



1
00:00:09,860 --> 00:00:02,540
Houston this is charlie bolden how do

2
00:00:13,910 --> 00:00:09,870
you read houston this is charlie bolden

3
00:00:20,689 --> 00:00:13,920
how do you read hey butch how're you

4
00:00:25,310 --> 00:00:23,450
okay I'm glad we didn't go through all

5
00:00:28,790 --> 00:00:25,320
the protocols and everything but I'm

6
00:00:30,019 --> 00:00:28,800
gonna ask you to introduce yourself and

7
00:00:32,150 --> 00:00:30,029
the rest of your crew members they're

8
00:00:33,500 --> 00:00:32,160
Samantha it's great to see you this is

9
00:00:35,479 --> 00:00:33,510
the first time I've had a chance to talk

10
00:00:37,280 --> 00:00:35,489
to you we have a group of school

11
00:00:38,780 --> 00:00:37,290
students down here from elementary all

12
00:00:42,319 --> 00:00:38,790
the way up through high school any

13
00:00:44,720 --> 00:00:42,329

college students no and they really are

14

00:00:47,150 --> 00:00:44,730

anxious to ask you some questions so I'm

15

00:00:48,979 --> 00:00:47,160

gonna turn it over to you to introduce

16

00:00:50,330 --> 00:00:48,989

yourself and your crew and then we'll

17

00:00:51,799 --> 00:00:50,340

get right into the questions if that's

18

00:01:01,790 --> 00:00:51,809

okay with you and tell us a little bit

19

00:01:04,939 --> 00:01:01,800

about what's going on today that's why

20

00:01:06,710 --> 00:01:04,949

he keeps calling me butch and I've been

21

00:01:18,350 --> 00:01:06,720

up here for four months I launched on a

22

00:01:21,620 --> 00:01:18,360

Soyuz 40s I'm Air Force colonel terry

23

00:01:24,649 --> 00:01:21,630

virtis and I launched in November with

24

00:01:27,170 --> 00:01:24,659

Samantha on Soyuz 41s from Baikonur in

25

00:01:28,730 --> 00:01:27,180

Kazakhstan we've been here for about two

26

00:01:31,249 --> 00:01:28,740

months and we've been very busy doing a

27

00:01:33,020 --> 00:01:31,259

lot of experiments and science and also

28

00:01:34,730 --> 00:01:33,030

getting maintenance done getting and

29

00:01:41,630 --> 00:01:34,740

keeping the space station in working

30

00:01:42,289 --> 00:01:41,640

order Italian Air Force captain samantha

31

00:01:44,300 --> 00:01:42,299

cristoforetti

32

00:01:47,240 --> 00:01:44,310

and of course i came here about two

33

00:01:49,160 --> 00:01:47,250

months ago with Terry and say miss Terry

34

00:01:51,770 --> 00:01:49,170

I'm enjoying my time up here and doing a

35

00:01:54,639 --> 00:01:51,780

lot of science doing all kinds of

36

00:01:58,280 --> 00:01:54,649

interesting scientific research and

37

00:02:00,980 --> 00:01:58,290

enjoying floating a lot great well Terry

38

00:02:03,530 --> 00:02:00,990

butch Samantha I'm now gonna do

39

00:02:06,080 --> 00:02:03,540
somebody's question we do and here they

40

00:02:09,609 --> 00:02:06,090
come and you can step right out here

41

00:02:13,040 --> 00:02:09,619
they can't see you my name is Latrice in

42

00:02:18,100 --> 00:02:13,050
life is this life in space hoarders at

43

00:02:24,610 --> 00:02:21,860
his life in space hard or is it easy

44

00:02:27,350 --> 00:02:24,620
well it depends on what you're doing

45

00:02:30,290 --> 00:02:27,360
some things I would say nothing's hard

46

00:02:32,150 --> 00:02:30,300
we're very very well-trained prepared

47

00:02:36,140 --> 00:02:32,160
well for all different aspects the

48

00:02:37,370 --> 00:02:36,150
launching the different science and and

49

00:02:38,960 --> 00:02:37,380
protocols and things that we do

50

00:02:40,640 --> 00:02:38,970
maintenance that we do on board station

51
00:02:42,230 --> 00:02:40,650
of course the re-entry as well when we

52
00:02:44,420 --> 00:02:42,240
come back on the Russian Soyuz we're

53
00:02:46,880 --> 00:02:44,430
very very well trained but days are long

54
00:02:49,490 --> 00:02:46,890
and sometimes they're filled with many

55
00:02:51,320 --> 00:02:49,500
many many many many different tasks so

56
00:02:53,090 --> 00:02:51,330
if anything hard about it

57
00:02:56,180 --> 00:02:53,100
that would be it just keeping mentally

58
00:02:58,790 --> 00:02:56,190
tied in all the time can be very trying

59
00:03:00,500 --> 00:02:58,800
on your mind but what a great

60
00:03:01,940 --> 00:03:00,510
environment what a great place to work I

61
00:03:03,530 --> 00:03:01,950
mean you can flip upside down in a

62
00:03:05,510 --> 00:03:03,540
heartbeat the floor is the ceiling the

63
00:03:07,190 --> 00:03:05,520

ceiling is the floor there is no up or

64

00:03:10,250 --> 00:03:07,200

down and like Samantha said when we

65

00:03:27,650 --> 00:03:10,260

started it is a fabulous time and it's a

66

00:03:30,530 --> 00:03:27,660

lot of fun thank you that's a great

67

00:03:33,410 --> 00:03:30,540

question and as you can see it's so cool

68

00:03:34,850 --> 00:03:33,420

floating you can go on the ceiling you

69

00:03:36,620 --> 00:03:34,860

can go on the walls it doesn't matter

70

00:03:38,750 --> 00:03:36,630

which direction you are you can just

71

00:03:40,010 --> 00:03:38,760

readapt and after you've been here for a

72

00:03:42,920 --> 00:03:40,020

few weeks you really get used to

73

00:03:44,600 --> 00:03:42,930

floating and being weightless and it's

74

00:03:47,509 --> 00:03:44,610

really fun to be able to move around and

75

00:03:50,000 --> 00:03:47,519

just kind of with no effort flip

76

00:03:51,199 --> 00:03:50,010

yourself over like that and for me

77

00:03:58,790 --> 00:03:51,209

that's probably my favorite thing that

78

00:04:01,160 --> 00:03:58,800

we get to do up here hello I'm Terry

79

00:04:10,550 --> 00:04:01,170

Mullins what's do you have to do to

80

00:04:15,420 --> 00:04:13,259

well there's different paths to become

81

00:04:17,969 --> 00:04:15,430

an astronaut some astronauts are

82

00:04:20,310 --> 00:04:17,979

military pilots most of them are also

83

00:04:23,250 --> 00:04:20,320

test pilots some astronauts are

84

00:04:25,050 --> 00:04:23,260

scientists or engineers and a lot of

85

00:04:26,700 --> 00:04:25,060

astronauts have mixed backgrounds like

86

00:04:28,770 --> 00:04:26,710

there are pilots but they also have a

87

00:04:31,230 --> 00:04:28,780

background in science or engineering or

88

00:04:33,480 --> 00:04:31,240

medicine you can also study medicine we

89

00:04:36,469 --> 00:04:33,490

have also doctors in among our fellow

90

00:04:38,879 --> 00:04:36,479

astronauts so those are main main pads

91

00:04:41,640 --> 00:04:38,889

it's important you know to work hard in

92

00:04:43,440 --> 00:04:41,650

school to do well and I like to say it's

93

00:04:45,060 --> 00:04:43,450

really important to choose a career you

94

00:04:46,740 --> 00:04:45,070

know before you become an astronaut that

95

00:04:49,200 --> 00:04:46,750

you really love that you're passionate

96

00:04:51,330 --> 00:04:49,210

about because that that's really the the

97

00:04:53,190 --> 00:04:51,340

key the secret to being good at what you

98

00:04:55,050 --> 00:04:53,200

do and you know when you're good at what

99

00:05:03,840 --> 00:04:55,060

you do then you're also a good candidate

100

00:05:06,860 --> 00:05:03,850

for the astronaut program hi I'm Danny

101
00:05:10,430 --> 00:05:06,870
Michaels and I go to Maury Elementary

102
00:05:23,570 --> 00:05:10,440
mine's kind of similar to her questions

103
00:05:29,610 --> 00:05:27,240
Danny the weather is always clear so

104
00:05:31,860 --> 00:05:29,620
that's a good thing what push didn't be

105
00:05:34,529 --> 00:05:31,870
to be an astronaut I think the biggest

106
00:05:36,150 --> 00:05:34,539
desire I had was to do the best what the

107
00:05:38,520 --> 00:05:36,160
attributes that the good Lord gave me

108
00:05:41,040 --> 00:05:38,530
and to try to pursue any and everything

109
00:05:43,950 --> 00:05:41,050
that I could and I wound up joining the

110
00:05:45,960 --> 00:05:43,960
military had a patriotic tug and as I

111
00:05:47,520 --> 00:05:45,970
was in the military I was able to fly

112
00:05:49,860 --> 00:05:47,530
was had that opportunity went to flight

113
00:05:52,320 --> 00:05:49,870

school and once I got my wings my wings

114

00:05:55,080 --> 00:05:52,330

of gold my Navy wings of gold there was

115

00:05:57,390 --> 00:05:55,090

no higher place you could fly or faster

116

00:05:59,490 --> 00:05:57,400

to fly than on the space shuttle so sort

117

00:06:01,050 --> 00:05:59,500

of that set that as a goal out there and

118

00:06:03,900 --> 00:06:01,060

thought maybe one day that might be an

119

00:06:05,070 --> 00:06:03,910

opportunity and eventually in 2009 I was

120

00:06:07,379 --> 00:06:05,080

able to do that fly the space shuttle

121

00:06:08,670 --> 00:06:07,389

and then recently like we just said four

122

00:06:11,969 --> 00:06:08,680

months ago launched on a Russian Soyuz

123

00:06:13,650 --> 00:06:11,979

and here we are now so I'm very grateful

124

00:06:16,080 --> 00:06:13,660

for all the opportunities it's certainly

125

00:06:18,180 --> 00:06:16,090

not ourselves it's many people involved

126

00:06:20,070 --> 00:06:18,190

that actually get us to this point so

127

00:06:21,360 --> 00:06:20,080

grateful to my family and all of them as

128

00:06:24,510 --> 00:06:21,370

well

129

00:06:27,300 --> 00:06:24,520

Thanks hello my name is Charlotte Basso

130

00:06:29,310 --> 00:06:27,310

and I go to Watkins Elementary I was

131

00:06:37,860 --> 00:06:29,320

just wondering how do you move around in

132

00:06:39,960 --> 00:06:37,870

an antigravity environment hi Charlotte

133

00:06:41,760 --> 00:06:39,970

like we were demonstrating before that

134

00:06:43,110 --> 00:06:41,770

is something that you kind of need to

135

00:06:44,760 --> 00:06:43,120

learn how to do and you have to learn

136

00:06:46,469 --> 00:06:44,770

quick because as soon as the rockets

137

00:06:48,870 --> 00:06:46,479

engines shut down a few minutes after

138

00:06:50,460 --> 00:06:48,880

launch you're weightless and you don't

139

00:06:53,070 --> 00:06:50,470

have time to learn how to walk you just

140

00:06:54,300 --> 00:06:53,080

have to do it but it takes a little bit

141

00:06:57,029 --> 00:06:54,310

of getting used to but we've been here

142

00:06:59,219 --> 00:06:57,039

for long enough that that that we know

143

00:07:01,950 --> 00:06:59,229

how to move you have to move very slowly

144

00:07:03,060 --> 00:07:01,960

at first and if you push just with a

145

00:07:04,950 --> 00:07:03,070

little bit of force I don't know if you

146

00:07:07,620 --> 00:07:04,960

can see my finger here but I'll put some

147

00:07:09,840 --> 00:07:07,630

push on Samantha shoulders and then you

148

00:07:11,969 --> 00:07:09,850

start moving so you have to control how

149

00:07:13,590 --> 00:07:11,979

much pushing and pulling you do

150

00:07:15,270 --> 00:07:13,600

otherwise you'll go flying into the wall

151
00:07:17,700 --> 00:07:15,280
and hit your head on something so you

152
00:07:19,350 --> 00:07:17,710
got to be careful but it's really fun

153
00:07:21,330 --> 00:07:19,360
and it's something that the humans can

154
00:07:23,219 --> 00:07:21,340
really learn how to do and adapt to they

155
00:07:24,779 --> 00:07:23,229
have a question for you guys anybody go

156
00:07:27,029 --> 00:07:24,789
to Maryland schools there I grew up in

157
00:07:28,830 --> 00:07:27,039
Maryland I went to school in Prince

158
00:07:31,529 --> 00:07:28,840
George's County and Columbia Howard

159
00:07:39,180 --> 00:07:31,539
County you got a bunch of hands going up

160
00:07:42,210 --> 00:07:39,190
there Terry what school I went to Fort

161
00:07:44,040 --> 00:07:42,220
McHenry Elementary I asked the question

162
00:07:47,460 --> 00:07:44,050
I went to Fort McHenry Elementary in

163
00:07:48,540 --> 00:07:47,470

Lanham and Oakland Mills and Columbia

164

00:07:53,330 --> 00:07:48,550

but I'll let these kids ask some

165

00:08:01,219 --> 00:07:58,350

my question to you is I heard that y'all

166

00:08:09,820 --> 00:08:01,229

a 3d printed a tool how is that going

167

00:08:15,920 --> 00:08:12,920

yes we did we had several things that we

168

00:08:18,530 --> 00:08:15,930

printed a 3d printer the 3d printer has

169

00:08:20,390 --> 00:08:18,540

now been stashed away and all of those

170

00:08:22,040 --> 00:08:20,400

items that we printed have been bagged

171

00:08:23,780 --> 00:08:22,050

up because we're returning them to earth

172

00:08:25,460 --> 00:08:23,790

they're going to be analyzed because

173

00:08:27,500 --> 00:08:25,470

before they sent that printer up here

174

00:08:29,750 --> 00:08:27,510

they actually printed the same items on

175

00:08:32,450 --> 00:08:29,760

earth that we printed up here except for

176
00:08:34,610 --> 00:08:32,460
one we printed also a ratchet wrench and

177
00:08:40,790 --> 00:08:34,620
but all those things are going back I

178
00:08:42,200 --> 00:08:40,800
wish I could show them to you yeah but

179
00:08:44,060 --> 00:08:42,210
yeah the ratchet wench we printed was

180
00:08:45,530 --> 00:08:44,070
similar to this one just fairly small

181
00:08:47,450 --> 00:08:45,540
but a ratchet wrench it was actually

182
00:08:49,660 --> 00:08:47,460
usable you could actually use it they

183
00:08:51,620 --> 00:08:49,670
wouldn't let us use it I wanted to but

184
00:08:53,420 --> 00:08:51,630
anyway those are bagged up and be

185
00:08:54,950 --> 00:08:53,430
heading back on the spacex the Dragon

186
00:08:57,020 --> 00:08:54,960
capsule that'll be heading back I think

187
00:09:00,800 --> 00:08:57,030
around the 10th of February so that's

188
00:09:03,980 --> 00:09:00,810

what those are now hi my name is Robert

189

00:09:07,400 --> 00:09:03,990

Golan and I I want to know how is it

190

00:09:17,900 --> 00:09:07,410

like being in a spacesuit in like when

191

00:09:19,940 --> 00:09:17,910

you're outside of your ship Robert that

192

00:09:21,890 --> 00:09:19,950

is a great question what's it like being

193

00:09:23,750 --> 00:09:21,900

in a spacesuit when you're outside of

194

00:09:25,910 --> 00:09:23,760

the ship you know Robert when you get in

195

00:09:28,430 --> 00:09:25,920

one of those space walking suits you

196

00:09:31,010 --> 00:09:28,440

actually get into a spaceship it's a

197

00:09:32,840 --> 00:09:31,020

one-man spaceship it's got all the

198

00:09:34,730 --> 00:09:32,850

life-support it's got the oxygen that

199

00:09:36,830 --> 00:09:34,740

you need it's got cooling system that

200

00:09:39,800 --> 00:09:36,840

circulates cold water so you can stay

201
00:09:41,360 --> 00:09:39,810
cool so you don't get overheated the

202
00:09:42,980 --> 00:09:41,370
only thing it doesn't have inside is

203
00:09:44,810 --> 00:09:42,990
food you have a little we have a little

204
00:09:46,730 --> 00:09:44,820
water bag but we don't have any way to

205
00:09:48,740 --> 00:09:46,740
take food with us so we can only stay

206
00:09:51,380 --> 00:09:48,750
for certain length of time but it's

207
00:09:53,270 --> 00:09:51,390
absolutely fascinating the view through

208
00:09:54,590 --> 00:09:53,280
the visor without having an atmosphere

209
00:09:57,350 --> 00:09:54,600
to look through just the vacuum of space

210
00:09:59,420 --> 00:09:57,360
is so clear and it's just the thought

211
00:10:01,460 --> 00:09:59,430
that when you're outside we never go out

212
00:10:02,750 --> 00:10:01,470
alone we always send two people out but

213
00:10:04,220 --> 00:10:02,760

you think about you're the only two

214

00:10:05,570 --> 00:10:04,230

people in the entire universe that are

215

00:10:09,430 --> 00:10:05,580

doing something like that at that moment

216

00:10:13,430 --> 00:10:09,440

it's a pretty pretty special thing

217

00:10:15,590 --> 00:10:13,440

hi I'm Nandini from the Thomas Jefferson

218

00:10:18,110 --> 00:10:15,600

High School and I was wondering before

219

00:10:20,270 --> 00:10:18,120

you first went out into space what was

220

00:10:28,660 --> 00:10:20,280

the thing that intimidated you the most

221

00:10:33,410 --> 00:10:31,430

well I can tell you that the day that I

222

00:10:36,800 --> 00:10:33,420

went on the spacewalk I don't know that

223

00:10:39,860 --> 00:10:36,810

there was a lot of fear but even more so

224

00:10:42,199 --> 00:10:39,870

there was a spacewalk by my two comrades

225

00:10:44,900 --> 00:10:42,209

a commander Wiseman also a navy Navy

226
00:10:47,829 --> 00:10:44,910
commander and Alex Gerst they went out

227
00:10:50,110 --> 00:10:47,839
on a spacewalk about nine days before

228
00:10:53,630 --> 00:10:50,120
Wiseman and myself went out and when I

229
00:10:55,430 --> 00:10:53,640
suited them up and got them ready that

230
00:10:57,350 --> 00:10:55,440
was the most stressful thing that I have

231
00:10:59,000 --> 00:10:57,360
done up here because their lives were

232
00:11:00,800 --> 00:10:59,010
literally in my hands I had to get their

233
00:11:02,930 --> 00:11:00,810
helmets on right I had to get their

234
00:11:04,970 --> 00:11:02,940
maneuvering packs on right I had to make

235
00:11:07,010 --> 00:11:04,980
sure that the depress of the of the

236
00:11:09,650 --> 00:11:07,020
cabin went just according to plan and

237
00:11:11,810 --> 00:11:09,660
that was actually much much more of a

238
00:11:14,480 --> 00:11:11,820

stress because it wasn't my life that

239

00:11:17,380 --> 00:11:14,490

was in at stake it was it veilleux's and

240

00:11:20,360 --> 00:11:17,390

that's something that's a very very

241

00:11:21,500 --> 00:11:20,370

detailed process getting someone out the

242

00:11:23,210 --> 00:11:21,510

door you know you think when you open

243

00:11:25,579 --> 00:11:23,220

the hatch the first time and you go

244

00:11:28,070 --> 00:11:25,589

outside you've already been in the suit

245

00:11:30,170 --> 00:11:28,080

for five hours almost five hours even

246

00:11:31,699 --> 00:11:30,180

before you open the hatch and the person

247

00:11:33,170 --> 00:11:31,709

that's doing the most work is the one

248

00:11:35,210 --> 00:11:33,180

that's getting you ready to go out and

249

00:11:36,620 --> 00:11:35,220

the next spacewalk if it goes as planned

250

00:11:38,240 --> 00:11:36,630

colonel verts and I are going to go out

251
00:11:39,920 --> 00:11:38,250
and Samantha is going to have that task

252
00:11:42,730 --> 00:11:39,930
and I tell you what I don't envy her

253
00:11:48,160 --> 00:11:42,740
because it is a very detailed very

254
00:11:55,820 --> 00:11:53,660
hello I'm Kelton and what was this a job

255
00:11:58,490 --> 00:11:55,830
you want ever since you were kid or as

256
00:12:09,009 --> 00:11:58,500
you got orders it was this something you

257
00:12:13,939 --> 00:12:11,689
hey that's a great question thanks

258
00:12:15,919 --> 00:12:13,949
actually when I was very young in

259
00:12:18,350 --> 00:12:15,929
elementary school still I don't think I

260
00:12:20,900 --> 00:12:18,360
was eight years old yet

261
00:12:22,639 --> 00:12:20,910
I already told people adults and

262
00:12:24,470 --> 00:12:22,649
teachers that when I grew up I wanted to

263
00:12:26,479 --> 00:12:24,480

go to space and of course I didn't have

264

00:12:29,059 --> 00:12:26,489

an exact idea what it means to be an

265

00:12:32,359 --> 00:12:29,069

astronaut back then but as I grew up and

266

00:12:34,369 --> 00:12:32,369

I had a better idea this thought of

267

00:12:36,470 --> 00:12:34,379

becoming an astronaut and going to space

268

00:12:38,689 --> 00:12:36,480

actually attracted me more and more and

269

00:12:41,720 --> 00:12:38,699

then I was fortunate enough that growing

270

00:12:43,489 --> 00:12:41,730

up I developed mature interests for for

271

00:12:45,319 --> 00:12:43,499

science and technology and for flying

272

00:12:48,229 --> 00:12:45,329

and and guess what those are the things

273

00:12:50,419 --> 00:12:48,239

that can lead you to become an astronaut

274

00:12:53,780 --> 00:12:50,429

so it all came together wonderfully for

275

00:12:55,400 --> 00:12:53,790

me and you know it's just the best thing

276

00:13:00,309 --> 00:12:55,410

that I could possibly imagine doing so

277

00:13:03,199 --> 00:13:00,319

I'm very very happy my name is Nicole

278

00:13:04,460 --> 00:13:03,209

Fogle and what do you think the first

279

00:13:16,100 --> 00:13:04,470

thing you're gonna do when you get back

280

00:13:17,840 --> 00:13:16,110

to earth well that's that's a good

281

00:13:19,639 --> 00:13:17,850

question Samantha and I are gonna land

282

00:13:22,689 --> 00:13:19,649

together in the same Soyuz along with

283

00:13:24,559 --> 00:13:22,699

our Russian friend anton shkaplerov and

284

00:13:26,629 --> 00:13:24,569

samantha I are gonna get on an airplane

285

00:13:28,489 --> 00:13:26,639

with a NASA crew of folks and we're

286

00:13:29,539 --> 00:13:28,499

gonna come directly back to Houston but

287

00:13:31,340 --> 00:13:29,549

I think one of the first things that

288

00:13:33,019 --> 00:13:31,350

that I'll probably want to do is get a

289

00:13:35,960 --> 00:13:33,029

shower when we finally get to shower

290

00:13:38,629 --> 00:13:35,970

there's no showers up here although we

291

00:13:40,100 --> 00:13:38,639

have towels and basically you take a hot

292

00:13:41,600 --> 00:13:40,110

water put it in the towel and that's

293

00:13:43,039 --> 00:13:41,610

kind of your shower for six months and

294

00:13:44,329 --> 00:13:43,049

it's actually pretty good we can say

295

00:13:46,539 --> 00:13:44,339

pretty clean and stuff but that's that's

296

00:13:48,739 --> 00:13:46,549

one thing I'm looking forward to doing

297

00:13:50,119 --> 00:13:48,749

hey butch has a demo here he's gonna

298

00:13:52,669 --> 00:13:50,129

show you a little bit of physics in

299

00:13:54,470 --> 00:13:52,679

space yeah I want to show you all this

300

00:13:56,449 --> 00:13:54,480

this this is just an iPad y'all can

301
00:13:59,059 --> 00:13:56,459
y'all very familiar with this notice how

302
00:14:01,220 --> 00:13:59,069
it's almost twice as wide as it is that

303
00:14:02,720 --> 00:14:01,230
long or twice as long as it is wide so

304
00:14:04,100 --> 00:14:02,730
because of that because of the momentum

305
00:14:06,590 --> 00:14:04,110
and how that what the hell that affects

306
00:14:10,009 --> 00:14:06,600
it if I flip it just right it will flip

307
00:14:11,479 --> 00:14:10,019
twice and then it will roll the next

308
00:14:26,380 --> 00:14:11,489
time and it'll keep doing that so let's

309
00:14:31,010 --> 00:14:29,630
there goes the there goes the roll it

310
00:14:33,650 --> 00:14:31,020
flips a couple times and then it rolls

311
00:14:35,480 --> 00:14:33,660
over so when you guys take physics class

312
00:14:37,850 --> 00:14:35,490
your your physics instructors can

313
00:14:39,140 --> 00:14:37,860

explain mass moments of inertia and it's

314

00:14:47,350 --> 00:14:39,150

cool being in space because you can

315

00:14:53,930 --> 00:14:50,530

hello my name is Josiah Murphy from

316

00:14:56,030 --> 00:14:53,940

Cardozo education campus and I was

317

00:14:57,830 --> 00:14:56,040

wondering what kind of work or

318

00:15:05,570 --> 00:14:57,840

researcher are you three doing currently

319

00:15:07,400 --> 00:15:05,580

up in space well it's actually been

320

00:15:09,500 --> 00:15:07,410

really interesting we just had this

321

00:15:11,900 --> 00:15:09,510

cargo vehicle arrived with a lot of

322

00:15:13,370 --> 00:15:11,910

science on board and so we've all been

323

00:15:16,700 --> 00:15:13,380

busy all day every day even on the

324

00:15:18,440 --> 00:15:16,710

weekends we were doing science I'm doing

325

00:15:20,960 --> 00:15:18,450

a material science right now where

326

00:15:23,660 --> 00:15:20,970

they're measuring how materials as they

327

00:15:26,930 --> 00:15:23,670

cool how they become coarse and how the

328

00:15:29,600 --> 00:15:26,940

molecules inside these melted liquids as

329

00:15:31,370 --> 00:15:29,610

they as they solidify how they change we

330

00:15:33,260 --> 00:15:31,380

have a plant experiment in the Columbus

331

00:15:35,000 --> 00:15:33,270

module in the European module down the

332

00:15:36,620 --> 00:15:35,010

way there that's really cool it's got

333

00:15:37,610 --> 00:15:36,630

this big pink light so at night time

334

00:15:40,070 --> 00:15:37,620

when you turn all the lights off the

335

00:15:41,540 --> 00:15:40,080

whole station is glowing pink and we

336

00:15:44,060 --> 00:15:41,550

grew some plants I think today butch

337

00:15:45,730 --> 00:15:44,070

harvested some plants samantha was

338

00:15:48,740 --> 00:15:45,740

working with fruit flies we had a

339

00:15:51,320 --> 00:15:48,750

experiment of fruit flies this past

340

00:15:54,530 --> 00:15:51,330

weekend I was taking these back these

341

00:15:58,670 --> 00:15:54,540

little worms called C elegans and we fed

342

00:16:01,280 --> 00:15:58,680

them some bacteria Salmonella and e-coli

343

00:16:03,290 --> 00:16:01,290

so they were happy at first to eat them

344

00:16:05,180 --> 00:16:03,300

but these are obviously things that make

345

00:16:07,670 --> 00:16:05,190

you sick so there are studying how the

346

00:16:09,860 --> 00:16:07,680

immune system on the worms are affected

347

00:16:12,170 --> 00:16:09,870

by the disease and hopefully that can

348

00:16:13,820 --> 00:16:12,180

help us out on earth so the last few

349

00:16:14,840 --> 00:16:13,830

days has been a lot of different science

350

00:16:21,920 --> 00:16:14,850

that we've been doing it's been pretty

351

00:16:25,340 --> 00:16:21,930

interesting my name is Liliana Scott and

352

00:16:28,430 --> 00:16:25,350

I am home-schooled and my question is

353

00:16:39,710 --> 00:16:28,440

what do you do for fun to pass time in

354

00:16:46,280 --> 00:16:43,579

I think most of us really enjoy taking

355

00:16:48,619 --> 00:16:46,290

pictures spending time in the cupola

356

00:16:51,679 --> 00:16:48,629

this is this magnificent window on the

357

00:16:53,569 --> 00:16:51,689

earth we have the we see the earth from

358

00:16:55,910 --> 00:16:53,579

Horizon to horizon so we actually see

359

00:16:57,259 --> 00:16:55,920

very well the curvature of the earth and

360

00:16:59,960 --> 00:16:57,269

of course we can also see the skies

361

00:17:02,809 --> 00:16:59,970

above the horizon for example yesterday

362

00:17:05,210 --> 00:17:02,819

Terry and I were hunting for a comment

363

00:17:07,699 --> 00:17:05,220

Lovejoy which is visible from Earth as

364

00:17:09,289 --> 00:17:07,709

well I think it will still be visible

365

00:17:11,329 --> 00:17:09,299

for a few weeks so you can come and hunt

366

00:17:14,620 --> 00:17:11,339

for the comment yourself so we enjoy

367

00:17:18,110 --> 00:17:14,630

doing that last night I enjoy immensely

368

00:17:20,090 --> 00:17:18,120

finding places on earth that maybe have

369

00:17:22,069 --> 00:17:20,100

a special significance or that just

370

00:17:24,590 --> 00:17:22,079

speak to me because of that geography

371

00:17:26,600 --> 00:17:24,600

and they're so interesting or you know

372

00:17:28,640 --> 00:17:26,610

most of the time is just an incredible

373

00:17:30,830 --> 00:17:28,650

beauty I mean it's it's an ever change

374

00:17:33,560 --> 00:17:30,840

ever changing colors and shapes and

375

00:17:37,250 --> 00:17:33,570

place of shade and light and the Sun

376

00:17:39,260 --> 00:17:37,260

glint and clouds and you know a desert

377

00:17:42,380 --> 00:17:39,270

and ocean and mountains and Plains and

378

00:17:44,270 --> 00:17:42,390

snow it's just an incredible infinite

379

00:17:46,279 --> 00:17:44,280

variety that no artist could possibly

380

00:17:49,779 --> 00:17:46,289

come up with and it's just very very

381

00:17:55,330 --> 00:17:49,789

beautiful what are you doing there Terry

382

00:17:58,039 --> 00:17:55,340

you and what's what you doing actually

383

00:17:59,360 --> 00:17:58,049

he said he could see you guys he's sure

384

00:18:01,299 --> 00:17:59,370

he's showing him one of the cameras we

385

00:18:03,860 --> 00:18:01,309

use for taking pictures of the earth and

386

00:18:05,270 --> 00:18:03,870

recently the lab window has been free

387

00:18:06,770 --> 00:18:05,280

we've been able to take pictures in here

388

00:18:08,630 --> 00:18:06,780

normally it's got a payload in there but

389

00:18:10,070 --> 00:18:08,640

so we've got these big giant they're

390

00:18:15,200 --> 00:18:10,080

almost telescopes here taking pictures

391

00:18:17,450 --> 00:18:15,210

of the earth my name is Katie Quinn and

392

00:18:29,250 --> 00:18:17,460

I was wondering what's the coolest thing

393

00:18:34,890 --> 00:18:33,300

you know Katie man that is hard to pick

394

00:18:36,540 --> 00:18:34,900

the number one thing because so many

395

00:18:38,310 --> 00:18:36,550

things are cool and every day it's like

396

00:18:39,840 --> 00:18:38,320

I can't believe I'm seeing this you've

397

00:18:42,020 --> 00:18:39,850

seen creation from the heavens it's

398

00:18:44,220 --> 00:18:42,030

awesome but for me I think Aurora's

399

00:18:45,540 --> 00:18:44,230

being from Maryland we don't see a lot

400

00:18:48,000 --> 00:18:45,550

of Aurora's down there around the

401
00:18:49,410 --> 00:18:48,010
nation's capital and the view you get

402
00:18:50,850 --> 00:18:49,420
from here is amazing you can see them

403
00:18:53,040 --> 00:18:50,860
with the naked eye when you see pictures

404
00:18:56,070 --> 00:18:53,050
of them they're even more magnified but

405
00:18:58,470 --> 00:18:56,080
that that is a pretty amazing thing hey

406
00:18:59,790 --> 00:18:58,480
butch Tyrion and Samantha I really want

407
00:19:01,350 --> 00:18:59,800
to thank you all for the time you gave

408
00:19:03,690 --> 00:19:01,360
us today it was absolutely incredible

409
00:19:07,260 --> 00:19:03,700
for these kids they're telling me you

410
00:19:09,690 --> 00:19:07,270
all have to go back to work so thanks

411
00:19:11,280 --> 00:19:09,700
again hopefully I will get a chance to

412
00:19:17,340 --> 00:19:11,290
talk to you again in a few days take

413
00:19:18,630 --> 00:19:17,350

care all right super thank you general

414

00:19:23,970 --> 00:19:18,640

hello to everyone you'll have a great