



1
00:00:06,150 --> 00:00:02,389
station this is houston are you ready

2
00:00:06,160 --> 00:00:10,470
we're ready for the event

3
00:00:14,629 --> 00:00:12,310
clay center for the arts and sciences

4
00:00:17,430 --> 00:00:14,639
this is mission control houston please

5
00:00:21,189 --> 00:00:17,440
call station for a voice check

6
00:00:22,950 --> 00:00:21,199
station this is brian hughes at wow k 13

7
00:00:25,750 --> 00:00:22,960
storm tracker meteorologist here with

8
00:00:29,589 --> 00:00:25,760
senator joe manchin and students how do

9
00:00:35,430 --> 00:00:32,150
we have you loud and clear good good to

10
00:00:37,030 --> 00:00:35,440
have you guys on board the station

11
00:00:39,350 --> 00:00:37,040
senator manchin

12
00:00:41,510 --> 00:00:39,360
uh commander shane kimbrough and dr

13
00:00:42,709 --> 00:00:41,520

peggy whiston uh hello from the mountain

14

00:00:45,190 --> 00:00:42,719

the great mountain state of west

15

00:00:46,549 --> 00:00:45,200

virginia i'm senator joe manchin i have

16

00:00:48,549 --> 00:00:46,559

the true honor and pleasure of

17

00:00:49,990 --> 00:00:48,559

representing this wonderful state and

18

00:00:52,310 --> 00:00:50,000

we're here at the beautiful clay center

19

00:00:54,869 --> 00:00:52,320

with approximately 500 students from

20

00:00:56,630 --> 00:00:54,879

around our state with thousands watching

21

00:00:59,110 --> 00:00:56,640

in on skype right now and we're so

22

00:01:00,869 --> 00:00:59,120

excited about this we are proud to be

23

00:01:02,950 --> 00:01:00,879

americans we're proud to be west

24

00:01:05,030 --> 00:01:02,960

virginians but we're more proud of you

25

00:01:07,109 --> 00:01:05,040

two right now for being part of this and

26

00:01:09,109 --> 00:01:07,119

allowing us to be part of that with you

27

00:01:10,870 --> 00:01:09,119

i have some really outstanding students

28

00:01:15,190 --> 00:01:10,880

who have some great questions and we're

29

00:01:20,070 --> 00:01:17,590

and our first question comes from alexis

30

00:01:23,190 --> 00:01:20,080

jenkins of south charleston high school

31

00:01:25,270 --> 00:01:23,200

hi my question is for peggy

32

00:01:30,550 --> 00:01:25,280

what did you wish to gain personally and

33

00:01:35,590 --> 00:01:33,350

well scientifically this uh increment we

34

00:01:38,149 --> 00:01:35,600

have over 200 investigations that we're

35

00:01:39,749 --> 00:01:38,159

working on almost actually 300

36

00:01:42,870 --> 00:01:39,759

and so there's lots of different

37

00:01:45,749 --> 00:01:42,880

scientific objectives and my goals from

38

00:01:47,670 --> 00:01:45,759

my perspective is to get as much of that

39

00:01:49,590 --> 00:01:47,680

done as possible

40

00:01:51,590 --> 00:01:49,600

i always think of us as being the hands

41

00:01:53,270 --> 00:01:51,600

of all the scientists on the ground who

42

00:01:55,830 --> 00:01:53,280

proposed and developed all these

43

00:01:57,190 --> 00:01:55,840

investigations to be up here

44

00:01:59,350 --> 00:01:57,200

personally

45

00:02:00,630 --> 00:01:59,360

it's just a great opportunity to

46

00:02:02,789 --> 00:02:00,640

contribute

47

00:02:06,069 --> 00:02:02,799

i have never had another job or another

48

00:02:08,550 --> 00:02:06,079

part of my job that has made me

49

00:02:10,469 --> 00:02:08,560

so personally satisfied and makes me

50

00:02:14,150 --> 00:02:10,479

feel like i'm contributing directly to

51
00:02:15,670 --> 00:02:14,160
the space flight and exploration

52
00:02:21,430 --> 00:02:15,680
thank you

53
00:02:25,030 --> 00:02:21,440
polka middle school anthony

54
00:02:29,510 --> 00:02:25,040
hello this question is for shane

55
00:02:37,750 --> 00:02:32,150
how is it living together

56
00:02:40,550 --> 00:02:39,270
well very good question we are in kind

57
00:02:42,070 --> 00:02:40,560
of small quarters but it's probably

58
00:02:45,350 --> 00:02:42,080
bigger than you think it's kind of like

59
00:02:46,949 --> 00:02:45,360
the volume of a big house on earth uh so

60
00:02:49,430 --> 00:02:46,959
we just can't go outside every day so

61
00:02:50,710 --> 00:02:49,440
we're all kind of inside all the time

62
00:02:52,790 --> 00:02:50,720
so we have to make sure we're not

63
00:02:54,229 --> 00:02:52,800

getting on each other's nerves

64

00:02:56,550 --> 00:02:54,239

we have to you know take each other's

65

00:02:58,630 --> 00:02:56,560

considerations into account no matter

66

00:03:00,309 --> 00:02:58,640

what we're doing and it's just actually

67

00:03:01,509 --> 00:03:00,319

great people skills that we've learned

68

00:03:03,589 --> 00:03:01,519

in our training

69

00:03:05,030 --> 00:03:03,599

throughout our life to get to this point

70

00:03:09,830 --> 00:03:05,040

and we're using all those up here in

71

00:03:16,830 --> 00:03:12,949

thank you very much next up our question

72

00:03:18,390 --> 00:03:16,840

comes from kyle casto of hurricane high

73

00:03:20,309 --> 00:03:18,400

school

74

00:03:22,149 --> 00:03:20,319

hey guys um

75

00:03:24,869 --> 00:03:22,159

first off i just want to say you guys

76
00:03:25,670 --> 00:03:24,879
are both awesome and i'm so envious of

77
00:03:28,550 --> 00:03:25,680
you

78
00:03:30,869 --> 00:03:28,560
my question is for peggy and it's what

79
00:03:33,670 --> 00:03:30,879
precautions are in place to prevent the

80
00:03:36,390 --> 00:03:33,680
introduction of pathogens on the iss and

81
00:03:42,149 --> 00:03:36,400
do iss astronauts ever face illnesses

82
00:03:48,309 --> 00:03:44,789
well actually we do take precautions to

83
00:03:51,430 --> 00:03:48,319
not introduce pathogens on board

84
00:03:53,589 --> 00:03:51,440
two weeks or so before we launch uh

85
00:03:56,149 --> 00:03:53,599
from whatever space pad whether it's in

86
00:03:58,869 --> 00:03:56,159
the united states or in

87
00:04:01,350 --> 00:03:58,879
russia or kazakhstan we start a

88
00:04:03,030 --> 00:04:01,360

quarantine period where we limit access

89

00:04:05,190 --> 00:04:03,040

to the number of people that we're

90

00:04:07,750 --> 00:04:05,200

exposed to and that's to try and reduce

91

00:04:10,070 --> 00:04:07,760

the potential for being exposed to a

92

00:04:11,750 --> 00:04:10,080

pathogen and then carrying it up here to

93

00:04:13,270 --> 00:04:11,760

the space station

94

00:04:15,589 --> 00:04:13,280

um but

95

00:04:17,590 --> 00:04:15,599

there are other illnesses or diseases

96

00:04:19,670 --> 00:04:17,600

that we could get uh while we're up here

97

00:04:21,550 --> 00:04:19,680

that aren't pathogen related and one

98

00:04:23,749 --> 00:04:21,560

that we worry about because of the bone

99

00:04:25,749 --> 00:04:23,759

demineralization process is actually

100

00:04:28,710 --> 00:04:25,759

kidney stone formation

101

00:04:30,469 --> 00:04:28,720

so that would cause us to end the

102

00:04:32,310 --> 00:04:30,479

mission early if somebody formed a

103

00:04:34,710 --> 00:04:32,320

kidney stone because it's extremely

104

00:04:37,189 --> 00:04:34,720

painful and if the crew member weren't

105

00:04:38,310 --> 00:04:37,199

able to pass a kidney stone then

106

00:04:39,990 --> 00:04:38,320

it would be

107

00:04:42,070 --> 00:04:40,000

unbearable for them and we'd have to

108

00:04:43,189 --> 00:04:42,080

return early so there are things that

109

00:04:45,670 --> 00:04:43,199

could happen

110

00:04:48,629 --> 00:04:45,680

that could cause us to have a medical

111

00:04:50,950 --> 00:04:48,639

emergency and return early

112

00:04:52,550 --> 00:04:50,960

awesome answer thank you guys wow who

113

00:04:54,950 --> 00:04:52,560

knew next up

114

00:04:57,670 --> 00:04:54,960

kyra moore campbell midland high school

115

00:04:59,909 --> 00:04:57,680

hi um my question is for shane and it's

116

00:05:01,830 --> 00:04:59,919

what was the biggest hardship you had to

117

00:05:06,950 --> 00:05:01,840

face on your journey to becoming an

118

00:05:10,790 --> 00:05:08,710

wow there's a lot of i don't know

119

00:05:12,469 --> 00:05:10,800

hardship's the right word or obstacles

120

00:05:14,070 --> 00:05:12,479

or challenges that get put in front of

121

00:05:16,390 --> 00:05:14,080

everybody as you guys see as you go out

122

00:05:17,590 --> 00:05:16,400

into the real world here in a few years

123

00:05:19,350 --> 00:05:17,600

you're going to have things that get in

124

00:05:20,950 --> 00:05:19,360

your way so i kind of looked at those

125

00:05:23,590 --> 00:05:20,960

and i look at them now especially when

126
00:05:25,749 --> 00:05:23,600
they're behind me as as opportunities

127
00:05:27,189 --> 00:05:25,759
and things that i can do to grow from

128
00:05:29,830 --> 00:05:27,199
and learn from

129
00:05:32,629 --> 00:05:29,840
and i developed as a person um as an

130
00:05:34,469 --> 00:05:32,639
officer in the army and as an astronaut

131
00:05:36,310 --> 00:05:34,479
by overcoming some of these hurdles a

132
00:05:39,270 --> 00:05:36,320
lot of the way the way i looked at these

133
00:05:40,870 --> 00:05:39,280
problems were with the problem um

134
00:05:42,710 --> 00:05:40,880
solving skills that i had for my

135
00:05:45,670 --> 00:05:42,720
education as well as the being in the

136
00:05:47,590 --> 00:05:45,680
army and kind of use those techniques um

137
00:05:49,590 --> 00:05:47,600
to help me kind of get through that

138
00:05:51,270 --> 00:05:49,600

hurdle or that obstacle and then

139

00:05:53,270 --> 00:05:51,280

eventually i just was lucky enough to

140

00:05:54,710 --> 00:05:53,280

become an astronaut

141

00:05:58,550 --> 00:05:54,720

thank you

142

00:06:01,430 --> 00:05:58,560

be will chaddon from george w high

143

00:06:03,029 --> 00:06:01,440

school hi this question is for peggy

144

00:06:05,270 --> 00:06:03,039

we know that you've conducted research

145

00:06:06,390 --> 00:06:05,280

on how lighting on board the iss affects

146

00:06:08,070 --> 00:06:06,400

crew members

147

00:06:09,670 --> 00:06:08,080

are you able to feel a physical effect

148

00:06:11,110 --> 00:06:09,680

when the lighting changes and how can

149

00:06:14,950 --> 00:06:11,120

this research be applied to life on

150

00:06:18,830 --> 00:06:16,550

well actually that's a fantastic

151
00:06:20,790 --> 00:06:18,840
question we have these new lights up on

152
00:06:22,309 --> 00:06:20,800
board and they're

153
00:06:25,029 --> 00:06:22,319
the first place we put them was in our

154
00:06:26,469 --> 00:06:25,039
crew quarters and so the it has uh

155
00:06:27,909 --> 00:06:26,479
different frequencies with different

156
00:06:29,909 --> 00:06:27,919
wavelengths of light

157
00:06:31,670 --> 00:06:29,919
that are uh primarily used in the

158
00:06:33,110 --> 00:06:31,680
morning the blue wavelengths and that

159
00:06:35,590 --> 00:06:33,120
versus the

160
00:06:37,909 --> 00:06:35,600
yellow wavelengths in the evening and it

161
00:06:40,150 --> 00:06:37,919
actually will help you shift earlier so

162
00:06:42,629 --> 00:06:40,160
if we have if our sleep schedule has to

163
00:06:44,790 --> 00:06:42,639

change up here we can we can modify and

164

00:06:46,469 --> 00:06:44,800

use those lights to help us adapt more

165

00:06:48,710 --> 00:06:46,479

quickly

166

00:06:51,189 --> 00:06:48,720

this kind of technology is actually used

167

00:06:51,990 --> 00:06:51,199

on the ground for people with insomnia

168

00:06:53,430 --> 00:06:52,000

or

169

00:06:55,749 --> 00:06:53,440

uh also

170

00:06:58,390 --> 00:06:55,759

shift workers and so we're just trying

171

00:07:00,150 --> 00:06:58,400

to apply that up here i think even you

172

00:07:02,309 --> 00:07:00,160

know especially when we start going on

173

00:07:04,469 --> 00:07:02,319

exploration missions having that

174

00:07:08,790 --> 00:07:04,479

lighting change during the day will help

175

00:07:10,309 --> 00:07:08,800

us uh stay adapted uh to a 24 each hour

176

00:07:11,430 --> 00:07:10,319

time frame

177

00:07:16,070 --> 00:07:11,440

thank you

178

00:07:18,469 --> 00:07:16,080

up is going to be laura mangold of

179

00:07:21,350 --> 00:07:18,479

nicholas county high school hi

180

00:07:23,110 --> 00:07:21,360

um this is for shane and

181

00:07:28,150 --> 00:07:23,120

what is communicating with your family

182

00:07:31,909 --> 00:07:30,150

well we're very lucky actually uh we can

183

00:07:33,670 --> 00:07:31,919

talk on the phone pretty much every day

184

00:07:35,350 --> 00:07:33,680

i do with my family

185

00:07:36,870 --> 00:07:35,360

we have once a week we have a video

186

00:07:38,870 --> 00:07:36,880

conference with them as well so that's

187

00:07:40,790 --> 00:07:38,880

always great to be able to see them and

188

00:07:42,309 --> 00:07:40,800

catch up with them we have email of

189

00:07:43,909 --> 00:07:42,319

course

190

00:07:45,830 --> 00:07:43,919

so we're kind of lucky i think in a way

191

00:07:47,430 --> 00:07:45,840

to have all those resources available to

192

00:07:49,350 --> 00:07:47,440

us to be able to chat with our families

193

00:07:51,110 --> 00:07:49,360

daily

194

00:07:53,029 --> 00:07:51,120

awesome thank you

195

00:07:55,830 --> 00:07:53,039

thank you very much next up madeline

196

00:07:58,469 --> 00:07:55,840

turley of south charleston high

197

00:07:59,830 --> 00:07:58,479

hi this question is for peggy

198

00:08:03,670 --> 00:07:59,840

what

199

00:08:08,629 --> 00:08:03,680

young woman wanting to pursue a career

200

00:08:12,390 --> 00:08:10,309

i think probably the most important

201

00:08:14,309 --> 00:08:12,400

advice i can give you is pick a field

202

00:08:16,070 --> 00:08:14,319

that really interests you then

203

00:08:18,230 --> 00:08:16,080

that gives you some drive and some

204

00:08:20,950 --> 00:08:18,240

passion and pursue it with all your

205

00:08:22,390 --> 00:08:20,960

heart and you will be successful that

206

00:08:23,830 --> 00:08:22,400

way

207

00:08:25,830 --> 00:08:23,840

thank you so much

208

00:08:27,749 --> 00:08:25,840

thank you next up brian brockman of

209

00:08:29,589 --> 00:08:27,759

south charleston high school will ask

210

00:08:33,029 --> 00:08:29,599

two questions here

211

00:08:34,230 --> 00:08:33,039

uh hi the first question is for

212

00:08:36,310 --> 00:08:34,240

shane

213

00:08:41,829 --> 00:08:36,320

what is the most difficult daily task

214

00:08:44,790 --> 00:08:43,430

great question i think it the answer

215

00:08:46,550 --> 00:08:44,800

might surprise you but i think the most

216

00:08:48,310 --> 00:08:46,560

difficult thing we do every day is just

217

00:08:49,990 --> 00:08:48,320

finding things

218

00:08:51,670 --> 00:08:50,000

we have a lot of activities on our

219

00:08:53,190 --> 00:08:51,680

schedule every day that are driven by

220

00:08:55,509 --> 00:08:53,200

the mission control centers around the

221

00:08:57,269 --> 00:08:55,519

world and all those activities require

222

00:08:59,590 --> 00:08:57,279

getting tools and getting pieces of

223

00:09:02,230 --> 00:08:59,600

hardware and just getting stuff from all

224

00:09:04,230 --> 00:09:02,240

over this this massive space station so

225

00:09:06,070 --> 00:09:04,240

to me the most difficult thing daily is

226

00:09:08,389 --> 00:09:06,080

just finding all the things you need to

227

00:09:09,750 --> 00:09:08,399

do your daily tasks

228

00:09:12,230 --> 00:09:09,760

thank you

229

00:09:14,470 --> 00:09:12,240

the second question is for peggy

230

00:09:18,949 --> 00:09:14,480

if there's a fire on the iss what is the

231

00:09:23,590 --> 00:09:21,110

well the most important thing we have to

232

00:09:25,990 --> 00:09:23,600

worry about is making sure that ensuring

233

00:09:27,590 --> 00:09:26,000

our own safety so if we see the fire

234

00:09:29,670 --> 00:09:27,600

we're going to don an emergency

235

00:09:31,750 --> 00:09:29,680

breathing mask and make sure that we get

236

00:09:33,509 --> 00:09:31,760

on the right side of the fire so that

237

00:09:35,910 --> 00:09:33,519

we're closest to

238

00:09:37,910 --> 00:09:35,920

our emergency egress vehicle in case

239

00:09:39,829 --> 00:09:37,920

things got out of control

240

00:09:42,310 --> 00:09:39,839

and then after that we're going to fight

241

00:09:44,710 --> 00:09:42,320

the fire we're going to remove power to

242

00:09:46,790 --> 00:09:44,720

try and reduce the potential for a fire

243

00:09:48,829 --> 00:09:46,800

and we can use fire extinguishers we

244

00:09:51,829 --> 00:09:48,839

have two different types some

245

00:09:53,750 --> 00:09:51,839

use carbon dioxide to suffocate a fire

246

00:09:55,910 --> 00:09:53,760

if it were behind one of these racks and

247

00:09:57,590 --> 00:09:55,920

panels we could stick a

248

00:10:01,190 --> 00:09:57,600

fire extinguisher in there and and

249

00:10:03,030 --> 00:10:01,200

suffocate it by removing the oxygen

250

00:10:05,030 --> 00:10:03,040

and the other type of fire that we might

251
00:10:06,790 --> 00:10:05,040
have is with we have tons of laptops and

252
00:10:09,269 --> 00:10:06,800
things around so if there were a battery

253
00:10:12,230 --> 00:10:09,279
or an open cabin fire we would use a

254
00:10:14,310 --> 00:10:12,240
water mist uh fire extinguisher

255
00:10:15,670 --> 00:10:14,320
um so it's it's not all that different

256
00:10:17,750 --> 00:10:15,680
than what you would do on the ground we

257
00:10:20,150 --> 00:10:17,760
do think about the power removing the

258
00:10:21,750 --> 00:10:20,160
power source because that is going to be

259
00:10:24,389 --> 00:10:21,760
the primary

260
00:10:26,389 --> 00:10:24,399
reason we would have a fire

261
00:10:28,389 --> 00:10:26,399
thank you all so much thank you brian he

262
00:10:29,990 --> 00:10:28,399
was there he also has two questions

263
00:10:31,509 --> 00:10:30,000

because uh preston high school could not

264

00:10:33,509 --> 00:10:31,519

be here today so that's why that

265

00:10:35,829 --> 00:10:33,519

happened next up hattie sargent from

266

00:10:38,630 --> 00:10:35,839

hurricane high school hi my question is

267

00:10:40,310 --> 00:10:38,640

for shane has your time on the iss

268

00:10:42,310 --> 00:10:40,320

caused you to consider or rule out

269

00:10:46,790 --> 00:10:42,320

longer missions in the future such as

270

00:10:50,710 --> 00:10:48,230

well i think we'll be going to mars

271

00:10:52,470 --> 00:10:50,720

maybe in about 15 to 20 years i think if

272

00:10:54,389 --> 00:10:52,480

we're lucky so by that time i'm going to

273

00:10:55,910 --> 00:10:54,399

be too old to be doing this but it's

274

00:10:57,590 --> 00:10:55,920

your generation really that's going to

275

00:10:59,910 --> 00:10:57,600

be the ones going to mars and taking

276

00:11:01,509 --> 00:10:59,920

these really long missions so i hope you

277

00:11:03,990 --> 00:11:01,519

guys are ready you guys are going to be

278

00:11:07,590 --> 00:11:04,000

the ones that are going to take us there

279

00:11:11,910 --> 00:11:09,350

next up is maya rowe of george

280

00:11:14,630 --> 00:11:11,920

washington high school hi this question

281

00:11:17,670 --> 00:11:14,640

is for peggy you have a place in history

282

00:11:19,509 --> 00:11:17,680

as the first female commander of the iss

283

00:11:21,829 --> 00:11:19,519

what challenges have you faced as a

284

00:11:24,069 --> 00:11:21,839

woman in a nasa career and do you

285

00:11:26,069 --> 00:11:24,079

believe you have contributed to this

286

00:11:30,630 --> 00:11:26,079

trend of more women going into stem

287

00:11:34,550 --> 00:11:32,310

it's kind of hard to believe that me

288

00:11:36,550 --> 00:11:34,560

personally would have contributed to

289

00:11:38,230 --> 00:11:36,560

more women going into the stem fields i

290

00:11:40,470 --> 00:11:38,240

think it's just the fact that there are

291

00:11:42,949 --> 00:11:40,480

more and more women out there every day

292

00:11:45,110 --> 00:11:42,959

doing these types of jobs and the more

293

00:11:46,870 --> 00:11:45,120

young people that see that they believe

294

00:11:48,470 --> 00:11:46,880

they can also do those jobs i mean the

295

00:11:51,030 --> 00:11:48,480

same was true for me

296

00:11:53,509 --> 00:11:51,040

uh you know i became inspired to become

297

00:11:55,590 --> 00:11:53,519

an astronaut when i saw

298

00:11:58,069 --> 00:11:55,600

after the first female astronauts were

299

00:12:00,069 --> 00:11:58,079

selected so that was when i graduated

300

00:12:01,990 --> 00:12:00,079

from high school and so it made a big

301

00:12:04,389 --> 00:12:02,000

impact on me made me feel like it was

302

00:12:07,350 --> 00:12:04,399

possible and i think the important

303

00:12:10,470 --> 00:12:07,360

advice that i give to young people is

304

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

pursue your dreams pursue your goals and

305

00:12:13,990 --> 00:12:12,480

you know make an extra effort to make it

306

00:12:16,629 --> 00:12:14,000

happen nothing's going to be handed to

307

00:12:19,269 --> 00:12:16,639

you on a silver platter unfortunately so

308

00:12:21,269 --> 00:12:19,279

make it happen and make do the extra

309

00:12:24,470 --> 00:12:21,279

work to do that

310

00:12:27,030 --> 00:12:24,480

thank you thank you very much next up is

311

00:12:29,350 --> 00:12:27,040

jada smith of polka middle school

312

00:12:31,350 --> 00:12:29,360

hi my question's for shane

313

00:12:36,230 --> 00:12:31,360

what is one thing on earth that you miss

314

00:12:39,910 --> 00:12:37,990

well for me it's my family i think it is

315

00:12:41,430 --> 00:12:39,920

for most of us there's all there's

316

00:12:43,670 --> 00:12:41,440

there's types of foods and things that

317

00:12:45,350 --> 00:12:43,680

you also miss but in general it's my

318

00:12:47,750 --> 00:12:45,360

family and friends and just hanging out

319

00:12:51,829 --> 00:12:49,910

thank you thank you next up kendall

320

00:12:53,750 --> 00:12:51,839

bostick will ask two questions first one

321

00:12:56,150 --> 00:12:53,760

was from preston high school

322

00:12:58,150 --> 00:12:56,160

hi my first question is for peggy are

323

00:12:59,990 --> 00:12:58,160

you required to undergo physical slash

324

00:13:03,750 --> 00:13:00,000

mental rehabilitation once you return to

325

00:13:09,350 --> 00:13:06,389

we actually have 45 days of physical

326

00:13:12,150 --> 00:13:09,360

rehabilitation when we get home it's uh

327

00:13:14,710 --> 00:13:12,160

to help us gain back those muscles that

328

00:13:17,509 --> 00:13:14,720

we don't use as much up here everything

329

00:13:19,269 --> 00:13:17,519

that we do here is so easy our motions

330

00:13:23,190 --> 00:13:19,279

it just doesn't take much to push off

331

00:13:24,470 --> 00:13:23,200

and move away from a wall and so uh

332

00:13:26,230 --> 00:13:24,480

we have to get

333

00:13:28,949 --> 00:13:26,240

although we maintain our strength by

334

00:13:31,190 --> 00:13:28,959

doing our exercise on the up here we

335

00:13:33,110 --> 00:13:31,200

exercise almost two hours a day there

336

00:13:34,949 --> 00:13:33,120

are lots of muscles that we're not using

337

00:13:37,990 --> 00:13:34,959

exactly the same way that we do on the

338

00:13:41,670 --> 00:13:38,000

ground and so it takes about 45 days to

339

00:13:44,069 --> 00:13:41,680

get all that those uh sensors back and

340

00:13:45,590 --> 00:13:44,079

then in terms of mental rehabilitation i

341

00:13:47,110 --> 00:13:45,600

don't know if there's any of that but my

342

00:13:50,550 --> 00:13:47,120

husband might want me to put me in

343

00:13:53,750 --> 00:13:51,670

oh thank you

344

00:13:55,750 --> 00:13:53,760

my second question is for shane

345

00:13:57,590 --> 00:13:55,760

what aspect of your work on the iss is

346

00:14:02,870 --> 00:13:57,600

the most exciting to you for example

347

00:14:06,710 --> 00:14:04,470

you know we've had such a wide variety

348

00:14:08,629 --> 00:14:06,720

of activities up here i really enjoy all

349

00:14:10,230 --> 00:14:08,639

of it uh we do a lot of science like you

350

00:14:12,389 --> 00:14:10,240

mentioned we've also had a lot of

351
00:14:14,310 --> 00:14:12,399
robotic arm operations where we've had

352
00:14:15,829 --> 00:14:14,320
uh cargo vehicles arriving that we

353
00:14:18,710 --> 00:14:15,839
actually reach out and grab it with the

354
00:14:20,870 --> 00:14:18,720
robotic arm that's been a lot of fun

355
00:14:23,269 --> 00:14:20,880
but probably the most fun and most

356
00:14:25,350 --> 00:14:23,279
exciting is doing space walks and we've

357
00:14:26,710 --> 00:14:25,360
gotten to do a few space walks already

358
00:14:28,150 --> 00:14:26,720
and we're getting ready to do another

359
00:14:29,990 --> 00:14:28,160
one next friday

360
00:14:31,590 --> 00:14:30,000
followed by two more after that before i

361
00:14:34,949 --> 00:14:31,600
head back to earth so those are probably

362
00:14:36,790 --> 00:14:34,959
my most exciting things on board

363
00:14:38,550 --> 00:14:36,800

thank you very much peggy you're gonna

364

00:14:40,150 --> 00:14:38,560

have to show shane up and do a flip

365

00:14:41,590 --> 00:14:40,160

probably while answering this next

366

00:14:43,829 --> 00:14:41,600

question so

367

00:14:46,069 --> 00:14:43,839

okay uh we have noah wilbur of south

368

00:14:48,550 --> 00:14:46,079

charleston high school hi my question is

369

00:14:50,550 --> 00:14:48,560

for peggy with all the space debris how

370

00:14:55,670 --> 00:14:50,560

do the nasa probes travel through space

371

00:15:00,069 --> 00:14:58,150

that's a really great question our nasa

372

00:15:02,150 --> 00:15:00,079

actually tracks a lot of the debris but

373

00:15:04,629 --> 00:15:02,160

it has to be a certain size before they

374

00:15:06,710 --> 00:15:04,639

can track it and i think probably the

375

00:15:09,590 --> 00:15:06,720

only reason we don't hit things is

376

00:15:11,829 --> 00:15:09,600

because space is so expansive and so

377

00:15:14,629 --> 00:15:11,839

large that the chances are you're just

378

00:15:17,030 --> 00:15:14,639

not going to hit something but we do

379

00:15:19,350 --> 00:15:17,040

track large things like rocket old

380

00:15:22,069 --> 00:15:19,360

rocket bodies and old satellites that

381

00:15:24,550 --> 00:15:22,079

are up here and occasionally we have to

382

00:15:27,910 --> 00:15:24,560

maneuver the station and do a reboost or

383

00:15:30,870 --> 00:15:27,920

a d boost to change our altitude so that

384

00:15:32,550 --> 00:15:30,880

we will miss a target

385

00:15:33,590 --> 00:15:32,560

thank you thank you we have about four

386

00:15:34,790 --> 00:15:33,600

minutes left so we're going to try and

387

00:15:37,030 --> 00:15:34,800

get this knocked out here real quick

388

00:15:39,110 --> 00:15:37,040

hannah runions of polka middle school

389

00:15:43,030 --> 00:15:39,120

hi my question is for shane how long

390

00:15:45,030 --> 00:15:43,040

does it take for the body to completely

391

00:15:47,269 --> 00:15:45,040

completely recoup from the

392

00:15:51,269 --> 00:15:47,279

weightlessness atmosphere when you come

393

00:15:54,790 --> 00:15:53,269

well everybody's a little bit different

394

00:15:56,629 --> 00:15:54,800

i've only been on a short duration

395

00:15:58,230 --> 00:15:56,639

mission before so when i return to earth

396

00:15:59,829 --> 00:15:58,240

here in less than a month

397

00:16:01,670 --> 00:15:59,839

it's going to be a new experience for me

398

00:16:03,990 --> 00:16:01,680

after being gone for about six months so

399

00:16:05,749 --> 00:16:04,000

i hope it's only a few days but

400

00:16:07,829 --> 00:16:05,759

sometimes it's a week and then to get

401
00:16:10,629 --> 00:16:07,839
fully rehabilitated like peggy mentioned

402
00:16:13,990 --> 00:16:10,639
earlier sometimes a month to 45 days for

403
00:16:15,350 --> 00:16:14,000
your entire body to get readjusted

404
00:16:17,269 --> 00:16:15,360
thank you

405
00:16:18,870 --> 00:16:17,279
next up is alex jurdorf of george

406
00:16:19,990 --> 00:16:18,880
washington high school four questions

407
00:16:22,790 --> 00:16:20,000
live here we go

408
00:16:24,550 --> 00:16:22,800
hi guys my question is for peggy

409
00:16:26,629 --> 00:16:24,560
so without the natural barrier of

410
00:16:28,470 --> 00:16:26,639
earth's atmosphere what precautions must

411
00:16:30,550 --> 00:16:28,480
the station and crew members take to be

412
00:16:32,550 --> 00:16:30,560
protected from radiation and how will

413
00:16:37,110 --> 00:16:32,560

this radiation affect a multi-year

414

00:16:40,949 --> 00:16:39,430

that's a fantastic question and the

415

00:16:43,269 --> 00:16:40,959

radiation here

416

00:16:45,829 --> 00:16:43,279

where we are at 250 miles above the

417

00:16:46,550 --> 00:16:45,839

earth is still lower than it is when if

418

00:16:49,189 --> 00:16:46,560

we

419

00:16:51,430 --> 00:16:49,199

uh go on a long duration mission beyond

420

00:16:53,269 --> 00:16:51,440

earth's magnetosphere so it's the

421

00:16:55,910 --> 00:16:53,279

magnetic field that surrounds the earth

422

00:16:57,990 --> 00:16:55,920

that protects us and then it's even more

423

00:16:59,749 --> 00:16:58,000

protected down on the on the planet

424

00:17:01,350 --> 00:16:59,759

because of the atmosphere so it's that

425

00:17:04,710 --> 00:17:01,360

combination of atmosphere and

426
00:17:06,230 --> 00:17:04,720
magnetosphere that protects us future

427
00:17:10,390 --> 00:17:06,240
missions are going to have that as one

428
00:17:12,309 --> 00:17:10,400
of the main challenges is radiation

429
00:17:13,990 --> 00:17:12,319
thank you guys next up aaron dodd of

430
00:17:16,150 --> 00:17:14,000
south charleston high school after this

431
00:17:17,990 --> 00:17:16,160
two questions hi this question is for

432
00:17:19,350 --> 00:17:18,000
shane regarding the debates concerning

433
00:17:20,870 --> 00:17:19,360
the government defending the space

434
00:17:22,630 --> 00:17:20,880
travel program where do you see the

435
00:17:23,909 --> 00:17:22,640
future of the program going do you think

436
00:17:28,870 --> 00:17:23,919
that it will eventually face more

437
00:17:32,789 --> 00:17:30,950
well the future right now is to get to

438
00:17:35,190 --> 00:17:32,799

get a human being on mars and so that's

439

00:17:37,029 --> 00:17:35,200

what nasa in general is gearing our

440

00:17:38,310 --> 00:17:37,039

human space flight program towards so

441

00:17:39,750 --> 00:17:38,320

we're building vehicles we're doing

442

00:17:41,909 --> 00:17:39,760

research we're even doing a lot of that

443

00:17:44,070 --> 00:17:41,919

on board the iss right now in order to

444

00:17:46,630 --> 00:17:44,080

be able to send a human to some place

445

00:17:48,310 --> 00:17:46,640

like mars we always do face monetary

446

00:17:50,150 --> 00:17:48,320

challenges we're a government agency

447

00:17:52,310 --> 00:17:50,160

like all the other agencies we're all

448

00:17:54,230 --> 00:17:52,320

fighting for a big pot of money so

449

00:17:55,990 --> 00:17:54,240

that's going to continue no matter

450

00:17:57,430 --> 00:17:56,000

what's going on nasa is always going to

451
00:17:59,270 --> 00:17:57,440
face struggles with trying to get more

452
00:18:01,590 --> 00:17:59,280
and more money

453
00:18:04,549 --> 00:18:01,600
thank you thank you next up is going to

454
00:18:06,870 --> 00:18:04,559
be uh tyler mcvaney of parkersburg high

455
00:18:08,470 --> 00:18:06,880
school hello it's an honor to speak be

456
00:18:10,470 --> 00:18:08,480
speaking with you all today this

457
00:18:12,070 --> 00:18:10,480
question is for peggy

458
00:18:13,909 --> 00:18:12,080
how do you feel the success of private

459
00:18:15,669 --> 00:18:13,919
companies contributing to the commercial

460
00:18:18,230 --> 00:18:15,679
crew program will enhance and contribute

461
00:18:20,230 --> 00:18:18,240
to the future of space explorations

462
00:18:21,669 --> 00:18:20,240
and as an astronaut are you excited for

463
00:18:26,789 --> 00:18:21,679

the possibility of riding these

464

00:18:31,029 --> 00:18:28,630

actually we have one of those cargo

465

00:18:33,669 --> 00:18:31,039

vehicles right here on board to uh right

466

00:18:35,750 --> 00:18:33,679

now and we're planning on uh unberthing

467

00:18:37,669 --> 00:18:35,760

and and releasing it at the end of the

468

00:18:40,789 --> 00:18:37,679

week to bring back home scientific

469

00:18:42,870 --> 00:18:40,799

samples uh that's a spacex vehicle and

470

00:18:44,950 --> 00:18:42,880

uh next week we're hoping to get a

471

00:18:47,029 --> 00:18:44,960

cygnus vehicle in

472

00:18:49,350 --> 00:18:47,039

so we're really excited about these

473

00:18:50,710 --> 00:18:49,360

cargo vehicles they give the u.s a great

474

00:18:51,669 --> 00:18:50,720

capability

475

00:18:53,909 --> 00:18:51,679

again

476

00:18:56,870 --> 00:18:53,919

and the fact that it's done commercially

477

00:18:58,789 --> 00:18:56,880

i think expands our potential for future

478

00:19:01,110 --> 00:18:58,799

exploration so it's absolutely

479

00:19:03,430 --> 00:19:01,120

imperative and yes i'd be happy to get

480

00:19:05,430 --> 00:19:03,440

on a new a new vehicle

481

00:19:07,270 --> 00:19:05,440

thank you and our final question

482

00:19:08,789 --> 00:19:07,280

frederick mooney of south charleston

483

00:19:12,150 --> 00:19:08,799

high school

484

00:19:13,270 --> 00:19:12,160

hello this is for both peggy and shane

485

00:19:15,270 --> 00:19:13,280

um

486

00:19:17,830 --> 00:19:15,280

what steps did you take from college and

487

00:19:19,590 --> 00:19:17,840

beyond to get where you are now and for

488

00:19:21,750 --> 00:19:19,600

a related question

489

00:19:27,510 --> 00:19:21,760

what should an aspiring astronaut like

490

00:19:31,350 --> 00:19:29,350

well for me i went to the united states

491

00:19:32,150 --> 00:19:31,360

military academy at west point so after

492

00:19:34,549 --> 00:19:32,160

that

493

00:19:36,310 --> 00:19:34,559

i went into the army obligation there

494

00:19:38,710 --> 00:19:36,320

but i did a career in the army actually

495

00:19:40,630 --> 00:19:38,720

as a apache helicopter pilot but the

496

00:19:42,630 --> 00:19:40,640

main things throughout that career was

497

00:19:44,470 --> 00:19:42,640

education to get me to this this point

498

00:19:47,029 --> 00:19:44,480

where i am education and operational

499

00:19:49,270 --> 00:19:47,039

experience was the path that i i guess

500

00:19:50,390 --> 00:19:49,280

used to get to into the astronaut core

501
00:19:51,669 --> 00:19:50,400
now peggy's a little bit different

502
00:19:55,110 --> 00:19:51,679
because she came a different route so

503
00:20:06,310 --> 00:19:56,150
and

504
00:20:08,310 --> 00:20:06,320
10 years working at nasa before i was

505
00:20:11,029 --> 00:20:08,320
lucky enough to be selected

506
00:20:13,350 --> 00:20:11,039
but for me it was education but coming

507
00:20:15,669 --> 00:20:13,360
from a scientific arena so any field in

508
00:20:18,470 --> 00:20:15,679
science engineering math

509
00:20:19,830 --> 00:20:18,480
any operational field like in the

510
00:20:22,549 --> 00:20:19,840
military

511
00:20:26,230 --> 00:20:22,559
test pilot school all of those can apply

512
00:20:29,190 --> 00:20:26,240
to becoming an astronaut and i think the

513
00:20:31,510 --> 00:20:29,200

advice i would give is uh

514

00:20:33,110 --> 00:20:31,520

really push yourself go beyond what you

515

00:20:35,909 --> 00:20:33,120

think you can actually do because you

516

00:20:39,909 --> 00:20:37,510

thank you

517

00:20:41,909 --> 00:20:39,919

dr whitston and commander kimbro we want

518

00:20:43,350 --> 00:20:41,919

to thank you on behalf of everybody in

519

00:20:44,870 --> 00:20:43,360

the great mountain state all everybody

520

00:20:46,870 --> 00:20:44,880

here at clay center in charleston west

521

00:20:49,110 --> 00:20:46,880

virginia all of the students thousands

522

00:20:51,029 --> 00:20:49,120

of students that are watching today that

523

00:20:53,590 --> 00:20:51,039

tuned in for you sharing a little bit of

524

00:20:55,750 --> 00:20:53,600

your day-to-day with us homer hickam as

525

00:20:58,310 --> 00:20:55,760

you know is a famous author from

526
00:21:00,710 --> 00:20:58,320
colewood west virginia and homer said he

527
00:21:03,750 --> 00:21:00,720
said basically the rocket won't fly

528
00:21:05,990 --> 00:21:03,760
until someone lights the fuse today i

529
00:21:08,149 --> 00:21:06,000
hope and i think you have lit the fuse

530
00:21:10,149 --> 00:21:08,159
for thousands of kids in west virginia

531
00:21:12,070 --> 00:21:10,159
to be up right where you are today god

532
00:21:13,990 --> 00:21:12,080
bless you thank you for what you do for

533
00:21:17,300 --> 00:21:14,000
our great country and have a safe

534
00:21:23,270 --> 00:21:17,310
journey back home thank you

535
00:21:28,630 --> 00:21:25,430
standing ovation thank you look at there

536
00:21:30,950 --> 00:21:28,640
there's the flip for everyone

537
00:21:34,310 --> 00:21:30,960
shane peggy thank you so much from west

538
00:21:34,320 --> 00:21:37,110

you're welcome

539

00:21:45,510 --> 00:21:39,430

station this is houston acr

540

00:21:48,870 --> 00:21:47,110

thank you to all the participants and

541

00:21:51,350 --> 00:21:48,880

guests from the clay center for the arts