



What is the protocol if you encounter unnatural things in space?

1
00:00:04,200 --> 00:00:03,090
stem at the Lange middle school this is

2
00:00:12,080 --> 00:00:04,210
Mission Control Houston

3
00:00:23,750 --> 00:00:14,790
can I turn I got you loud and clear

4
00:00:28,470 --> 00:00:26,519
pretty excited we're honored to have you

5
00:00:30,450 --> 00:00:28,480
speaking here with us today and we have

6
00:00:32,519 --> 00:00:30,460
some young scientists here who are eager

7
00:00:37,350 --> 00:00:32,529
to ask you questions so with your

8
00:00:38,940 --> 00:00:37,360
permission we'll go ahead and begin that

9
00:00:40,680 --> 00:00:38,950
would be great I hope that all of you

10
00:00:49,130 --> 00:00:40,690
guys are doing well after after the

11
00:00:53,639 --> 00:00:52,020
my question is what classes majors or

12
00:00:57,119 --> 00:00:53,649
activities did you take in college that

13
00:00:59,459 --> 00:00:57,129

helped you in becoming an astronaut a

14

00:01:01,260 --> 00:00:59,469

great question because there are so many

15

00:01:02,670 --> 00:01:01,270

things that are required for this job so

16

00:01:06,210 --> 00:01:02,680

there's such a variety of things what we

17

00:01:08,760 --> 00:01:06,220

do I was at math major so I was the M in

18

00:01:10,170 --> 00:01:08,770

stem going through the signal but I was

19

00:01:12,510 --> 00:01:10,180

always fascinated with the science stuff

20

00:01:14,880 --> 00:01:12,520

to physics and chemistry how things

21

00:01:17,039 --> 00:01:14,890

worked why they worked so that was also

22

00:01:19,050 --> 00:01:17,049

very interesting and necessary part of

23

00:01:21,929 --> 00:01:19,060

my education but also going back into

24

00:01:23,520 --> 00:01:21,939

high school and other things is things

25

00:01:24,929 --> 00:01:23,530

like metal shop and wood shop where

26

00:01:26,820 --> 00:01:24,939

things were I'm physically learning how

27

00:01:28,440 --> 00:01:26,830

to use tools and how to make things and

28

00:01:30,660 --> 00:01:28,450

how to solve problems in a concrete

29

00:01:33,870 --> 00:01:30,670

sense versus just a theoretical sense

30

00:01:35,310 --> 00:01:33,880

like I was maybe during that and so the

31

00:01:36,899 --> 00:01:35,320

thing that I always loved about math was

32

00:01:39,179 --> 00:01:36,909

that it teaches you how to solve

33

00:01:41,039 --> 00:01:39,189

problems and remember one course I took

34

00:01:43,140 --> 00:01:41,049

my senior year at the city though it was

35

00:01:45,660 --> 00:01:43,150

called like complex numerical analysis I

36

00:01:47,910 --> 00:01:45,670

think the only numbers I ever saw the

37

00:01:49,530 --> 00:01:47,920

entire semester in that math class well

38

00:01:51,569 --> 00:01:49,540

the numbers of the problems now problem

39

00:01:53,550 --> 00:01:51,579

number one and there was all formulas

40

00:01:55,859 --> 00:01:53,560

and letters and all that kind of symbols

41

00:01:57,510 --> 00:01:55,869

and so what I loved about it was that

42

00:01:59,520 --> 00:01:57,520

math teaches you if you can't solve a

43

00:02:01,590 --> 00:01:59,530

problem one way you can find another way

44

00:02:03,210 --> 00:02:01,600

to solve the problem and that trait is

45

00:02:04,560 --> 00:02:03,220

one thing that is absolutely critical

46

00:02:06,210 --> 00:02:04,570

that for me as a year when I was a

47

00:02:08,009 --> 00:02:06,220

Marine Corps officer when I was a pilot

48

00:02:11,310 --> 00:02:08,019

test pilot and now certainly as an

49

00:02:16,540 --> 00:02:14,470

hello my name is Emma Reid and my

50

00:02:18,640 --> 00:02:16,550

question is what do you think the next

51
00:02:23,950 --> 00:02:18,650
big accomplishment or discovery will be

52
00:02:25,630 --> 00:02:23,960
in faith I think the next big

53
00:02:27,580 --> 00:02:25,640
accomplishment because we just had a

54
00:02:30,640 --> 00:02:27,590
really revolutionary one really recently

55
00:02:33,010 --> 00:02:30,650
we're here not one but two US companies

56
00:02:35,530 --> 00:02:33,020
take the first stage of their rocket

57
00:02:38,230 --> 00:02:35,540
launch the payload in space and return

58
00:02:40,840 --> 00:02:38,240
that rocket back to the earth where it

59
00:02:43,210 --> 00:02:40,850
can be reused very expensive part very

60
00:02:44,710 --> 00:02:43,220
big part has a lot of the engines that's

61
00:02:46,210 --> 00:02:44,720
revolutionary that's like when we

62
00:02:48,010 --> 00:02:46,220
started building airplanes you know at

63
00:02:50,440 --> 00:02:48,020

the turn of the century and then you

64

00:02:52,720 --> 00:02:50,450

know back 100 years ago so I think you

65

00:02:54,550 --> 00:02:52,730

know nowadays it's gonna be it's gonna

66

00:02:56,980 --> 00:02:54,560

be the spacecraft right now we've been

67

00:02:58,930 --> 00:02:56,990

flying here on the space station for 17

68

00:03:00,340 --> 00:02:58,940

years we've got vehicles that are coming

69

00:03:02,610 --> 00:03:00,350

to and from the space station built by

70

00:03:05,080 --> 00:03:02,620

commercial companies but this craft

71

00:03:07,150 --> 00:03:05,090

Orion spacecraft that's the ones going

72

00:03:09,660 --> 00:03:07,160

to actually go out beyond the Van Allen

73

00:03:11,790 --> 00:03:09,670

radiation belts in the protection of the

74

00:03:14,290 --> 00:03:11,800

that we have here surrounding the earth

75

00:03:16,330 --> 00:03:14,300

and so the vehicles that can go out with

76

00:03:17,860 --> 00:03:16,340

Stan the deep space and then the

77

00:03:19,810 --> 00:03:17,870

propulsion systems that will get us to

78

00:03:21,970 --> 00:03:19,820

the next planets where right now we have

79

00:03:23,050 --> 00:03:21,980

to carry all the fuel with us and once

80

00:03:24,820 --> 00:03:23,060

we burn it getting out of the atmosphere

81

00:03:26,470 --> 00:03:24,830

we don't have it to go places and so

82

00:03:28,810 --> 00:03:26,480

we're kind of limited on how far and how

83

00:03:30,250 --> 00:03:28,820

fast we can go but once we can go ahead

84

00:03:32,050 --> 00:03:30,260

and figure out how to get engines that

85

00:03:33,729 --> 00:03:32,060

can fire the whole time and fuel them

86

00:03:34,600 --> 00:03:33,739

well then we can get places a lot

87

00:03:37,180 --> 00:03:34,610

quicker and that's gonna be

88

00:03:42,340 --> 00:03:37,190

revolutionary as far as travel within

89

00:03:44,979 --> 00:03:42,350

our solar system and beyond hello my

90

00:03:48,340 --> 00:03:44,989

name is Isaiah Roper and how did the

91

00:03:51,970 --> 00:03:48,350

solar eclipse light look like from ISS

92

00:03:53,380 --> 00:03:51,980

on Monday August 21st well hopefully

93

00:03:55,120 --> 00:03:53,390

they're able to show you on the big

94

00:03:57,310 --> 00:03:55,130

screen some pictures I sent you that

95

00:04:00,070 --> 00:03:57,320

show what the solar eclipse looked like

96

00:04:02,259 --> 00:04:00,080

none of us had ever seen one from space

97

00:04:03,130 --> 00:04:02,269

and so it was pretty amazing all crammed

98

00:04:04,930 --> 00:04:03,140

up in the windows

99

00:04:06,250 --> 00:04:04,940

you know like kinda like the kids in the

100

00:04:08,290 --> 00:04:06,260

car when you first pick the Disney World

101
00:04:09,690 --> 00:04:08,300
you know to see what's there and there

102
00:04:12,119 --> 00:04:09,700
was this big

103
00:04:14,130 --> 00:04:12,129
huge shadow and it was just amazing how

104
00:04:15,630 --> 00:04:14,140
this especially was over the clouds how

105
00:04:18,300 --> 00:04:15,640
bright white the tiles were and just how

106
00:04:20,940 --> 00:04:18,310
pitch-black the clouds became underneath

107
00:04:23,070 --> 00:04:20,950
that that shadow on the ground and then

108
00:04:24,870 --> 00:04:23,080
certainly looking up at the Sun we had

109
00:04:26,159 --> 00:04:24,880
special solar glasses like everybody

110
00:04:27,719 --> 00:04:26,169
else and we had actually filters on our

111
00:04:31,740 --> 00:04:27,729
big cameras while taking pictures on the

112
00:04:34,620 --> 00:04:31,750
Sun and to see that you know the the

113
00:04:36,600 --> 00:04:34,630

sliver you know the the Sun get covered

114

00:04:38,040 --> 00:04:36,610

up by the moon and then grow back the

115

00:04:40,469 --> 00:04:38,050

other way because we actually had were

116

00:04:42,930 --> 00:04:40,479

able to look up and see the Sun on a

117

00:04:44,310 --> 00:04:42,940

couple of the passes with what I only

118

00:04:49,830 --> 00:04:44,320

had shadow on the ground through one of

119

00:04:52,140 --> 00:04:49,840

the passes hello my name is avery

120

00:04:54,300 --> 00:04:52,150

Robinson and my question for you is how

121

00:04:59,700 --> 00:04:54,310

many and which languages are used on the

122

00:05:01,860 --> 00:04:59,710

area well English is the official

123

00:05:03,120 --> 00:05:01,870

language but working over in the

124

00:05:05,430 --> 00:05:03,130

Columbus module right now we have

125

00:05:08,879 --> 00:05:05,440

following misfolding a European

126
00:05:12,030 --> 00:05:08,889
astronaut he's Italian and so he speaks

127
00:05:14,100 --> 00:05:12,040
Italian when he when he likes but

128
00:05:15,840 --> 00:05:14,110
typically English to us over on the

129
00:05:17,580 --> 00:05:15,850
Russian segment we've got two cosmonauts

130
00:05:19,440 --> 00:05:17,590
their primary language is Russian but

131
00:05:22,080 --> 00:05:19,450
they know English and so we can talk

132
00:05:23,730 --> 00:05:22,090
English here but all of us came up on

133
00:05:26,600 --> 00:05:23,740
the Russian Soyuz spacecraft so all of

134
00:05:29,310 --> 00:05:26,610
us speak Russian as well so it's funny

135
00:05:31,230 --> 00:05:29,320
especially as we try and you know

136
00:05:32,940 --> 00:05:31,240
practice each other's language you'll

137
00:05:34,290 --> 00:05:32,950
have the the Russian cosmonauts

138
00:05:35,610 --> 00:05:34,300

that's in English and they'll be trying

139

00:05:40,469 --> 00:05:35,620

to respond back to them and Russian just

140

00:05:42,900 --> 00:05:40,479

so you keep our skills up hi my name is

141

00:05:49,860 --> 00:05:42,910

Grace ray and my question is what is the

142

00:05:51,810 --> 00:05:49,870

mission of your team we've got a lot of

143

00:05:54,659 --> 00:05:51,820

things but first and foremost is this

144

00:05:57,960 --> 00:05:54,669

huge orbiting laboratory where you can

145

00:06:01,020 --> 00:05:57,970

only do things in you know zero-g or say

146

00:06:02,760 --> 00:06:01,030

microgravity is execute the science

147

00:06:04,680 --> 00:06:02,770

that's the whole whole reason it's here

148

00:06:06,330 --> 00:06:04,690

part of the science is science

149

00:06:09,080 --> 00:06:06,340

experiments that are sent up that we put

150

00:06:11,090 --> 00:06:09,090

into laboratory

151
00:06:13,250 --> 00:06:11,100
go ahead and take a look at Paul the

152
00:06:16,040 --> 00:06:13,260
science is us we're looking at the human

153
00:06:19,310 --> 00:06:16,050
bodies and how they respond to nutrition

154
00:06:21,110 --> 00:06:19,320
and food and radiation sleep all these

155
00:06:23,300 --> 00:06:21,120
different types of things so the one we

156
00:06:26,060 --> 00:06:23,310
want to go somewhere other than just

157
00:06:27,680 --> 00:06:26,070
earth and beyond low-earth orbit we know

158
00:06:29,800 --> 00:06:27,690
how the human body might respond or how

159
00:06:31,760 --> 00:06:29,810
we can protect it when we go out

160
00:06:34,580 --> 00:06:31,770
long-duration missions like I showed you

161
00:06:37,580 --> 00:06:34,590
with a better Lion spacecraft so we've

162
00:06:38,659 --> 00:06:37,590
got all kinds of science going on but we

163
00:06:41,060 --> 00:06:38,669

also have this lab that has to be

164

00:06:43,129 --> 00:06:41,070

maintained so we're here to go ahead and

165

00:06:45,620 --> 00:06:43,139

fix it repair it keep it up so it can be

166

00:06:53,420 --> 00:06:45,630

here long beyond what we thought it was

167

00:06:55,370 --> 00:06:53,430

going to be the last until hello my name

168

00:06:57,440 --> 00:06:55,380

is Bryant nawicki and my question is

169

00:07:03,650 --> 00:06:57,450

what is the protocol if you encounter

170

00:07:05,960 --> 00:07:03,660

unnatural things in space alright I'm

171

00:07:09,020 --> 00:07:05,970

not sure what you mean by a natural but

172

00:07:10,520 --> 00:07:09,030

if it's something that is not normal

173

00:07:12,260 --> 00:07:10,530

inside the space station that be

174

00:07:14,270 --> 00:07:12,270

something that because I think is

175

00:07:15,620 --> 00:07:14,280

something that we didn't plan on being

176

00:07:17,029 --> 00:07:15,630

here that's something that because we

177

00:07:18,050 --> 00:07:17,039

have to clean the station or someone's

178

00:07:19,610 --> 00:07:18,060

gotten dirty that something starts to

179

00:07:22,219 --> 00:07:19,620

grow with the bacteria or fungus or

180

00:07:24,350 --> 00:07:22,229

something like that so we don't have

181

00:07:27,589 --> 00:07:24,360

that happen because we clean the station

182

00:07:29,000 --> 00:07:27,599

every all the time and so we'd like to

183

00:07:30,830 --> 00:07:29,010

make sure that this is clean it's an

184

00:07:32,180 --> 00:07:30,840

environment because everywhere the thing

185

00:07:33,830 --> 00:07:32,190

here is what we're breathing and there's

186

00:07:35,690 --> 00:07:33,840

no you know fresh air or fresh breeze

187

00:07:37,790 --> 00:07:35,700

can't open a window to go ahead and have

188

00:07:39,080 --> 00:07:37,800

a fresh air from there now I'd be

189

00:07:40,790 --> 00:07:39,090

talking about stuff outside the space

190

00:07:43,070 --> 00:07:40,800

station like maybe you know

191

00:07:45,260 --> 00:07:43,080

extraterrestrials well that is not

192

00:07:48,020 --> 00:07:45,270

something that we have planned because

193

00:07:49,640 --> 00:07:48,030

that's something I haven't seen but I'm

194

00:07:51,290 --> 00:07:49,650

sure that you know Mission Control has

195

00:07:52,339 --> 00:07:51,300

probably thought about that and they

196

00:07:54,589 --> 00:07:52,349

might have something in their playbook

197

00:07:56,270 --> 00:07:54,599

but as far as we know if somebody comes

198

00:07:57,680 --> 00:07:56,280

knocking on the door we'll talk to

199

00:08:02,650 --> 00:07:57,690

Mission Control and get their opinion

200

00:08:08,180 --> 00:08:05,990

hello my name is Cameron 3 and my

201
00:08:10,279 --> 00:08:08,190
question is how has plant growth and

202
00:08:17,120 --> 00:08:10,289
space been a challenge and what ideas

203
00:08:24,440 --> 00:08:19,850
the question was how's it been adapting

204
00:08:25,940 --> 00:08:24,450
to gravity it's pretty amazing that you

205
00:08:27,740 --> 00:08:25,950
know it's the first time you've been in

206
00:08:30,230 --> 00:08:27,750
this situation yeah all of you have have

207
00:08:31,520 --> 00:08:30,240
been on a roller coaster or in a car

208
00:08:33,230 --> 00:08:31,530
that's going faster you go over a bump

209
00:08:36,320 --> 00:08:33,240
and you kind of float up and your body

210
00:08:37,940 --> 00:08:36,330
just you know feels loose and you know

211
00:08:40,130 --> 00:08:37,950
it's kind most of times folks will

212
00:08:41,810 --> 00:08:40,140
giggle and laugh it's the same joyful

213
00:08:43,520 --> 00:08:41,820

feeling up here in CEO gravity because

214

00:08:45,410 --> 00:08:43,530

you can do things you can't normally do

215

00:08:46,520 --> 00:08:45,420

on earth nothing you can do only

216

00:08:48,650 --> 00:08:46,530

underwater when you're holding your

217

00:08:53,000 --> 00:08:48,660

breath but to be able to just flip

218

00:08:54,530 --> 00:08:53,010

around and change your orientation it's

219

00:08:57,200 --> 00:08:54,540

really it's it's a fun thing and it's

220

00:08:59,780 --> 00:08:57,210

amazing how quickly your body adapts to

221

00:09:01,580 --> 00:08:59,790

zero gravity and thinking like it and so

222

00:09:03,950 --> 00:09:01,590

if I want to move somewhere I have to do

223

00:09:05,690 --> 00:09:03,960

just my finger over and just push and I

224

00:09:08,060 --> 00:09:05,700

start moving if I don't like what I see

225

00:09:09,830 --> 00:09:08,070

I just reach up and push and come back

226

00:09:12,410 --> 00:09:09,840

the other direction you got to push on

227

00:09:16,010 --> 00:09:12,420

solid stuff now like those wires so it's

228

00:09:17,750 --> 00:09:16,020

it's really only about two days or so I

229

00:09:19,400 --> 00:09:17,760

think to even someone who's me it's the

230

00:09:21,080 --> 00:09:19,410

first time coming here that takes them

231

00:09:21,770 --> 00:09:21,090

to adapt and to be able to move around

232

00:09:24,290 --> 00:09:21,780

pretty easily

233

00:09:25,670 --> 00:09:24,300

then it gets exciting and you feel

234

00:09:31,450 --> 00:09:25,680

adventurous and then he I worry about

235

00:09:36,020 --> 00:09:34,310

hi my name is Catherine duxford and my

236

00:09:42,500 --> 00:09:36,030

question is what was the worst part of

237

00:09:44,090 --> 00:09:42,510

your training the worst part of my

238

00:09:47,120 --> 00:09:44,100

training and I think you have a picture

239

00:09:48,770 --> 00:09:47,130

of this one two shows my my amazing wife

240

00:09:51,320 --> 00:09:48,780

Rebecca and my son Wyatt my daughter

241

00:09:53,060 --> 00:09:51,330

Abigail and my daughter seven my son

242

00:09:57,530 --> 00:09:53,070

Wyatt's 11 he's got he just started

243

00:09:58,910 --> 00:09:57,540

middle school last month and for another

244

00:10:02,300 --> 00:09:58,920

two years leading up to my flight I

245

00:10:04,280 --> 00:10:02,310

spent almost a year of that in Russia

246

00:10:06,170 --> 00:10:04,290

training for the flight for the Russian

247

00:10:07,880 --> 00:10:06,180

segment for the Soyuz spacecraft I would

248

00:10:10,730 --> 00:10:07,890

come up from Earth and then return to

249

00:10:12,500 --> 00:10:10,740

Earth on and you know just like the men

250

00:10:13,940 --> 00:10:12,510

and women of our military know it's

251
00:10:15,290 --> 00:10:13,950
tough you're doing your job you're

252
00:10:17,360 --> 00:10:15,300
serving your country whatever way that

253
00:10:20,060 --> 00:10:17,370
is but you're separated from your family

254
00:10:22,550 --> 00:10:20,070
and so for me that was the the toughest

255
00:10:24,950 --> 00:10:22,560
part is the astronaut training you know

256
00:10:27,020 --> 00:10:24,960
we got such good people training us that

257
00:10:28,800 --> 00:10:27,030
they can they can make a you know I'm

258
00:10:30,570 --> 00:10:28,810
sure to train a monkey to fly

259
00:10:32,519 --> 00:10:30,580
and so you know you're gonna stick

260
00:10:33,630 --> 00:10:32,529
monkey like myself a pilot they were

261
00:10:35,070 --> 00:10:33,640
able to get me to the point where I'm

262
00:10:37,650 --> 00:10:35,080
gonna come up here and do the science

263
00:10:44,700 --> 00:10:37,660

and do the work so that part's the

264

00:10:46,170 --> 00:10:44,710

easier side of you missing the family do

265

00:10:51,720 --> 00:10:46,180

you ever feel nostalgic about your life

266

00:10:53,130 --> 00:10:51,730

on earth I certainly do

267

00:10:54,960 --> 00:10:53,140

there there are things in your

268

00:10:57,180 --> 00:10:54,970

misleading things you miss you know

269

00:10:59,450 --> 00:10:57,190

drinking you don't have ice cubes you

270

00:11:02,250 --> 00:10:59,460

could put in your drink when you're warm

271

00:11:03,960 --> 00:11:02,260

certainly you know the smells you know

272

00:11:05,880 --> 00:11:03,970

there's one smell throughout station you

273

00:11:08,579 --> 00:11:05,890

know and you have it the whole time but

274

00:11:11,220 --> 00:11:08,589

also you miss as a human being you know

275

00:11:12,630 --> 00:11:11,230

physical interaction you know my my son

276

00:11:15,000 --> 00:11:12,640

and daughter you have great hugs and

277

00:11:16,950 --> 00:11:15,010

again I miss that I miss kissing kissing

278

00:11:18,930 --> 00:11:16,960

my wife because the three are the other

279

00:11:21,690 --> 00:11:18,940

five guys on station that just I'm sorry

280

00:11:23,400 --> 00:11:21,700

it doesn't cut it so you appreciate

281

00:11:24,750 --> 00:11:23,410

their camaraderie as crewmates but

282

00:11:26,370 --> 00:11:24,760

that's the kind of stuff you can't get

283

00:11:27,930 --> 00:11:26,380

from them and that's certainly the stuff

284

00:11:30,630 --> 00:11:27,940

you sit there and you know we look

285

00:11:31,829 --> 00:11:30,640

forward to when the time would come time

286

00:11:33,510 --> 00:11:31,839

to come home that those are the things

287

00:11:45,000 --> 00:11:33,520

that you will be looking forward to the

288

00:11:48,329 --> 00:11:45,010

most well I mentioned their science and

289

00:11:52,110 --> 00:11:48,339

so there's jobs that we can do all over

290

00:11:54,660 --> 00:11:52,120

space station everyday that's the

291

00:11:55,950 --> 00:11:54,670

science part of our jobs we have jobs

292

00:11:59,010 --> 00:11:55,960

where we go ahead and repair things

293

00:12:00,630 --> 00:11:59,020

right now Paulo's fixing a light that

294

00:12:02,490 --> 00:12:00,640

will take out on a camera and put on the

295

00:12:06,600 --> 00:12:02,500

outside of space station on a spacewalk

296

00:12:08,070 --> 00:12:06,610

on the 10th of October Joe acaba and

297

00:12:09,750 --> 00:12:08,080

Mark VandeHei are down there in the

298

00:12:12,180 --> 00:12:09,760

airlock preparing our spacesuits for the

299

00:12:13,500 --> 00:12:12,190

spacewalk this Thursday and getting

300

00:12:16,230 --> 00:12:13,510

batteries charged and getting the suits

301
00:12:17,490 --> 00:12:16,240
ready we also have two and a half hours

302
00:12:20,280 --> 00:12:17,500
every day well we need to get on our

303
00:12:22,530 --> 00:12:20,290
exercise bicycle exercise treadmill or

304
00:12:23,760 --> 00:12:22,540
we're actually doing resistive exercise

305
00:12:25,680 --> 00:12:23,770
it's basically space equivalent of

306
00:12:27,540 --> 00:12:25,690
lifting weights to keep our bodies in

307
00:12:30,060 --> 00:12:27,550
shape so we don't lose our muscles so we

308
00:12:32,310 --> 00:12:30,070
don't lose our bone density

309
00:12:34,800 --> 00:12:32,320
I mentioned cleaning is one of our tasks

310
00:12:37,020 --> 00:12:34,810
and then the other part is talking to

311
00:12:39,540 --> 00:12:37,030
you guys we've got this great orbital

312
00:12:40,890 --> 00:12:39,550
laboratory amazing you know National

313
00:12:42,810 --> 00:12:40,900

Laboratory that we have to do all the

314

00:12:45,120 --> 00:12:42,820

sides we have people up here living

315

00:12:48,330 --> 00:12:45,130

continuously for 17 years and guess what

316

00:12:50,640 --> 00:12:48,340

we need people beyond us to do this job

317

00:12:52,740 --> 00:12:50,650

and take us beyond space station that's

318

00:12:54,990 --> 00:12:52,750

you guys in school you guys studying

319

00:12:56,460 --> 00:12:55,000

looking at all these neat you know

320

00:12:58,080 --> 00:12:56,470

things in stem that allow you to figure

321

00:12:59,730 --> 00:12:58,090

out how to make things or engineer

322

00:13:01,170 --> 00:12:59,740

things or build things or create things

323

00:13:03,450 --> 00:13:01,180

or think of things that have never been

324

00:13:04,890 --> 00:13:03,460

made that's you guys and then you guys

325

00:13:10,560 --> 00:13:04,900

are gonna be the astronauts to take us

326

00:13:11,850 --> 00:13:10,570

over to Mars or beyond hello again my

327

00:13:17,510 --> 00:13:11,860

next question is what are the

328

00:13:22,410 --> 00:13:21,000

well certainly we've touched on it a

329

00:13:24,260 --> 00:13:22,420

little bit with guillain you miss your

330

00:13:26,330 --> 00:13:24,270

family you miss your some of the

331

00:13:29,880 --> 00:13:26,340

physical interaction that you have with

332

00:13:31,560 --> 00:13:29,890

people yeah I want to see you really get

333

00:13:33,840 --> 00:13:31,570

lonely because you got crewmates up here

334

00:13:36,300 --> 00:13:33,850

and you're able to talk with them so you

335

00:13:38,730 --> 00:13:36,310

have human to human contact we also have

336

00:13:40,200 --> 00:13:38,740

really great technologies allow us to go

337

00:13:42,810 --> 00:13:40,210

to our computers er Nate Internet

338

00:13:44,430 --> 00:13:42,820

Protocol phone and call down and talk to

339

00:13:45,720 --> 00:13:44,440

anybody you want all over the world and

340

00:13:48,870 --> 00:13:45,730

you know anytime we have satellite

341

00:13:50,520 --> 00:13:48,880

coverage that is a huge huge thing that

342

00:13:52,410 --> 00:13:50,530

it may allows us to be much more

343

00:13:55,380 --> 00:13:52,420

connected to the earth than the space

344

00:13:56,850 --> 00:13:55,390

Flyers had you know even you know 78

345

00:13:58,290 --> 00:13:56,860

years ago and certainly before that we

346

00:14:00,840 --> 00:13:58,300

could only talk to people on the radio

347

00:14:03,930 --> 00:14:00,850

so that really helps we've got email

348

00:14:06,570 --> 00:14:03,940

we've gotten you know TV that's sent up

349

00:14:09,390 --> 00:14:06,580

we've got other things up to that allow

350

00:14:12,690 --> 00:14:09,400

us to try and keep somewhat of a normal

351

00:14:15,330 --> 00:14:12,700

or earth-based day or psychiatric

352

00:14:17,160 --> 00:14:15,340

condition available but we also have

353

00:14:19,680 --> 00:14:17,170

great you know doctors and we got

354

00:14:21,840 --> 00:14:19,690

psychiatrists and psychologists that are

355

00:14:24,570 --> 00:14:21,850

assigned to us that help us prepare for

356

00:14:27,180 --> 00:14:24,580

the flight they help us you know talk to

357

00:14:28,800 --> 00:14:27,190

us every week to make sure that hey

358

00:14:30,480 --> 00:14:28,810

what's going on how can we help you know

359

00:14:31,950 --> 00:14:30,490

and so we've got people that are the

360

00:14:35,490 --> 00:14:31,960

kinds of people that are helping us out

361

00:14:37,350 --> 00:14:35,500

so we don't end up having issues and if

362

00:14:39,210 --> 00:14:37,360

I dish you comes up we're able to fix it

363

00:14:40,530 --> 00:14:39,220

they also take care of our families so

364

00:14:43,800 --> 00:14:40,540

it really

365

00:14:45,260 --> 00:14:43,810

a good program we have is supports the

366

00:14:48,540 --> 00:14:45,270

crew members up there so we do not have

367

00:14:50,250 --> 00:14:48,550

psychiatric effects the the biggest

368

00:14:52,080 --> 00:14:50,260

effect is once you get into this

369

00:14:54,690 --> 00:14:52,090

environment - the first time is being

370

00:14:56,700 --> 00:14:54,700

able to absorb it and then after that

371

00:14:57,060 --> 00:14:56,710

you absorb it and move around and all

372

00:14:58,440 --> 00:14:57,070

that

373

00:15:00,900 --> 00:14:58,450

it's then trying to be able to take this

374

00:15:02,880 --> 00:15:00,910

amazing experience and translate it into

375

00:15:05,340 --> 00:15:02,890

words to share it with you guys

376

00:15:07,230 --> 00:15:05,350

because so far we've only had you know

377

00:15:09,450 --> 00:15:07,240

507 human beings that have ever been

378

00:15:12,060 --> 00:15:09,460

able to get into space and hopefully

379

00:15:15,030 --> 00:15:12,070

that will change in the future but until

380

00:15:17,790 --> 00:15:15,040

then it's our you know a requirement of

381

00:15:18,960 --> 00:15:17,800

ours and our honor and privilege to be

382

00:15:22,250 --> 00:15:18,970

able to share that with you guys so you

383

00:15:25,680 --> 00:15:24,300

commander this is Jarrett Turnage again

384

00:15:27,780 --> 00:15:25,690

we want to thank you for spending your

385

00:15:28,890 --> 00:15:27,790

time with us today and before you leave

386

00:15:30,900 --> 00:15:28,900

I wanted to give you a big shout out

387

00:15:31,800 --> 00:15:30,910

from bang company we're all thinking

388

00:15:33,840 --> 00:15:31,810

about you and we're all proud of you

389

00:15:35,460 --> 00:15:33,850

we'll be following your upcoming

390

00:15:36,870 --> 00:15:35,470

spacewalks and your work on the

391

00:15:42,930 --> 00:15:36,880

international space station until your

392

00:15:44,730 --> 00:15:42,940

safe return Thank You veterans thank you

393

00:15:46,590 --> 00:15:44,740

laying middle school it was great to see

394

00:15:49,890 --> 00:15:46,600

you I hope that you learned something

395

00:15:51,210 --> 00:15:49,900

and that all the stem things that the

396

00:15:52,530 --> 00:15:51,220

signal is T is talking to you about

397

00:15:54,480 --> 00:15:52,540

these are things that interest you

398

00:15:56,100 --> 00:15:54,490

figure out how things work how to make

399

00:15:57,330 --> 00:15:56,110

things that haven't been done and you'll

400

00:15:59,850 --> 00:15:57,340

be the ones that will taken us further

401
00:16:01,320 --> 00:15:59,860
into space than we are right now so good

402
00:16:08,040 --> 00:16:01,330
luck and enjoy the rest of your school

403
00:16:11,700 --> 00:16:08,050
year station this is Houston ACR that

404
00:16:13,800 --> 00:16:11,710
concludes the even thank you to all

405
00:16:15,480 --> 00:16:13,810
participants from the Citadel stem at

406
00:16:17,160 --> 00:16:15,490
the Lange middle school station we're