070 --> 00:22:33,520

if you can maybe comment on what an

679

00:22:37,510 --> 00:22:36,080

organization like that might how it

680

00:22:39,110 --> 00:22:37,520

might influence someone to be able to do

681

00:22:40,390 --> 00:22:39,120

great things not that looking at you

682

00:22:42,230 --> 00:22:40,400

back then i thought you were a future

683

00:22:44,789 --> 00:22:42,240

shuttle pilot but

684

00:22:46,710 --> 00:22:44,799

so somewhere there might be one in ncap

685

00:22:48,230 --> 00:22:46,720

today but so you're asking about cp

686

00:22:49,510 --> 00:22:48,240

which is a civil war pro for everyone

687

00:22:51,270 --> 00:22:49,520

else that's out there and it's a

688

00:22:52,630 --> 00:22:51,280

auxiliary of the air force

689

00:22:56,630 --> 00:22:52,640

and

690

00:22:58,630 --> 00:22:56,640

involved in the cadet program very

691

00:23:01,510 --> 00:22:58,640

heavily i'm still still a member but

692

00:23:03,510 --> 00:23:01,520

what i enjoyed about as a cadet

693

00:23:05,830 --> 00:23:03,520

for me i was very interested in aviation

694

00:23:08,390 --> 00:23:05,840

so there's an opportunity to

695

00:23:10,149 --> 00:23:08,400

one they gave me the opportunity to

696

00:23:11,590 --> 00:23:10,159

obtain my solo license gave me all the

697

00:23:14,310 --> 00:23:11,600

flights and the training necessary to go

698

00:23:15,830 --> 00:23:14,320

do that we did i was from georgia we did

699

00:23:17,350 --> 00:23:15,840

a lot of search and rescue

700

00:23:19,430 --> 00:23:17,360

and so it was a lot of these things a

701

00:23:22,230 --> 00:23:19,440

lot of the teamwork a lot of the flying

702

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

aviation skills and also just my passion

703

00:23:25,750 --> 00:23:24,000

for aviation kind of got

704

00:23:27,590 --> 00:23:25,760

fostered in civil patrol so to me it was

705

00:23:28,870 --> 00:23:27,600

a great program as a kid to get involved

706

00:23:33,430 --> 00:23:28,880

with and learn a lot of different things

707

00:23:37,270 --> 00:23:35,510

jim oberg with nbc a quick question to

708

00:23:39,430 --> 00:23:37,280

make sure that uh have you all found

709

00:23:40,870 --> 00:23:39,440

time to vote

710

00:23:42,710 --> 00:23:40,880

oh yes

711

00:23:44,310 --> 00:23:42,720

we're all early voting so

712

00:23:46,390 --> 00:23:44,320

i voted yesterday morning it was a short

713

00:23:48,230 --> 00:23:46,400

line so

714

00:23:50,390 --> 00:23:48,240

it's probably gonna get longer and a

715

00:23:52,390 --> 00:23:50,400

more serious question about last things

716

00:23:54,470 --> 00:23:52,400

is that uh you know the flight crews

717

00:23:56,549 --> 00:23:54,480

always encourage the the the ground

718

00:23:58,390 --> 00:23:56,559

support groups teams their trainers

719

00:23:59,990 --> 00:23:58,400

operators and you're always you're

720

00:24:01,669 --> 00:24:00,000

always deeply involved and encouraging

721

00:24:03,029 --> 00:24:01,679

these people you're facing a double

722

00:24:04,710 --> 00:24:03,039

challenge now that many of the people

723

00:24:06,549 --> 00:24:04,720

you're working with now probably won't

724

00:24:07,990 --> 00:24:06,559

be here six or twelve months from now

725

00:24:11,269 --> 00:24:08,000

what kind of special things are you

726

00:24:13,029 --> 00:24:11,279

doing to encourage people who are

727

00:24:15,110 --> 00:24:13,039

without any fault of their own

728

00:24:16,710 --> 00:24:15,120

approaching the end of their space

729

00:24:17,990 --> 00:24:16,720

of their nasa careers how are you

730

00:24:20,470 --> 00:24:18,000

helping them

731

00:24:22,310 --> 00:24:20,480

keep up their spirits

732

00:24:24,789 --> 00:24:22,320

that sounds like a difficult question i

733

00:24:26,390 --> 00:24:24,799

guess i'll try to try to answer that

734

00:24:28,230 --> 00:24:26,400

yeah it is is it difficult you know we

735

00:24:30,230 --> 00:24:28,240

were down at kennedy space center last

736

00:24:32,789 --> 00:24:30,240

week and it was about a week or so maybe

737

00:24:34,789 --> 00:24:32,799

a week and a half after they took 1000

738

00:24:37,430 --> 00:24:34,799

plus layoffs we took 300 and something

739

00:24:39,669 --> 00:24:37,440

here i think and and more to come and

740

00:24:41,830 --> 00:24:39,679

it's a very difficult time the thing we

741

00:24:43,350 --> 00:24:41,840

noticed with with all the people working

742

00:24:45,029 --> 00:24:43,360

with all the teams working with is even

743

00:24:47,430 --> 00:24:45,039

with those layoffs everybody's very

744

00:24:50,149 --> 00:24:47,440

motivated to see this program through

745

00:24:51,350 --> 00:24:50,159

and see it through successfully um

746

00:24:54,230 --> 00:24:51,360

eric and i were actually talking about

747

00:24:56,390 --> 00:24:54,240

this yesterday a little bit um that uh

748

00:24:57,990 --> 00:24:56,400

you know it's really interesting that

749

00:25:00,070 --> 00:24:58,000

that you're

750

00:25:01,669 --> 00:25:00,080

you know you come here and you realize

751
00:25:04,390 --> 00:25:01,679
after you've been here for just a short

752
00:25:05,590 --> 00:25:04,400
time that the workforce here and the

753
00:25:07,190 --> 00:25:05,600
other centers

754
00:25:09,029 --> 00:25:07,200
is very special because these people

755
00:25:10,470 --> 00:25:09,039
aren't here because they're getting paid

756
00:25:12,230 --> 00:25:10,480
more than you would in any other

757
00:25:13,990 --> 00:25:12,240
organization matter of fact

758
00:25:15,350 --> 00:25:14,000
probably particularly in houston you

759
00:25:17,269 --> 00:25:15,360
know for an engineer you're getting paid

760
00:25:19,510 --> 00:25:17,279
less to work here but people are doing

761
00:25:21,190 --> 00:25:19,520
this because they love it so to watch

762
00:25:22,630 --> 00:25:21,200
program winding down and watch people

763
00:25:24,549 --> 00:25:22,640

losing their jobs is tough but they're

764

00:25:27,430 --> 00:25:24,559

all very motivated to do do the right

765

00:25:29,510 --> 00:25:27,440

thing so from our part what we do is we

766

00:25:31,029 --> 00:25:29,520

do our best to continue encouraging

767

00:25:32,470 --> 00:25:31,039

those folks thanking those folks for

768

00:25:35,669 --> 00:25:32,480

what they do participating in their

769

00:25:37,590 --> 00:25:35,679

events wherever we can whenever we can

770

00:25:38,870 --> 00:25:37,600

and trying to encourage them and you

771

00:25:40,149 --> 00:25:38,880

know one thing that i've i've told

772

00:25:42,310 --> 00:25:40,159

several groups

773

00:25:43,350 --> 00:25:42,320

that you know reaching the end i said

774

00:25:44,870 --> 00:25:43,360

you know it's

775

00:25:46,549 --> 00:25:44,880

and it's it's true for us too because

776

00:25:48,789 --> 00:25:46,559

when the shuttle programs goes away we

777

00:25:50,549 --> 00:25:48,799

won't be a part of it either and and our

778

00:25:52,230 --> 00:25:50,559

own office is shrinking as well to go

779

00:25:53,430 --> 00:25:52,240

with it so it's it's kind of sort of

780

00:25:56,149 --> 00:25:53,440

happening

781

00:25:58,149 --> 00:25:56,159

to all organizations but you know one

782

00:26:00,390 --> 00:25:58,159

thing that that i that i like to tell

783

00:26:02,470 --> 00:26:00,400

folks is that you know you're part of a

784

00:26:04,230 --> 00:26:02,480

very special team one that you probably

785

00:26:05,990 --> 00:26:04,240

won't ever see again i mean there may be

786

00:26:07,029 --> 00:26:06,000

a team for the new vehicle whatever that

787

00:26:08,470 --> 00:26:07,039

is

788

00:26:11,269 --> 00:26:08,480

and it'll be a good team but it won't be

789

00:26:12,789 --> 00:26:11,279

this team and uh and if nothing else you

790

00:26:14,390 --> 00:26:12,799

know you can look back i think with a

791

00:26:16,230 --> 00:26:14,400

lot of pride on what we've done over the

792

00:26:17,990 --> 00:26:16,240

years with this space shuttle program

793

00:26:19,430 --> 00:26:18,000

and building the space station and the

794

00:26:21,110 --> 00:26:19,440

mirror and all the satellites we did

795

00:26:22,950 --> 00:26:21,120

before that and and all the things we

796

00:26:24,549 --> 00:26:22,960

did with the space shuttle and so

797

00:26:26,390 --> 00:26:24,559

we we like i said we do our best to

798

00:26:28,789 --> 00:26:26,400

encourage people now that doesn't give

799

00:26:30,630 --> 00:26:28,799

them a paycheck and there's not much we

800

00:26:32,230 --> 00:26:30,640

can do about that but uh try to

801
00:26:34,630 --> 00:26:32,240
encourage folks and

802
00:26:37,510 --> 00:26:34,640
and help folks where we can is about

803
00:26:39,590 --> 00:26:37,520
about all we can do so

804
00:26:41,830 --> 00:26:39,600
i believe we have someone haley kappas

805
00:26:44,149 --> 00:26:41,840
with the galveston county daily news al

806
00:26:45,430 --> 00:26:44,159
can you tell me what it's like going

807
00:26:46,950 --> 00:26:45,440
where or what your thoughts are going

808
00:26:48,549 --> 00:26:46,960
into your first spacewalk and kind of

809
00:26:50,149 --> 00:26:48,559
give a picture of what training has been

810
00:26:50,870 --> 00:26:50,159
like for that

811
00:27:01,430 --> 00:26:50,880
i

812
00:27:02,310 --> 00:27:01,440
spacewalks

813
00:27:03,269 --> 00:27:02,320

but

814

00:27:04,950 --> 00:27:03,279

we're never sure that we're going to

815

00:27:06,630 --> 00:27:04,960

have one so when the opportunity arose

816

00:27:08,390 --> 00:27:06,640

to pick up some of these

817

00:27:10,710 --> 00:27:08,400

homeless tasks along with the cleanup

818

00:27:12,789 --> 00:27:10,720

from the the pump module failure

819

00:27:15,269 --> 00:27:12,799

it was uh it was a great opportunity to

820

00:27:17,350 --> 00:27:15,279

go out and help out the program and of

821

00:27:18,950 --> 00:27:17,360

course get a go outside and look at the

822

00:27:21,350 --> 00:27:18,960

universe and outside of a vehicle for a

823

00:27:22,630 --> 00:27:21,360

bit uh having said that i think the

824

00:27:23,430 --> 00:27:22,640

bigger part is

825

00:27:24,389 --> 00:27:23,440

is

826

00:27:26,549 --> 00:27:24,399

feel like you can make a big

827

00:27:28,310 --> 00:27:26,559

contribution to to the program itself

828

00:27:29,990 --> 00:27:28,320

other things out there that we can do

829

00:27:31,269 --> 00:27:30,000

we've got special training to go do and

830

00:27:32,870 --> 00:27:31,279

it's going to keep the space station

831

00:27:35,430 --> 00:27:32,880

alive longer and we're trying to extend

832

00:27:37,590 --> 00:27:35,440

it beyond its original intended lifespan

833

00:27:39,430 --> 00:27:37,600

and to hopefully some back look back in

834

00:27:41,269 --> 00:27:39,440

2020 and see it out there working and i

835

00:27:43,510 --> 00:27:41,279

think i had a small part in

836

00:27:48,149 --> 00:27:43,520

keeping it going that long i think will

837

00:27:52,549 --> 00:27:50,149

fieble houston public radio and also on

838

00:27:54,789 --> 00:27:52,559

behalf of austin public radio um mr

839

00:27:56,470 --> 00:27:54,799

copra i wanted to you know as someone

840

00:27:58,310 --> 00:27:56,480

who's from austin i think a lot of

841

00:28:00,630 --> 00:27:58,320

texans are going to be keeping a special

842

00:28:01,909 --> 00:28:00,640

eye on you and i wanted to find out from

843

00:28:03,350 --> 00:28:01,919

you a little more what your feelings are

844

00:28:06,149 --> 00:28:03,360

about being one of the last few people

845

00:28:08,149 --> 00:28:06,159

to be on a shuttle mission and also

846

00:28:10,070 --> 00:28:08,159

what would you say to students who you

847

00:28:11,669 --> 00:28:10,080

know during this time of transition and

848

00:28:13,510 --> 00:28:11,679

all the programs who still want to be an

849

00:28:15,350 --> 00:28:13,520

astronaut who still might want to be an

850

00:28:18,149 --> 00:28:15,360

aerospace engineer what would you tell

851

00:28:19,909 --> 00:28:18,159

them sure well i think like all my my

852

00:28:22,070 --> 00:28:19,919

crewmates here we're we all feel very

853

00:28:24,310 --> 00:28:22,080

privileged to be part of this mission

854

00:28:25,909 --> 00:28:24,320

and uh we also feel like we have a lot

855

00:28:28,149 --> 00:28:25,919

of responsibility to do the best that we

856

00:28:30,789 --> 00:28:28,159

can to put space station the best

857

00:28:31,830 --> 00:28:30,799

possible condition before we leave so

858

00:28:33,909 --> 00:28:31,840

we're both

859

00:28:35,190 --> 00:28:33,919

very privileged but also

860

00:28:36,950 --> 00:28:35,200

you know we feel the

861

00:28:39,029 --> 00:28:36,960

the responsibility to do the right thing

862

00:28:40,870 --> 00:28:39,039

and and work hard and do a good job for

863

00:28:42,870 --> 00:28:40,880

everything that's playing on the mission

864

00:28:44,230 --> 00:28:42,880

in terms of

865

00:28:45,269 --> 00:28:44,240

you know what young people think in

866

00:28:47,669 --> 00:28:45,279

terms of

867

00:28:50,070 --> 00:28:47,679

uh their aspirations to do

868

00:28:51,510 --> 00:28:50,080

big things like be an astronaut or some

869

00:28:53,669 --> 00:28:51,520

other large goal

870

00:28:55,110 --> 00:28:53,679

i would say that uh the primary thing

871

00:28:55,909 --> 00:28:55,120

that any young person needs to think

872

00:28:58,389 --> 00:28:55,919

about

873

00:29:01,029 --> 00:28:58,399

is is their big goal and working towards

874

00:29:02,710 --> 00:29:01,039

that and um in large measure it's not so

875

00:29:04,470 --> 00:29:02,720

much the goal because i feel very

876

00:29:07,029 --> 00:29:04,480

fortunate like like all the folks in our

877

00:29:09,029 --> 00:29:07,039

office to have this job but but i think

878

00:29:11,350 --> 00:29:09,039

one thing i've learned along the way is

879

00:29:13,269 --> 00:29:11,360

the path is as important if not more

880

00:29:16,389 --> 00:29:13,279

important than the goal itself

881

00:29:19,269 --> 00:29:16,399

so um anytime young people work hard in

882

00:29:21,590 --> 00:29:19,279

academics or their ex quicker activities

883

00:29:23,190 --> 00:29:21,600

and they excel i think it just increases

884

00:29:24,470 --> 00:29:23,200

their possibilities in the future and

885

00:29:28,149 --> 00:29:24,480

they should just continue to work hard

886

00:29:31,029 --> 00:29:29,669

okay with that i think we'll switch over

887

00:29:35,269 --> 00:29:31,039

to kennedy space center where we have a

888

00:29:40,070 --> 00:29:38,149

uh yes hi marcia dunn associated press

889

00:29:43,590 --> 00:29:40,080

um we just heard from the robonaut

890

00:29:45,430 --> 00:29:43,600

briefier that he spent 20 years uh going

891

00:29:47,350 --> 00:29:45,440

around asking people what they would do

892

00:29:49,510 --> 00:29:47,360

with a robot if they had one so my

893

00:29:51,269 --> 00:29:49,520

question for the free three former space

894

00:29:53,269 --> 00:29:51,279

station residents is

895

00:29:55,430 --> 00:29:53,279

if you had had a robot aboard the space

896

00:29:57,990 --> 00:29:55,440

station with you what would you

897

00:30:00,710 --> 00:29:58,000

have had him or her or it do

898

00:30:04,230 --> 00:30:00,720

and how do you see robonaut as easing

899

00:30:05,990 --> 00:30:04,240

the burden for future crews

900

00:30:08,070 --> 00:30:06,000

all right marcia

901
00:30:09,909 --> 00:30:08,080
that's a really good question and i

902
00:30:11,590 --> 00:30:09,919
think we see robonaut as the program

903
00:30:13,590 --> 00:30:11,600
does is very much a technology

904
00:30:16,549 --> 00:30:13,600
demonstrator it's the first time we've

905
00:30:19,510 --> 00:30:16,559
had a humanoid shaped robot for space

906
00:30:21,750 --> 00:30:19,520
flight and that conjures up all sorts of

907
00:30:23,669 --> 00:30:21,760
uses and things well beyond what we've

908
00:30:24,950 --> 00:30:23,679
got envisioned for it quite yet so i

909
00:30:27,669 --> 00:30:24,960
think that's the important thing is that

910
00:30:29,350 --> 00:30:27,679
this is a very much uh first step

911
00:30:31,750 --> 00:30:29,360
and we will be identifying some

912
00:30:33,750 --> 00:30:31,760
breadboard tasks over the next few years

913
00:30:35,750 --> 00:30:33,760

to figure out how best to use a humanoid

914

00:30:38,070 --> 00:30:35,760

robot in space when you look at some of

915

00:30:40,389 --> 00:30:38,080

the tasks that we're asked to do

916

00:30:42,389 --> 00:30:40,399

and what a robot could do

917

00:30:44,149 --> 00:30:42,399

you're thinking of things that would be

918

00:30:46,070 --> 00:30:44,159

perhaps dangerous for a human to do or

919

00:30:47,990 --> 00:30:46,080

repetitive tasks that would wear a human

920

00:30:50,070 --> 00:30:48,000

out so if you were to go around the

921

00:30:51,750 --> 00:30:50,080

station for instance and identify

922

00:30:52,789 --> 00:30:51,760

scenarios where it was risky to send a

923

00:30:55,110 --> 00:30:52,799

human in

924

00:30:57,430 --> 00:30:55,120

whether you had a suspected fire or a

925

00:30:59,669 --> 00:30:57,440

toxic release and what you needed was a

926
00:31:01,590 --> 00:30:59,679
switch throw or to discharge a fire

927
00:31:02,950 --> 00:31:01,600
extinguisher into the right fire port

928
00:31:04,870 --> 00:31:02,960
that's the kind of thing we could

929
00:31:06,710 --> 00:31:04,880
eventually envision sending robonaut in

930
00:31:08,310 --> 00:31:06,720
to do a couple of those scenarios i'd

931
00:31:10,789 --> 00:31:08,320
much rather send a robot in and go in

932
00:31:12,870 --> 00:31:10,799
myself on a gas mask but again we're

933
00:31:15,350 --> 00:31:12,880
very early and we'll be mapping those

934
00:31:16,789 --> 00:31:15,360
tasks to the capabilities that robonaut

935
00:31:18,710 --> 00:31:16,799
demonstrates over the years and it will

936
00:31:23,190 --> 00:31:18,720
be years before we figure all this out

937
00:31:27,110 --> 00:31:25,110
uh thank you and if you had to have

938
00:31:29,029 --> 00:31:27,120

unloaded one of the more unpleasant

939

00:31:34,149 --> 00:31:29,039

mundane tasks while you were up there

940

00:31:36,630 --> 00:31:35,830

nothing that robonaut

941

00:31:38,630 --> 00:31:36,640

yeah

942

00:31:41,909 --> 00:31:38,640

nothing the robonaut has the dexterity

943

00:31:43,830 --> 00:31:41,919

for at this point we can put it that way

944

00:31:46,389 --> 00:31:43,840

it's funny though up there nothing

945

00:31:48,950 --> 00:31:46,399

i think i get your picture um and i have

946

00:31:51,190 --> 00:31:48,960

a question for a colonel drew i'm i'm

947

00:31:52,789 --> 00:31:51,200

just wondering if being an astronaut was

948

00:31:54,310 --> 00:31:52,799

something you've aspired to throughout

949

00:31:56,710 --> 00:31:54,320

your air force career whether it was

950

00:31:57,990 --> 00:31:56,720

there with you from boyhood

951
00:32:00,070 --> 00:31:58,000
and um

952
00:32:02,149 --> 00:32:00,080
how how you've gotten to this place in

953
00:32:03,430 --> 00:32:02,159
time now today

954
00:32:04,789 --> 00:32:03,440
i didn't really aspire to become an

955
00:32:07,830 --> 00:32:04,799
astronaut until i was at least five and

956
00:32:11,509 --> 00:32:09,269
by that time i gave up my dream of being

957
00:32:13,269 --> 00:32:11,519
a pilot inside to go pursue that

958
00:32:14,950 --> 00:32:13,279
it was i was watching the apollo program

959
00:32:16,950 --> 00:32:14,960
back then and thought that was something

960
00:32:19,190 --> 00:32:16,960
that looked like it was more like fun

961
00:32:21,110 --> 00:32:19,200
than work i've since learned otherwise

962
00:32:22,789 --> 00:32:21,120
um it's still fun but it's still a lot

963
00:32:24,230 --> 00:32:22,799

of work um

964

00:32:25,509 --> 00:32:24,240

it was one of the things that was in the

965

00:32:26,870 --> 00:32:25,519

back of my mind during my air force

966

00:32:28,789 --> 00:32:26,880

career but nothing i really took that

967

00:32:29,830 --> 00:32:28,799

seriously i think depending betting your

968

00:32:30,950 --> 00:32:29,840

career on becoming an astronaut it's

969

00:32:32,389 --> 00:32:30,960

like

970

00:32:34,389 --> 00:32:32,399

planning your pension around winning a

971

00:32:36,230 --> 00:32:34,399

lottery and it's a it's something you

972

00:32:38,950 --> 00:32:36,240

can go pursue but be sure to have a plan

973

00:32:41,110 --> 00:32:38,960

b in place so i did everything to make

974

00:32:42,870 --> 00:32:41,120

those make it to stack the deck in my

975

00:32:48,389 --> 00:32:42,880

favor but no never really expected it

976

00:32:53,110 --> 00:32:50,789

hi it's james dane from florida today

977

00:32:54,789 --> 00:32:53,120

and uh similar to marcia's question

978

00:32:57,430 --> 00:32:54,799

about robonaut 2 i wanted to ask the

979

00:32:59,269 --> 00:32:57,440

same for for those of you who've had

980

00:33:01,430 --> 00:32:59,279

experience on station about how how the

981

00:33:02,470 --> 00:33:01,440

addition of the pmm um might have been

982

00:33:04,630 --> 00:33:02,480

welcome

983

00:33:07,750 --> 00:33:04,640

just adding that closet as it's being

984

00:33:10,149 --> 00:33:07,760

called or extra storage space

985

00:33:11,430 --> 00:33:10,159

i think it's going to be um i think it's

986

00:33:13,669 --> 00:33:11,440

going to be a really outstanding

987

00:33:15,590 --> 00:33:13,679

addition to the station i think anybody

988

00:33:18,789 --> 00:33:15,600

that's that's lived and worked up there

989

00:33:19,669 --> 00:33:18,799

has at one time or another or many times

990

00:33:21,430 --> 00:33:19,679

um

991

00:33:23,110 --> 00:33:21,440

felt like wow if we just had a closet

992

00:33:25,669 --> 00:33:23,120

where we could stick this or we just had

993

00:33:27,190 --> 00:33:25,679

you know designated storage for these

994

00:33:28,310 --> 00:33:27,200

particular items it would be such a

995

00:33:29,830 --> 00:33:28,320

great thing

996

00:33:31,350 --> 00:33:29,840

and i think what it's going to do is

997

00:33:32,470 --> 00:33:31,360

it's going to it's going to provide that

998

00:33:33,990 --> 00:33:32,480

but it's also going to give us the

999

00:33:35,509 --> 00:33:34,000

opportunity to

1000

00:33:37,029 --> 00:33:35,519

go through station and look at where we

1001

00:33:38,870 --> 00:33:37,039

have stuff and maybe

1002

00:33:40,950 --> 00:33:38,880

better distribute so that we make even

1003

00:33:42,230 --> 00:33:40,960

more space available so i think it's i

1004

00:33:46,870 --> 00:33:42,240

think it's going to be a really really

1005

00:33:50,710 --> 00:33:48,470

thanks nicole if i could stick with you

1006

00:33:52,630 --> 00:33:50,720

for a moment um we've been trying to

1007

00:33:54,470 --> 00:33:52,640

occasionally follow discovery's

1008

00:33:55,990 --> 00:33:54,480

processing flow as it's getting ready

1009

00:33:57,590 --> 00:33:56,000

for a final flight

1010

00:33:58,950 --> 00:33:57,600

as someone who's intimately familiar

1011

00:34:00,870 --> 00:33:58,960

with that process just wondered if you

1012

00:34:02,230 --> 00:34:00,880

could speak a little bit to

1013

00:34:03,430 --> 00:34:02,240

what it takes to and you guys have

1014

00:34:05,669 --> 00:34:03,440

talked about the thousands of people

1015

00:34:06,389 --> 00:34:05,679

involved what it takes to turn around a

1016

00:34:07,750 --> 00:34:06,399

vehicle

1017

00:34:09,750 --> 00:34:07,760

for flight and

1018

00:34:11,829 --> 00:34:09,760

to the extent you've been able to follow

1019

00:34:14,950 --> 00:34:11,839

it closely if there's anything unique

1020

00:34:16,470 --> 00:34:14,960

that you've seen during discoveries flow

1021

00:34:18,470 --> 00:34:16,480

well i think

1022

00:34:20,869 --> 00:34:18,480

as it goes for any vehicle down there

1023

00:34:22,790 --> 00:34:20,879

it's it's a complex thing and you move

1024

00:34:25,030 --> 00:34:22,800

from the runway back to the orbiter

1025

00:34:26,710 --> 00:34:25,040

processing facility with the orbiter

1026

00:34:28,790 --> 00:34:26,720

itself and then in parallel with that

1027

00:34:30,950 --> 00:34:28,800

you've got all this work that's going on

1028

00:34:32,470 --> 00:34:30,960

um and preparing the boosters and the

1029

00:34:34,629 --> 00:34:32,480

external tank and then ultimately

1030

00:34:36,230 --> 00:34:34,639

bringing it all together but

1031

00:34:38,550 --> 00:34:36,240

i think we always have to go back to the

1032

00:34:40,069 --> 00:34:38,560

people on this because

1033

00:34:41,510 --> 00:34:40,079

when i worked there and now when i get

1034

00:34:43,829 --> 00:34:41,520

the chance to go back it is so

1035

00:34:46,149 --> 00:34:43,839

impressive to me to see how

1036

00:34:49,030 --> 00:34:46,159

just cleanly it all does come together

1037

00:34:51,270 --> 00:34:49,040

for as complex as it is and you can take

1038

00:34:53,349 --> 00:34:51,280

just one little part that's in the aft

1039

00:34:56,069 --> 00:34:53,359

part of the the orbiter and look at the

1040

00:34:58,310 --> 00:34:56,079

complexity of that and see how nicely it

1041

00:35:00,550 --> 00:34:58,320

comes together and then look at these

1042

00:35:03,030 --> 00:35:00,560

you know these four big pieces the the

1043

00:35:04,870 --> 00:35:03,040

shuttle and the two boosters in the tank

1044

00:35:07,030 --> 00:35:04,880

sitting so beautifully together at the

1045

00:35:08,790 --> 00:35:07,040

end and ready to launch and

1046

00:35:11,109 --> 00:35:08,800

uh it's it's really an interesting

1047

00:35:11,990 --> 00:35:11,119

process and it all comes down to

1048

00:35:13,430 --> 00:35:12,000

um

1049

00:35:15,990 --> 00:35:13,440

to the people that are there that know

1050

00:35:17,430 --> 00:35:16,000

how to do it and have

1051
00:35:19,430 --> 00:35:17,440
have like these guys have said a real

1052
00:35:20,710 --> 00:35:19,440
passion for making it happen

1053
00:35:22,310 --> 00:35:20,720
and uh

1054
00:35:24,150 --> 00:35:22,320
as far as anything unique and what

1055
00:35:25,910 --> 00:35:24,160
what's going on i i don't know that

1056
00:35:28,710 --> 00:35:25,920
there really is anything this this time

1057
00:35:30,310 --> 00:35:28,720
um to point out i think for us it's it's

1058
00:35:32,790 --> 00:35:30,320
just always a real pleasure to go down

1059
00:35:33,510 --> 00:35:32,800
there and see the milestones the kind of

1060
00:35:41,750 --> 00:35:33,520
the

1061
00:35:43,109 --> 00:35:41,760
tcdt or for our kind of our practice

1062
00:35:44,470 --> 00:35:43,119
count it was

1063
00:35:45,829 --> 00:35:44,480

it's another one of those impressive

1064

00:35:47,510 --> 00:35:45,839

times where you stand at the base of

1065

00:35:49,829 --> 00:35:47,520

that pad and you look up at this this

1066

00:35:51,990 --> 00:35:49,839

beautiful vehicle and you just

1067

00:35:53,270 --> 00:35:52,000

give a big thanks to the people and

1068

00:35:54,470 --> 00:35:53,280

are just really happy to know that

1069

00:35:56,470 --> 00:35:54,480

you're going to be strapping in there in

1070

00:35:57,349 --> 00:35:56,480

a couple weeks and uh getting to launch

1071

00:36:04,630 --> 00:35:57,359

so

1072

00:36:06,150 --> 00:36:04,640

just a couple of final questions for

1073

00:36:07,750 --> 00:36:06,160

commander lindsay

1074

00:36:09,910 --> 00:36:07,760

um

1075

00:36:12,790 --> 00:36:09,920

i recognizing there there may be a an

1076

00:36:13,990 --> 00:36:12,800

additional shuttle flight added but

1077

00:36:16,790 --> 00:36:14,000

knowing that there's only two remaining

1078

00:36:18,630 --> 00:36:16,800

now i just wondered if um was it in fact

1079

00:36:20,870 --> 00:36:18,640

kind of a relief to you

1080

00:36:22,230 --> 00:36:20,880

as the leader of the mission when

1081

00:36:24,230 --> 00:36:22,240

this mission

1082

00:36:26,710 --> 00:36:24,240

became no longer the last shuttle flight

1083

00:36:29,190 --> 00:36:26,720

in terms of just knowing all the

1084

00:36:31,109 --> 00:36:29,200

uh you know added attention and stress

1085

00:36:32,550 --> 00:36:31,119

that might add to uh getting ready for a

1086

00:36:34,790 --> 00:36:32,560

flight and now another crew is gonna

1087

00:36:36,470 --> 00:36:34,800

have to deal with that

1088

00:36:38,230 --> 00:36:36,480

um

1089

00:36:42,790 --> 00:36:38,240

gosh i never really thought of it as a

1090

00:36:44,630 --> 00:36:42,800

burden uh honestly uh you know the uh

1091

00:36:47,270 --> 00:36:44,640

my feelings on you know where we flew in

1092

00:36:48,790 --> 00:36:47,280

the where we are in the manifest is uh

1093

00:36:50,550 --> 00:36:48,800

you know i was it was originally

1094

00:36:53,270 --> 00:36:50,560

selected to be the last last crew for

1095

00:36:54,790 --> 00:36:53,280

the last flight when it moved um it's

1096

00:36:56,150 --> 00:36:54,800

it's never been about us it's always

1097

00:36:57,349 --> 00:36:56,160

been about the program what's right for

1098

00:36:59,589 --> 00:36:57,359

the space station what's right for the

1099

00:37:00,790 --> 00:36:59,599

space shuttle program so we moved out of

1100

00:37:02,630 --> 00:37:00,800

that position

1101
00:37:04,710 --> 00:37:02,640
you know we're happy to serve wherever

1102
00:37:07,349 --> 00:37:04,720
uh we can best serve the the programs

1103
00:37:08,950 --> 00:37:07,359
and and get the objectives done so um it

1104
00:37:10,390 --> 00:37:08,960
wasn't you know whether that was the

1105
00:37:12,150 --> 00:37:10,400
last flight or not the last flight i

1106
00:37:13,109 --> 00:37:12,160
didn't really feel honestly when we were

1107
00:37:14,550 --> 00:37:13,119
the last flight i didn't feel any

1108
00:37:16,069 --> 00:37:14,560
additional pressure associated with that

1109
00:37:19,109 --> 00:37:16,079
maybe i should have but i but i really

1110
00:37:21,670 --> 00:37:19,119
didn't so uh so it's kind of a wash for

1111
00:37:23,430 --> 00:37:21,680
us i think but we're happy to be flying

1112
00:37:25,910 --> 00:37:23,440
together we're happy with our objectives

1113
00:37:28,390 --> 00:37:25,920

looking forward to the mission and so um

1114

00:37:30,470 --> 00:37:28,400

personally um i'm really excited to be

1115

00:37:33,670 --> 00:37:30,480

flying with this crew i love all these

1116

00:37:36,069 --> 00:37:33,680

guys and girls and uh and they they're

1117

00:37:37,589 --> 00:37:36,079

fantastic group of people to fly with

1118

00:37:39,589 --> 00:37:37,599

somebody once told me when i first came

1119

00:37:41,430 --> 00:37:39,599

into the office

1120

00:37:43,510 --> 00:37:41,440

it's uh you'll find as you get more

1121

00:37:45,109 --> 00:37:43,520

experience it's less about what you do

1122

00:37:46,470 --> 00:37:45,119

on a mission and it's more about who you

1123

00:37:50,870 --> 00:37:46,480

get to fly it with and i think that's

1124

00:37:54,870 --> 00:37:52,630

great and uh

1125

00:37:57,349 --> 00:37:54,880

you mentioned earlier that the astronaut

1126

00:38:00,150 --> 00:37:57,359

core like like other parts of the

1127

00:38:02,069 --> 00:38:00,160

the the the program the agency are is

1128

00:38:03,430 --> 00:38:02,079

shrinking a bit um as the program nears

1129

00:38:05,430 --> 00:38:03,440

an end

1130

00:38:06,470 --> 00:38:05,440

being a former head of the office can

1131

00:38:08,150 --> 00:38:06,480

you tell us

1132

00:38:09,829 --> 00:38:08,160

what the core is going to look like

1133

00:38:11,589 --> 00:38:09,839

after shuttle flyout is complete in

1134

00:38:13,670 --> 00:38:11,599

terms of numbers and how you move

1135

00:38:16,390 --> 00:38:13,680

forward well i can i can tell you what

1136

00:38:18,550 --> 00:38:16,400

we do to size the office the office has

1137

00:38:20,390 --> 00:38:18,560

always been sized based on uh the

1138

00:38:22,470 --> 00:38:20,400

manifest requirements in other words who

1139

00:38:25,829 --> 00:38:22,480

we need to fly when how often we need to

1140

00:38:27,430 --> 00:38:25,839

fly um so we were always sized for you

1141

00:38:29,030 --> 00:38:27,440

know shuttle and station and then when

1142

00:38:30,630 --> 00:38:29,040

station went to six crew we needed a

1143

00:38:32,790 --> 00:38:30,640

bigger bigger crew

1144

00:38:34,470 --> 00:38:32,800

to support that and so we so we plan the

1145

00:38:35,829 --> 00:38:34,480

sizing to support the manifest plus a

1146

00:38:37,430 --> 00:38:35,839

pad to deal with

1147

00:38:38,870 --> 00:38:37,440

um you know somebody who maybe doesn't

1148

00:38:41,430 --> 00:38:38,880

get trained all the way in a certain

1149

00:38:44,230 --> 00:38:41,440

system like you know spacewalking or

1150

00:38:46,150 --> 00:38:44,240

robotics or and we also plan to deal

1151
00:38:48,870 --> 00:38:46,160
with unexpected medical conditions and

1152
00:38:52,069 --> 00:38:48,880
so that's how we size the office

1153
00:38:55,109 --> 00:38:52,079
we did size the office for

1154
00:38:57,430 --> 00:38:55,119
shuttle landing and um and space station

1155
00:38:58,870 --> 00:38:57,440
at six person crew and then the addition

1156
00:39:00,790 --> 00:38:58,880
of the constellation program when that

1157
00:39:02,069 --> 00:39:00,800
was come and and so we planned our

1158
00:39:03,990 --> 00:39:02,079
sizing for that

1159
00:39:05,589 --> 00:39:04,000
so i think the sizing of the future

1160
00:39:08,390 --> 00:39:05,599
really depends on what the program looks

1161
00:39:11,829 --> 00:39:08,400
like um not not the iss program but the

1162
00:39:13,190 --> 00:39:11,839
uh but the follow-on um you know next

1163
00:39:15,270 --> 00:39:13,200

vehicle program

1164

00:39:16,630 --> 00:39:15,280

and so we'll know that right now that

1165

00:39:18,630 --> 00:39:16,640

they're looking at the sizing and

1166

00:39:20,550 --> 00:39:18,640

they'll and they'll they'll calculate

1167

00:39:22,230 --> 00:39:20,560

what size office we need based on those

1168

00:39:24,790 --> 00:39:22,240

manifest requirements so it's a it's a

1169

00:39:26,790 --> 00:39:24,800

constantly somewhat changing target we

1170

00:39:27,829 --> 00:39:26,800

will hire early to try to prepare for

1171

00:39:30,069 --> 00:39:27,839

that

1172

00:39:32,150 --> 00:39:30,079

we don't always get it right and because

1173

00:39:34,150 --> 00:39:32,160

if the program doesn't fly exactly on

1174

00:39:34,950 --> 00:39:34,160

time then we may have too many

1175

00:39:37,030 --> 00:39:34,960

if

1176

00:39:39,430 --> 00:39:37,040

we come up to speed earlier and we we

1177

00:39:41,190 --> 00:39:39,440

don't hire soon enough then we may not

1178

00:39:43,589 --> 00:39:41,200

have enough and so it's so we try our

1179

00:39:45,030 --> 00:39:43,599

best to plan for that and and hire

1180

00:39:46,710 --> 00:39:45,040

according to that so that we have the

1181

00:39:47,670 --> 00:39:46,720

right numbers of folks to accomplish the

1182

00:39:49,430 --> 00:39:47,680

mission

1183

00:39:51,109 --> 00:39:49,440

so i can't give you a specific number

1184

00:39:53,990 --> 00:39:51,119

because i haven't been i've been doing

1185

00:39:56,150 --> 00:39:54,000

that for the last year and uh i'm sure

1186

00:39:58,069 --> 00:39:56,160

probably the current division office and

1187

00:39:59,750 --> 00:39:58,079

flight crew ops can probably

1188

00:40:01,270 --> 00:39:59,760

elaborate a little bit better on on on

1189

00:40:03,109 --> 00:40:01,280

where they are but that's essentially

1190

00:40:07,589 --> 00:40:03,119

the process that we use to decide the

1191

00:40:11,670 --> 00:40:09,990

todd halverson oak florida today for

1192

00:40:14,390 --> 00:40:11,680

either steve or anybody who wants to

1193

00:40:16,710 --> 00:40:14,400

take it i was curious about what you

1194

00:40:17,750 --> 00:40:16,720

folks thought about

1195

00:40:20,069 --> 00:40:17,760

the

1196

00:40:22,710 --> 00:40:20,079

commercial crew transportation program

1197

00:40:25,510 --> 00:40:22,720

shifting the responsibility for

1198

00:40:28,150 --> 00:40:25,520

launching astronauts from nasa to the

1199

00:40:29,990 --> 00:40:28,160

private sector

1200

00:40:31,990 --> 00:40:30,000

anybody want to take that

1201

00:40:34,230 --> 00:40:32,000

i guess not

1202

00:40:36,470 --> 00:40:34,240

no okay another hard question i get to

1203

00:40:38,069 --> 00:40:36,480

take that one um

1204

00:40:40,069 --> 00:40:38,079

well i think uh

1205

00:40:41,990 --> 00:40:40,079

i think it's uh it's a it's a

1206

00:40:44,150 --> 00:40:42,000

challenging time in terms of of what

1207

00:40:46,069 --> 00:40:44,160

we're doing with that and uh i haven't

1208

00:40:47,109 --> 00:40:46,079

been working on it the last year uh

1209

00:40:48,710 --> 00:40:47,119

because i've been training for this

1210

00:40:50,630 --> 00:40:48,720

mission uh

1211

00:40:52,630 --> 00:40:50,640

the uh to go from

1212

00:40:55,349 --> 00:40:52,640

essentially government

1213

00:40:57,190 --> 00:40:55,359

oversight to government insight it'll be

1214

00:40:58,550 --> 00:40:57,200

an interesting transition we have to go

1215

00:41:00,390 --> 00:40:58,560

through and a real challenge for us

1216

00:41:01,829 --> 00:41:00,400

because we have to figure out what

1217

00:41:04,230 --> 00:41:01,839

you want the you want the commercial

1218

00:41:06,550 --> 00:41:04,240

companies to to succeed and you want

1219

00:41:08,790 --> 00:41:06,560

them to be able to do it hopefully

1220

00:41:10,390 --> 00:41:08,800

you know cheaper than what we do it how

1221

00:41:12,390 --> 00:41:10,400

we do it as one of the motivators for

1222

00:41:15,030 --> 00:41:12,400

doing it but the challenge is making

1223

00:41:15,910 --> 00:41:15,040

sure we maintain the safety so i guess

1224

00:41:17,910 --> 00:41:15,920

when i

1225

00:41:19,990 --> 00:41:17,920

put on my old

1226

00:41:21,829 --> 00:41:20,000

astronaut office chief hat what i look

1227

00:41:23,990 --> 00:41:21,839

at is is i think the devil's in the

1228

00:41:25,589 --> 00:41:24,000

details here and it's all on how we

1229

00:41:26,710 --> 00:41:25,599

implement it how much insight is the

1230

00:41:29,190 --> 00:41:26,720

right amount

1231

00:41:30,710 --> 00:41:29,200

uh versus oversight and so i think from

1232

00:41:32,790 --> 00:41:30,720

an office perspective what we'd be

1233

00:41:34,630 --> 00:41:32,800

looking at with that transition to

1234

00:41:36,230 --> 00:41:34,640

commercial is

1235

00:41:37,990 --> 00:41:36,240

first and foremost the safety of the

1236

00:41:40,069 --> 00:41:38,000

process the safety of the vehicle that

1237

00:41:41,750 --> 00:41:40,079

we fly making sure that it meets our

1238

00:41:44,470 --> 00:41:41,760

human rating requirements and so i think

1239

00:41:46,550 --> 00:41:44,480

the way we're approaching this is

1240

00:41:48,950 --> 00:41:46,560

is in terms of how we handle the human

1241

00:41:50,790 --> 00:41:48,960

rating requirements to this new set of

1242

00:41:53,510 --> 00:41:50,800

contractors if you will

1243

00:41:54,870 --> 00:41:53,520

that will be providing this new vehicle

1244

00:41:56,870 --> 00:41:54,880

to us i don't know if i answered your

1245

00:41:59,190 --> 00:41:56,880

question very well but it's it's very

1246

00:42:01,990 --> 00:41:59,200

much a work in progress and

1247

00:42:04,309 --> 00:42:02,000

and i think the key is how we do it so i

1248

00:42:06,470 --> 00:42:04,319

don't think anybody's against doing it

1249

00:42:08,390 --> 00:42:06,480

it's just a matter of

1250

00:42:10,790 --> 00:42:08,400

how you implement it and implement it

1251

00:42:12,790 --> 00:42:10,800

smartly safely and effectively

1252

00:42:14,790 --> 00:42:12,800

if i could give a big picture spin on

1253

00:42:16,550 --> 00:42:14,800

that as well we're kind of fixated right

1254

00:42:18,870 --> 00:42:16,560

now on the next steps that we're about

1255

00:42:19,750 --> 00:42:18,880

to take but as an office i think you'll

1256

00:42:21,750 --> 00:42:19,760

find

1257

00:42:23,750 --> 00:42:21,760

down to the last person in our office

1258

00:42:26,230 --> 00:42:23,760

we're all very pro nasa but more broadly

1259

00:42:28,309 --> 00:42:26,240

we're very pro human space flight and i

1260

00:42:29,750 --> 00:42:28,319

think if you look at the long run most

1261

00:42:31,750 --> 00:42:29,760

of us would agree that the more human

1262

00:42:34,390 --> 00:42:31,760

space flight the better and whatever

1263

00:42:35,990 --> 00:42:34,400

means out there uh help us to accomplish

1264

00:42:38,790 --> 00:42:36,000

that because there's so many reasons for

1265

00:42:40,870 --> 00:42:38,800

us to get off and explore and expand

1266

00:42:43,349 --> 00:42:40,880

then we're in support of that no

1267

00:42:45,430 --> 00:42:43,359

question about it so if this becomes one

1268

00:42:47,030 --> 00:42:45,440

of the logical next step again from a

1269

00:42:48,630 --> 00:42:47,040

big picture standpoint then we're going

1270

00:42:50,069 --> 00:42:48,640

to be very supportive of it and we're

1271

00:42:55,349 --> 00:42:50,079

going to offer as much help as we can

1272

00:43:00,390 --> 00:42:57,270

all right thanks very much

1273

00:43:01,990 --> 00:43:00,400

let me give steve an easier one

1274

00:43:04,150 --> 00:43:02,000

i was wondering if you guys have

1275

00:43:07,349 --> 00:43:04,160

nicknames for each other and if you do

1276

00:43:07,359 --> 00:43:11,270

not as far as you know

1277

00:43:15,030 --> 00:43:13,349

uh

1278

00:43:16,790 --> 00:43:15,040

no i don't think i can say anything here

1279

00:43:18,309 --> 00:43:16,800

wouldn't get me in trouble so

1280

00:43:24,069 --> 00:43:18,319

so i think i won't

1281

00:43:28,870 --> 00:43:26,470

that was that was the easy one too um

1282

00:43:31,109 --> 00:43:28,880

let me try one more and this is for

1283

00:43:33,190 --> 00:43:31,119

steve uh you mentioned that you've uh

1284

00:43:34,630 --> 00:43:33,200

flown discovery twice and this will be

1285

00:43:38,550 --> 00:43:34,640

your third flight

1286

00:43:40,950 --> 00:43:38,560

um i i'm wondering if the vehicle has a

1287

00:43:43,109 --> 00:43:40,960

personality of its own and if it does

1288

00:43:45,430 --> 00:43:43,119

how you would describe it

1289

00:43:47,510 --> 00:43:45,440

well that's a good question uh

1290

00:43:50,870 --> 00:43:47,520

i think they do i've flown lifelong

1291

00:43:52,950 --> 00:43:50,880

columbia atlantis and discovery and and

1292

00:43:54,950 --> 00:43:52,960

it's probably just

1293

00:43:56,950 --> 00:43:54,960

imaginary but but i think they fly

1294

00:43:59,750 --> 00:43:56,960

differently and uh you know to be

1295

00:44:01,750 --> 00:43:59,760

specific i think uh

1296

00:44:03,030 --> 00:44:01,760

i think uh

1297

00:44:05,109 --> 00:44:03,040

discovery

1298

00:44:07,510 --> 00:44:05,119

well columbia flies flew different than

1299

00:44:08,790 --> 00:44:07,520

all than either the other two and and i

1300

00:44:11,510 --> 00:44:08,800

think you can explain that because it

1301

00:44:13,109 --> 00:44:11,520

was a lot heavier um it had tiles all

1302

00:44:14,309 --> 00:44:13,119

over it as opposed to thermal blankets

1303

00:44:15,829 --> 00:44:14,319

and i think all of the handling

1304

00:44:17,030 --> 00:44:15,839

qualities of columbia were just a little

1305

00:44:19,190 --> 00:44:17,040

bit different than the other ones it

1306

00:44:21,510 --> 00:44:19,200

flew it flew like it was heavier quite

1307

00:44:22,470 --> 00:44:21,520

frankly from what i remember

1308

00:44:27,589 --> 00:44:22,480

i think

1309

00:44:30,630 --> 00:44:27,599

has a little bit wilder ride on ascent

1310

00:44:32,069 --> 00:44:30,640

um it just reminds me that it just the

1311

00:44:33,750 --> 00:44:32,079

the motions that you feel as you're

1312

00:44:35,430 --> 00:44:33,760

going up i mean the trajectory is the

1313

00:44:37,349 --> 00:44:35,440

same it looks the same

1314

00:44:39,750 --> 00:44:37,359

it flies to the same

1315

00:44:42,470 --> 00:44:39,760

cutoff conditions but but it just seems

1316

00:44:44,470 --> 00:44:42,480

to be a little bit wilder more a little

1317

00:44:46,790 --> 00:44:44,480

bit wilder right on acid i think

1318

00:44:48,630 --> 00:44:46,800

atlantis is a little bit

1319

00:44:50,470 --> 00:44:48,640

rougher right on entry specifically in

1320

00:44:51,990 --> 00:44:50,480

atlantis when you hit typically in all

1321

00:44:53,589 --> 00:44:52,000

the vehicles when you hit the mach 1

1322

00:44:55,109 --> 00:44:53,599

point you get this buzzing that goes

1323

00:44:57,430 --> 00:44:55,119

through the airframe as you slow from

1324

00:44:58,950 --> 00:44:57,440

supersonic to subsonic

1325

00:45:00,870 --> 00:44:58,960

and you notice it on discovery but it

1326

00:45:02,230 --> 00:45:00,880

doesn't it's not very much and it

1327

00:45:04,150 --> 00:45:02,240

doesn't seem to very long at least the

1328

00:45:06,390 --> 00:45:04,160

last time a couple times i flew it was

1329

00:45:08,470 --> 00:45:06,400

like that atlantis it has this buzzing

1330

00:45:09,990 --> 00:45:08,480

that at least on that flight went on

1331

00:45:11,349 --> 00:45:10,000

forever and it may have been associated

1332

00:45:13,109 --> 00:45:11,359

with the weight of the vehicle or center

1333

00:45:14,710 --> 00:45:13,119

or gravity of the vehicle but to me they

1334

00:45:16,069 --> 00:45:14,720

fly a little bit different so i think

1335

00:45:18,790 --> 00:45:16,079

the personalities are a little bit

1336

00:45:21,190 --> 00:45:18,800

different how they feel how they fly

1337

00:45:23,270 --> 00:45:21,200

they all fly great they all handle great

1338

00:45:24,870 --> 00:45:23,280

but they're just slightly different

1339

00:45:27,510 --> 00:45:24,880

so you can you can tell there's some

1340

00:45:30,230 --> 00:45:27,520

switches that are different um

1341

00:45:31,430 --> 00:45:30,240

but but very very small deltas there but

1342

00:45:32,790 --> 00:45:31,440

they just they just handle a little bit

1343

00:45:33,829 --> 00:45:32,800

different to me so i guess that's how i

1344

00:45:36,470 --> 00:45:33,839

describe

1345

00:45:37,829 --> 00:45:36,480

the differences

1346

00:45:39,030 --> 00:45:37,839

all right with that we will now switch

1347

00:45:43,270 --> 00:45:39,040

over to headquarters where we have a

1348

00:45:48,390 --> 00:45:46,150

hi this is denise chow from space.com

1349

00:45:51,910 --> 00:45:48,400

one of the other milestones that

1350

00:45:53,670 --> 00:45:51,920

will happen if your mission goes on

1351
00:45:55,990 --> 00:45:53,680
with the proper timeline is that the

1352
00:45:57,750 --> 00:45:56,000
10th anniversary of expedition 1

1353
00:45:59,910 --> 00:45:57,760
arriving at the space station and

1354
00:46:01,750 --> 00:45:59,920
especially for the members of the crew

1355
00:46:03,829 --> 00:46:01,760
that have spent significant amounts of

1356
00:46:05,990 --> 00:46:03,839
time on the station i was just wondering

1357
00:46:11,510 --> 00:46:06,000
what that milestone means to you and and

1358
00:46:15,109 --> 00:46:13,589
i guess i'll uh start out you know it's

1359
00:46:19,510 --> 00:46:15,119
uh

1360
00:46:21,829 --> 00:46:19,520
fly on a shuttle after in a shuttle

1361
00:46:23,910 --> 00:46:21,839
mission after being on station and you

1362
00:46:26,309 --> 00:46:23,920
know all of us have watched from the

1363
00:46:28,230 --> 00:46:26,319

very beginning when space station crews

1364

00:46:29,349 --> 00:46:28,240

first started and actually the rigor

1365

00:46:30,790 --> 00:46:29,359

that they went through for their

1366

00:46:32,069 --> 00:46:30,800

training and

1367

00:46:34,550 --> 00:46:32,079

what they had to experience when they're

1368

00:46:37,030 --> 00:46:34,560

on board and i guess one thing that that

1369

00:46:39,030 --> 00:46:37,040

i noticed over that time is that both

1370

00:46:40,790 --> 00:46:39,040

the the quality of life and training and

1371

00:46:42,950 --> 00:46:40,800

quality of life onboard space station is

1372

00:46:44,950 --> 00:46:42,960

continuing to improve and

1373

00:46:47,109 --> 00:46:44,960

um that's a great thing i think we're

1374

00:46:49,829 --> 00:46:47,119

learning how to live in space and every

1375

00:46:51,670 --> 00:46:49,839

step and every cruise is doing it better

1376
00:46:54,550 --> 00:46:51,680
and getting smarter and the program is

1377
00:46:59,109 --> 00:46:56,790
you guys have anything

1378
00:47:01,349 --> 00:46:59,119
i think one thing is to say to say thank

1379
00:47:02,950 --> 00:47:01,359
you to that to them because

1380
00:47:04,069 --> 00:47:02,960
i think from the very beginning starting

1381
00:47:04,870 --> 00:47:04,079
with this

1382
00:47:06,870 --> 00:47:04,880
you know

1383
00:47:09,190 --> 00:47:06,880
significantly smaller volume where you

1384
00:47:11,670 --> 00:47:09,200
have these three guys living up there

1385
00:47:13,990 --> 00:47:11,680
and working as an international crew

1386
00:47:16,630 --> 00:47:14,000
working on you know a vehicle that then

1387
00:47:18,069 --> 00:47:16,640
had had even at that size been had been

1388
00:47:20,710 --> 00:47:18,079

built um

1389

00:47:23,270 --> 00:47:20,720

from from that point on successful

1390

00:47:25,190 --> 00:47:23,280

international program it just was such a

1391

00:47:28,230 --> 00:47:25,200

great starting point for for all of us

1392

00:47:30,309 --> 00:47:28,240

who now get to experience this ginormous

1393

00:47:33,030 --> 00:47:30,319

volume and

1394

00:47:34,630 --> 00:47:33,040

still sharing in this really spectacular

1395

00:47:42,549 --> 00:47:34,640

international program that has made it

1396

00:47:45,829 --> 00:47:44,470

and just a follow-up question for um for

1397

00:47:46,950 --> 00:47:45,839

steve i thought it was really

1398

00:47:48,549 --> 00:47:46,960

interesting how you were talking about

1399

00:47:50,150 --> 00:47:48,559

the differences of um the various

1400

00:47:52,390 --> 00:47:50,160

shuttles that you phone on and was just

1401
00:47:54,549 --> 00:47:52,400
wondering about discovery in particular

1402
00:47:56,710 --> 00:47:54,559
if you've noticed differences

1403
00:47:58,069 --> 00:47:56,720
between the first and the second flight

1404
00:47:59,990 --> 00:47:58,079
that you've taken and

1405
00:48:02,390 --> 00:48:00,000
um to your knowledge the upgrades that

1406
00:48:05,349 --> 00:48:02,400
have been made for this upcoming mission

1407
00:48:07,270 --> 00:48:05,359
if um it'll feel different for you

1408
00:48:09,589 --> 00:48:07,280
um i i don't think it'll feel different

1409
00:48:11,910 --> 00:48:09,599
the the first flight on discovery was

1410
00:48:14,309 --> 00:48:11,920
not the space station and we had a we

1411
00:48:15,829 --> 00:48:14,319
actually had a space hab

1412
00:48:17,910 --> 00:48:15,839
additional science module in the back of

1413
00:48:19,190 --> 00:48:17,920

the payload bay so it was a lot heavier

1414

00:48:21,190 --> 00:48:19,200

and the mission was a lot different it

1415

00:48:23,589 --> 00:48:21,200

was a lot shorter

1416

00:48:24,710 --> 00:48:23,599

second mission we went to space station

1417

00:48:29,190 --> 00:48:24,720

and

1418

00:48:30,390 --> 00:48:29,200

had the uh the power transfer or we

1419

00:48:32,069 --> 00:48:30,400

didn't have the power transfer system

1420

00:48:33,829 --> 00:48:32,079

yet we will on this flight

1421

00:48:36,710 --> 00:48:33,839

but in terms of how they flew and how

1422

00:48:38,790 --> 00:48:36,720

they operated and acted um

1423

00:48:40,470 --> 00:48:38,800

basically the same what was unique by

1424

00:48:41,829 --> 00:48:40,480

the the first flight i flew to scurvy we

1425

00:48:44,390 --> 00:48:41,839

went really high we went up to hubble

1426
00:48:45,270 --> 00:48:44,400
altitudes we were up at about 360 miles

1427
00:48:47,430 --> 00:48:45,280
high

1428
00:48:49,270 --> 00:48:47,440
and uh in a different orbit than space

1429
00:48:50,870 --> 00:48:49,280
station and and the view of the earth

1430
00:48:53,910 --> 00:48:50,880
from that different orbit

1431
00:48:55,589 --> 00:48:53,920
is is is just altogether different than

1432
00:48:57,190 --> 00:48:55,599
what it looks like off a space station

1433
00:48:59,190 --> 00:48:57,200
and so that's probably if you want to

1434
00:49:01,589 --> 00:48:59,200
compare those two flights for me

1435
00:49:03,670 --> 00:49:01,599
the the different altitude really made

1436
00:49:05,270 --> 00:49:03,680
made a huge uh huge

1437
00:49:06,950 --> 00:49:05,280
significant difference in in how the

1438
00:49:07,910 --> 00:49:06,960

earth looks at the altitudes we were

1439

00:49:10,309 --> 00:49:07,920

flying

1440

00:49:12,309 --> 00:49:10,319

uh the earth looked a lot smaller and a

1441

00:49:13,829 --> 00:49:12,319

lot rounder which you wouldn't think the

1442

00:49:16,549 --> 00:49:13,839

difference of

1443

00:49:19,510 --> 00:49:16,559

gosh what was it maybe uh you know

1444

00:49:22,549 --> 00:49:19,520

120 130 miles makes but it really makes

1445

00:49:24,309 --> 00:49:22,559

a big difference when you're up there

1446

00:49:25,589 --> 00:49:24,319

all right thank you very much steve and

1447

00:49:27,109 --> 00:49:25,599

thank you for everyone joining us that

1448

00:49:29,109 --> 00:49:27,119

concludes our briefing for more

1449

00:49:30,309 --> 00:49:29,119

information on the sts-133 mission we

1450

00:49:32,950 --> 00:49:30,319

encourage you to look at our website

