



1  
00:00:06,470 --> 00:00:02,470  
station this is houston are you ready

2  
00:00:12,629 --> 00:00:10,310  
houston station is ready for the event

3  
00:00:14,390 --> 00:00:12,639  
alamo height alamo heights high school

4  
00:00:21,590 --> 00:00:14,400  
this is mission control please call

5  
00:00:25,109 --> 00:00:23,349  
ready for me

6  
00:00:27,509 --> 00:00:25,119  
ready

7  
00:00:29,750 --> 00:00:27,519  
station this is congressman lamar smith

8  
00:00:31,669 --> 00:00:29,760  
at alamo heights high school in san

9  
00:00:35,830 --> 00:00:31,679  
antonio texas

10  
00:00:40,630 --> 00:00:37,750  
representative smith we hear you loud

11  
00:00:43,270 --> 00:00:40,640  
and clear how are you today sir

12  
00:00:45,910 --> 00:00:43,280  
doing wonderfully well thanks to you all

13  
00:00:49,029 --> 00:00:45,920

uh i hope you can hear that applause in

14

00:00:50,389 --> 00:00:49,039

the background uh 130 students are

15

00:00:51,990 --> 00:00:50,399

looking forward to hearing what you have

16

00:00:53,830 --> 00:00:52,000

to say thank you for taking the time to

17

00:00:55,830 --> 00:00:53,840

be with us i just was saying you were

18

00:00:56,630 --> 00:00:55,840

the heroes of the day so thank you for

19

00:00:58,709 --> 00:00:56,640

uh

20

00:01:00,229 --> 00:00:58,719

for sharing your time and your expertise

21

00:01:01,110 --> 00:01:00,239

and at this point i'm going to turn it

22

00:01:03,670 --> 00:01:01,120

over

23

00:01:04,950 --> 00:01:03,680

to mr lang who is their teacher and then

24

00:01:08,789 --> 00:01:04,960

we'll get to the questions but thanks

25

00:01:08,799 --> 00:01:11,429

thank you

26

00:01:11,439 --> 00:01:12,230

okay sir

27

00:01:17,749 --> 00:01:14,550

year first and then um uh after that

28

00:01:19,670 --> 00:01:17,759

will be sarah and eric and josh so you

29

00:01:35,109 --> 00:01:19,680

guys are uh jacob so let's get you guys

30

00:01:41,350 --> 00:01:38,310

um hi first question um i was wondering

31

00:01:43,830 --> 00:01:41,360

uh because the station is uh underneath

32

00:01:44,789 --> 00:01:43,840

the roach limit is there any tidal

33

00:01:46,950 --> 00:01:44,799

stress

34

00:01:51,830 --> 00:01:46,960

or stretching on the frame of the

35

00:01:55,350 --> 00:01:53,749

yeah that's

36

00:01:57,190 --> 00:01:55,360

that's a very interesting question and i

37

00:01:59,190 --> 00:01:57,200

have to admit i had to look up uh what

38

00:02:01,270 --> 00:01:59,200

the roach limit is and to be honest i

39

00:02:03,190 --> 00:02:01,280

don't i don't know the answer to that

40

00:02:05,109 --> 00:02:03,200

but it does highlight a very important

41

00:02:07,109 --> 00:02:05,119

point and that is that the space station

42

00:02:09,430 --> 00:02:07,119

itself is a very complex machine and

43

00:02:11,350 --> 00:02:09,440

it's taken thousands of people uh to

44

00:02:14,790 --> 00:02:11,360

build it and to run it and to make it

45

00:02:17,510 --> 00:02:14,800

work and there are there are experts on

46

00:02:18,790 --> 00:02:17,520

on every system out there so you know

47

00:02:20,229 --> 00:02:18,800

i'm guessing that there's probably

48

00:02:22,390 --> 00:02:20,239

someone out there that's very familiar

49

00:02:24,869 --> 00:02:22,400

with that limit and they could probably

50

00:02:27,030 --> 00:02:24,879

answer it for you but unfortunately uh

51  
00:02:31,990 --> 00:02:27,040  
yeah unfortunately rick and i aren't

52  
00:02:36,390 --> 00:02:34,309  
hi i'm eric and i was wondering um did

53  
00:02:38,470 --> 00:02:36,400  
you guys plan to be an astronaut like

54  
00:02:40,150 --> 00:02:38,480  
from childhood or did you come to it

55  
00:02:44,550 --> 00:02:40,160  
through a class you took in high school

56  
00:02:48,229 --> 00:02:46,470  
you know i was always interested in math

57  
00:02:49,670 --> 00:02:48,239  
and science when i was

58  
00:02:51,270 --> 00:02:49,680  
probably starting in fourth or fifth

59  
00:02:53,110 --> 00:02:51,280  
grade and i was interested all through

60  
00:02:54,710 --> 00:02:53,120  
high school on that but i never really

61  
00:02:55,910 --> 00:02:54,720  
thought that i could be an astronaut i

62  
00:02:57,350 --> 00:02:55,920  
never even knew that i could be an

63  
00:02:59,589 --> 00:02:57,360

astronaut to tell you the truth till i

64

00:03:01,750 --> 00:02:59,599

was about 27 years old

65

00:03:03,350 --> 00:03:01,760

and i saw an advertisement in a magazine

66

00:03:04,869 --> 00:03:03,360

at that and they were looking for

67

00:03:06,790 --> 00:03:04,879

astronauts and people could fill out

68

00:03:09,270 --> 00:03:06,800

applications and this is when the space

69

00:03:10,710 --> 00:03:09,280

shuttle program was just beginning so

70

00:03:12,309 --> 00:03:10,720

that opened my eyes and made me

71

00:03:14,550 --> 00:03:12,319

understand that anybody can be an

72

00:03:27,910 --> 00:03:14,560

astronaut it all it takes is a lot of

73

00:03:27,920 --> 00:03:34,710

has changed since you've been on the iss

74

00:03:37,350 --> 00:03:35,750

so yeah

75

00:03:39,190 --> 00:03:37,360

yeah you can see rick groin right now as

76

00:03:40,789 --> 00:03:39,200

we speak

77

00:03:41,990 --> 00:03:40,799

yeah you know we do end up growing

78

00:03:45,190 --> 00:03:42,000

because when you you get into the

79

00:03:46,869 --> 00:03:45,200

microgravity environment you you offload

80

00:03:48,949 --> 00:03:46,879

your spine and so there is a little bit

81

00:03:50,630 --> 00:03:48,959

of growth but that uh we try and and

82

00:03:52,070 --> 00:03:50,640

actually minimize that through uh

83

00:03:53,670 --> 00:03:52,080

through exercise and things like that so

84

00:03:56,229 --> 00:03:53,680

we're constantly loading up our body as

85

00:03:57,509 --> 00:03:56,239

well and so in reality my stature has

86

00:03:59,509 --> 00:03:57,519

only probably changed about three

87

00:04:01,350 --> 00:03:59,519

percent so not as much as i was hoping i

88

00:04:07,110 --> 00:04:01,360

was hoping to hit six feet but i don't

89

00:04:11,589 --> 00:04:09,670

i'm sarah and i was wondering how you

90

00:04:17,110 --> 00:04:11,599

prevent the loss of bone density since

91

00:04:20,949 --> 00:04:18,870

hi sarah yeah that's a good question

92

00:04:23,030 --> 00:04:20,959

like mike said we exercise quite a bit

93

00:04:25,909 --> 00:04:23,040

so the types of exercise we have is we

94

00:04:27,909 --> 00:04:25,919

run on a treadmill and the way we run on

95

00:04:30,150 --> 00:04:27,919

the treadmill is we wear a harness and

96

00:04:31,909 --> 00:04:30,160

it kind of in bungie strap us to the

97

00:04:33,990 --> 00:04:31,919

treadmill so that puts a lot of load on

98

00:04:35,430 --> 00:04:34,000

our shoulders and on our legs and that

99

00:04:37,110 --> 00:04:35,440

helps with what you're talking about it

100

00:04:39,189 --> 00:04:37,120

puts load on our muscles and on our

101  
00:04:41,670 --> 00:04:39,199  
bones and then we also lift a lot of

102  
00:04:43,990 --> 00:04:41,680  
weights we have a pneumatic system

103  
00:04:46,310 --> 00:04:44,000  
that allows us to it's basically a

104  
00:04:48,870 --> 00:04:46,320  
resistive exercise device if you will

105  
00:04:50,469 --> 00:04:48,880  
and that also it's basically squats and

106  
00:04:52,310 --> 00:04:50,479  
deadlifts and bench pressing and things

107  
00:04:54,870 --> 00:04:52,320  
like that and again that puts load on

108  
00:04:57,270 --> 00:04:54,880  
our muscles which helps our bone density

109  
00:04:59,430 --> 00:04:57,280  
and of course a good diet in this

110  
00:05:01,830 --> 00:04:59,440  
constant exercise two hours every day

111  
00:05:07,830 --> 00:05:01,840  
helps to minimize the loss of bone

112  
00:05:11,029 --> 00:05:10,150  
hi i'm zoe and i have a question for

113  
00:05:12,870 --> 00:05:11,039

rick

114

00:05:14,950 --> 00:05:12,880

has being able to view the world from

115

00:05:20,550 --> 00:05:14,960

the iss changed your perspective on

116

00:05:25,029 --> 00:05:23,350

hey zoe that's a that's a good question

117

00:05:27,110 --> 00:05:25,039

i don't really pay too much attention to

118

00:05:28,550 --> 00:05:27,120

world politics but i do obviously read

119

00:05:30,070 --> 00:05:28,560

the news and i understand all the

120

00:05:32,550 --> 00:05:30,080

problems that are going on in the world

121

00:05:34,310 --> 00:05:32,560

today and it does change your view being

122

00:05:36,070 --> 00:05:34,320

up here a little bit because you look at

123

00:05:38,310 --> 00:05:36,080

the world so much differently the world

124

00:05:40,390 --> 00:05:38,320

is uh is is an incredibly beautiful

125

00:05:42,710 --> 00:05:40,400

place but it's also it seems like a much

126  
00:05:44,310 --> 00:05:42,720  
smaller place as we go through training

127  
00:05:45,590 --> 00:05:44,320  
over the three years we visit a lot of

128  
00:05:48,629 --> 00:05:45,600  
different countries i spent a lot of

129  
00:05:50,710 --> 00:05:48,639  
time in russia in japan in germany even

130  
00:05:52,469 --> 00:05:50,720  
some time in canada and of course lots

131  
00:05:54,710 --> 00:05:52,479  
of time in houston in my home my home

132  
00:05:55,749 --> 00:05:54,720  
city so the world becomes a much smaller

133  
00:05:57,510 --> 00:05:55,759  
place when you go through this

134  
00:05:59,029 --> 00:05:57,520  
experience and you get more familiar

135  
00:06:01,990 --> 00:05:59,039  
with the different locations and things

136  
00:06:02,790 --> 00:06:02,000  
don't seem as foreign anymore to you

137  
00:06:04,790 --> 00:06:02,800  
so

138  
00:06:06,710 --> 00:06:04,800

yeah you do change a little bit and you

139

00:06:08,150 --> 00:06:06,720

start to think that maybe it would be

140

00:06:15,749 --> 00:06:08,160

better if people just got along of

141

00:06:19,990 --> 00:06:17,909

hi i'm anne my question is for mike and

142

00:06:26,150 --> 00:06:20,000

how many hours do you of sleep do you

143

00:06:29,510 --> 00:06:27,830

that's a that's a great question and

144

00:06:31,510 --> 00:06:29,520

actually i found the up here i'm

145

00:06:33,189 --> 00:06:31,520

sleeping about as much as i do when i'm

146

00:06:35,590 --> 00:06:33,199

on the ground and that's somewhere

147

00:06:37,270 --> 00:06:35,600

between five or six hours of sleep every

148

00:06:39,430 --> 00:06:37,280

night i get up pretty much at the same

149

00:06:41,830 --> 00:06:39,440

time and and tend to go to bed at the

150

00:06:44,629 --> 00:06:41,840

same time as far as stressful sleep is

151  
00:06:45,990 --> 00:06:44,639  
never stressful um so it's it's actually

152  
00:06:47,909 --> 00:06:46,000  
pretty relaxing of course it's a little

153  
00:06:49,990 --> 00:06:47,919  
bit different up here we we sleep in

154  
00:06:51,909 --> 00:06:50,000  
sleeping bags and because there's no up

155  
00:06:54,150 --> 00:06:51,919  
or down we can just tie the sleeping bag

156  
00:06:56,950 --> 00:06:54,160  
to a wall to the deck to the to the

157  
00:06:58,629 --> 00:06:56,960  
overhead wherever is uh however our crew

158  
00:06:59,990 --> 00:06:58,639  
quarters are laid out

159  
00:07:01,670 --> 00:07:00,000  
so you crawl in that sleeping bag you

160  
00:07:08,950 --> 00:07:01,680  
kind of wrap yourself up and it's

161  
00:07:13,189 --> 00:07:11,589  
hi i'm a yin my question is for rick

162  
00:07:15,430 --> 00:07:13,199  
how is this space food and have there

163  
00:07:22,950 --> 00:07:15,440

any have there ever been any attempts to

164

00:07:26,550 --> 00:07:25,029

oh the food yeah hey we we have all

165

00:07:28,629 --> 00:07:26,560

kinds of food up here we have a pretty

166

00:07:30,550 --> 00:07:28,639

wide selection of food

167

00:07:32,550 --> 00:07:30,560

and it comes in basically uh three

168

00:07:34,550 --> 00:07:32,560

different forms we have the irradiated

169

00:07:37,749 --> 00:07:34,560

food that's kind of like uh like you

170

00:07:40,790 --> 00:07:37,759

find in an mre the military folks eat

171

00:07:43,029 --> 00:07:40,800

we have the uh dehydrated food that

172

00:07:44,950 --> 00:07:43,039

basically this is uh this is actually uh

173

00:07:47,670 --> 00:07:44,960

rice pudding it's hard as a rock right

174

00:07:48,710 --> 00:07:47,680

now but we add some water to it and it

175

00:07:51,350 --> 00:07:48,720

uh

176

00:07:52,869 --> 00:07:51,360

goes back to its normal state and it's

177

00:07:54,469 --> 00:07:52,879

actually pretty good and then of course

178

00:07:55,909 --> 00:07:54,479

we have our drink bags it's really not

179

00:07:57,670 --> 00:07:55,919

much more than an envelope with some

180

00:07:59,430 --> 00:07:57,680

powder in it this is pineapple drink we

181

00:08:00,869 --> 00:07:59,440

add water shake it up and we got a good

182

00:08:04,309 --> 00:08:00,879

pineapple drink

183

00:08:06,550 --> 00:08:04,319

uh as far as food growing food mike is

184

00:08:08,230 --> 00:08:06,560

uh mike is making an attempt to grow i

185

00:08:09,189 --> 00:08:08,240

think this is a pumpkin seed that he

186

00:08:11,430 --> 00:08:09,199

brought up

187

00:08:13,110 --> 00:08:11,440

and this is kind of his uh his hobby he

188

00:08:14,950 --> 00:08:13,120

grows these little seedlings and they're

189

00:08:17,350 --> 00:08:14,960

trying trying to get him as uh

190

00:08:18,950 --> 00:08:17,360

as big as he can but it's gonna be a

191

00:08:26,710 --> 00:08:18,960

while before we actually get fruit out

192

00:08:29,029 --> 00:08:27,430

hi

193

00:08:31,110 --> 00:08:29,039

my name is luther my question is for

194

00:08:33,029 --> 00:08:31,120

mike what are the living conditions like

195

00:08:37,670 --> 00:08:33,039

on the iss is it cramped or do you have

196

00:08:40,870 --> 00:08:39,430

yeah actually the the international

197

00:08:42,870 --> 00:08:40,880

space station is quite large it's

198

00:08:44,949 --> 00:08:42,880

probably about the size of uh the inside

199

00:08:47,030 --> 00:08:44,959

of a boeing 747 or i've heard it

200

00:08:48,710 --> 00:08:47,040

described as a five-bedroom house so

201  
00:08:50,870 --> 00:08:48,720  
there's there's quite a bit of space on

202  
00:08:53,190 --> 00:08:50,880  
uh space in it uh we do have a little

203  
00:08:54,389 --> 00:08:53,200  
bit of uh private space we each have a

204  
00:08:56,949 --> 00:08:54,399  
crew quarter

205  
00:08:58,470 --> 00:08:56,959  
where we sleep and where we are able to

206  
00:08:59,910 --> 00:08:58,480  
we have our own computers in there so we

207  
00:09:02,070 --> 00:08:59,920  
can communicate with our families and

208  
00:09:04,230 --> 00:09:02,080  
friends from from that location

209  
00:09:06,310 --> 00:09:04,240  
and it's about the size of a small broom

210  
00:09:07,990 --> 00:09:06,320  
closet or for anyone that is familiar

211  
00:09:10,870 --> 00:09:08,000  
with a phone booth that's about the size

212  
00:09:13,670 --> 00:09:10,880  
of it so you do have a you do have a a

213  
00:09:15,030 --> 00:09:13,680

small bit of private space but overall

214

00:09:16,470 --> 00:09:15,040

you know you don't really notice it it's

215

00:09:18,630 --> 00:09:16,480

big enough that as we're working

216

00:09:20,550 --> 00:09:18,640

throughout the day you know we don't we

217

00:09:22,310 --> 00:09:20,560

can go hours without seeing each other

218

00:09:23,829 --> 00:09:22,320

as you're working in one module and your

219

00:09:32,870 --> 00:09:23,839

crewmates are working in a different one

220

00:09:36,470 --> 00:09:34,870

and my questions for rick this is sort

221

00:09:37,750 --> 00:09:36,480

of already been asked but can you tell

222

00:09:39,590 --> 00:09:37,760

us a little bit more about how difficult

223

00:09:45,110 --> 00:09:39,600

it is to maintain your physical fitness

224

00:09:49,670 --> 00:09:47,269

yeah it's actually it is difficult and

225

00:09:51,990 --> 00:09:49,680

that it's it's very time consuming again

226

00:09:54,150 --> 00:09:52,000

like i said we spend about two two and a

227

00:09:56,230 --> 00:09:54,160

half hours a day working out

228

00:09:58,630 --> 00:09:56,240

a little more than an hour almost an

229

00:10:01,430 --> 00:09:58,640

hour and a half lifting weights or in on

230

00:10:03,110 --> 00:10:01,440

a resistive exercise device and then i

231

00:10:04,470 --> 00:10:03,120

kind of alternate some days i'll run a

232

00:10:07,110 --> 00:10:04,480

treadmill and then some days i'll

233

00:10:08,790 --> 00:10:07,120

exercise on a a stationary bicycle that

234

00:10:10,870 --> 00:10:08,800

we have here and that's usually probably

235

00:10:12,870 --> 00:10:10,880

about 40 minutes or so

236

00:10:15,509 --> 00:10:12,880

so it's the biggest problem is that it's

237

00:10:17,269 --> 00:10:15,519

time consuming and it takes up a lot of

238

00:10:18,949 --> 00:10:17,279

time for the crew member takes time away

239

00:10:20,790 --> 00:10:18,959

from science and research so some of the

240

00:10:22,470 --> 00:10:20,800

things we're trying to do is figure out

241

00:10:24,790 --> 00:10:22,480

more efficient ways for the crew member

242

00:10:27,350 --> 00:10:24,800

to exercise or try to minimize how much

243

00:10:29,190 --> 00:10:27,360

exercise the crew member needs

244

00:10:31,110 --> 00:10:29,200

and of course still stay healthy so that

245

00:10:40,310 --> 00:10:31,120

he could have more time to do science

246

00:10:42,949 --> 00:10:41,269

rick

247

00:10:45,110 --> 00:10:42,959

how big of a problem is carbon dioxide

248

00:10:47,030 --> 00:10:45,120

buildup and other spots on the iss with

249

00:10:52,069 --> 00:10:47,040

poor ventilation where carbon dioxide is

250

00:10:55,030 --> 00:10:53,750

okay yeah that's a good question carbon

251  
00:10:58,069 --> 00:10:55,040  
dioxide

252  
00:10:59,910 --> 00:10:58,079  
it's um it's not a real big problem up

253  
00:11:01,990 --> 00:10:59,920  
here because we have like you say we

254  
00:11:04,069 --> 00:11:02,000  
have quite a bit quite a number of fans

255  
00:11:05,750 --> 00:11:04,079  
you know we got inter-module ventilation

256  
00:11:07,269 --> 00:11:05,760  
we got ventilation between the modules

257  
00:11:09,829 --> 00:11:07,279  
we got ventilation for basically

258  
00:11:11,509 --> 00:11:09,839  
everything up here so it obviously mixes

259  
00:11:13,269 --> 00:11:11,519  
the air and keeps carbon dioxide from

260  
00:11:15,590 --> 00:11:13,279  
building up i remember on one of my

261  
00:11:17,110 --> 00:11:15,600  
first missions in in 2000 when the space

262  
00:11:19,269 --> 00:11:17,120  
station was only about three different

263  
00:11:20,710 --> 00:11:19,279

segments the ventilation system wasn't

264

00:11:22,389 --> 00:11:20,720

fully worked out it wasn't fully

265

00:11:24,069 --> 00:11:22,399

installed yet because we were just still

266

00:11:25,829 --> 00:11:24,079

building the space station and as you

267

00:11:27,990 --> 00:11:25,839

can see these racks up here sometimes we

268

00:11:29,350 --> 00:11:28,000

would be working behind these racks and

269

00:11:31,430 --> 00:11:29,360

if you're back there for a long period

270

00:11:33,509 --> 00:11:31,440

of time you get these co2 pockets would

271

00:11:35,509 --> 00:11:33,519

build up as you're back there breathing

272

00:11:37,350 --> 00:11:35,519

and you know the symptom is you end up

273

00:11:38,790 --> 00:11:37,360

with a headache so it's nothing nothing

274

00:11:39,910 --> 00:11:38,800

usually nothing worse than you just end

275

00:11:41,509 --> 00:11:39,920

up with a headache and you kind of

276

00:11:44,069 --> 00:11:41,519

wonder why do i have a headache well

277

00:11:45,990 --> 00:11:44,079

because co2 built up where you are but

278

00:11:48,150 --> 00:11:46,000

that not really much of a problem since

279

00:11:50,949 --> 00:11:48,160

i've been up here the past uh

280

00:11:52,710 --> 00:11:50,959

three months now i've had very few co2

281

00:11:54,230 --> 00:11:52,720

symptoms so it's uh i think it's a

282

00:12:04,550 --> 00:11:54,240

problem that we've

283

00:12:08,389 --> 00:12:06,870

hi my name is eric gasteon this question

284

00:12:10,069 --> 00:12:08,399

is for mike

285

00:12:17,110 --> 00:12:10,079

what dangers do solar winds and space

286

00:12:22,310 --> 00:12:18,470

i'm sorry can you repeat the question i

287

00:12:26,629 --> 00:12:24,710

this question is from mike

288

00:12:31,430 --> 00:12:26,639

what dangers do solar winds and space

289

00:12:35,509 --> 00:12:33,030

okay yeah that's that's a great question

290

00:12:37,110 --> 00:12:35,519

and primarily the the space junk is what

291

00:12:39,110 --> 00:12:37,120

causes the most danger for us in fact

292

00:12:40,790 --> 00:12:39,120

the air force actually tracks all of

293

00:12:43,829 --> 00:12:40,800

these objects in space thousands of

294

00:12:45,430 --> 00:12:43,839

objects in space and they predict where

295

00:12:46,790 --> 00:12:45,440

in their those objects are going to be

296

00:12:48,389 --> 00:12:46,800

in their orbits and then they're also

297

00:12:50,389 --> 00:12:48,399

looking at where the space station is in

298

00:12:52,310 --> 00:12:50,399

its orbit and if it looks like any of

299

00:12:54,949 --> 00:12:52,320

those are going to meet then they'll get

300

00:12:57,430 --> 00:12:54,959

in touch with nasa and we if

301  
00:12:58,870 --> 00:12:57,440  
if it looks

302  
00:13:01,269 --> 00:12:58,880  
likely that that's going to happen then

303  
00:13:02,870 --> 00:13:01,279  
we might actually move the station and

304  
00:13:05,590 --> 00:13:02,880  
so that means changing its orbit a

305  
00:13:06,949 --> 00:13:05,600  
little bit boosting it up and if if

306  
00:13:08,710 --> 00:13:06,959  
there's not enough time to do that

307  
00:13:11,110 --> 00:13:08,720  
however then we might actually have to

308  
00:13:13,269 --> 00:13:11,120  
go down to our soyuz vehicle which is uh

309  
00:13:15,030 --> 00:13:13,279  
what we would use to come home in

310  
00:13:16,550 --> 00:13:15,040  
just in case there is any kind of a

311  
00:13:24,150 --> 00:13:16,560  
strike like that and we needed to get

312  
00:13:27,670 --> 00:13:26,069  
yeah i'm andrew uh this question's from

313  
00:13:29,829 --> 00:13:27,680

mike

314

00:13:35,190 --> 00:13:29,839

do you have any recreational time and if

315

00:13:38,629 --> 00:13:37,110

yeah so you saw some of the things i

316

00:13:40,470 --> 00:13:38,639

like to do uh during our free time and

317

00:13:42,550 --> 00:13:40,480

we do have some free time our days are

318

00:13:44,150 --> 00:13:42,560

pretty full we get a few hours each

319

00:13:45,430 --> 00:13:44,160

night and then uh typically on the

320

00:13:47,910 --> 00:13:45,440

weekends we'll have a little bit of

321

00:13:49,030 --> 00:13:47,920

extra time there for for recreational so

322

00:13:50,389 --> 00:13:49,040

you know i've been playing around with

323

00:13:52,230 --> 00:13:50,399

trying to get some seeds to grow that's

324

00:13:53,670 --> 00:13:52,240

been pretty tough but one of the

325

00:13:55,110 --> 00:13:53,680

one of the things that's the most fun is

326

00:13:57,670 --> 00:13:55,120

just floating i mean it's it's a

327

00:13:59,670 --> 00:13:57,680

fantastic experience i i love doing it i

328

00:14:01,750 --> 00:13:59,680

love doing it as i work

329

00:14:03,509 --> 00:14:01,760

and so you never get tired of that

330

00:14:05,269 --> 00:14:03,519

looking out the window and and taking

331

00:14:07,189 --> 00:14:05,279

pictures of the earth is is a bunch of

332

00:14:08,389 --> 00:14:07,199

fun as well and then we do a lot of the

333

00:14:10,550 --> 00:14:08,399

same things that you guys do

334

00:14:12,550 --> 00:14:10,560

occasionally watch movies i like to read

335

00:14:14,470 --> 00:14:12,560

books so every night before i go to bed

336

00:14:15,990 --> 00:14:14,480

i'm typically reading a book as well and

337

00:14:39,590 --> 00:14:16,000

then we spend a lot of time as well

338

00:14:42,710 --> 00:14:41,030

do you feel that the training you

339

00:14:44,310 --> 00:14:42,720

received on the simulators prepared you

340

00:14:52,310 --> 00:14:44,320

for your mission or is that something

341

00:14:57,269 --> 00:14:54,550

oh yeah the training prepares us very

342

00:14:58,949 --> 00:14:57,279

well like i said before the training we

343

00:15:00,949 --> 00:14:58,959

trained i think about

344

00:15:03,509 --> 00:15:00,959

two and a half to three years for this

345

00:15:05,110 --> 00:15:03,519

mission and it was quite extensive and

346

00:15:06,550 --> 00:15:05,120

we trained a lot spent a lot of time in

347

00:15:08,230 --> 00:15:06,560

russia japan

348

00:15:10,389 --> 00:15:08,240

germany and canada because it is an

349

00:15:13,030 --> 00:15:10,399

international partnership and we train

350

00:15:15,110 --> 00:15:13,040

each other in each other's astronauts in

351

00:15:17,910 --> 00:15:15,120

in the various facilities uh the

352

00:15:19,750 --> 00:15:17,920

training is is often the training is

353

00:15:21,509 --> 00:15:19,760

kind of just in case training just in

354

00:15:23,110 --> 00:15:21,519

case we have a malfunction of some kind

355

00:15:25,030 --> 00:15:23,120

we have to be prepared

356

00:15:27,350 --> 00:15:25,040

to react to that malfunction and try to

357

00:15:29,110 --> 00:15:27,360

get the space station back back to its

358

00:15:30,069 --> 00:15:29,120

normal configuration that's a lot of our

359

00:15:34,710 --> 00:15:30,079

training

360

00:15:37,829 --> 00:15:35,990

actually i'd just like to add though the

361

00:15:39,670 --> 00:15:37,839

one thing the simulator can't give for

362

00:15:41,110 --> 00:15:39,680

you though is if you have a rack up here

363

00:15:47,030 --> 00:15:41,120

that you need to work on when we're down

364

00:15:47,040 --> 00:15:53,189

well you can but it's just a lot harder

365

00:15:57,110 --> 00:15:55,189

hi um

366

00:15:58,550 --> 00:15:57,120

thank you my name is jordan supase and i

367

00:15:59,509 --> 00:15:58,560

have a question for mike

368

00:16:01,030 --> 00:15:59,519

um

369

00:16:07,269 --> 00:16:01,040

what's the most difficult part of living

370

00:16:11,269 --> 00:16:09,430

yeah you know that's uh that's a hard

371

00:16:13,590 --> 00:16:11,279

question to answer because it's it's

372

00:16:14,949 --> 00:16:13,600

fantastic living in space uh probably

373

00:16:15,990 --> 00:16:14,959

the hardest part is being away from your

374

00:16:17,590 --> 00:16:16,000

family

375

00:16:20,150 --> 00:16:17,600

that's never easy no matter if you're on

376

00:16:21,509 --> 00:16:20,160

the earth or up here in space but

377

00:16:24,069 --> 00:16:21,519

i'm actually going to steal some words

378

00:16:26,389 --> 00:16:24,079

from rick as he's used to describe like

379

00:16:28,629 --> 00:16:26,399

what it's like going outside on an eva a

380

00:16:30,870 --> 00:16:28,639

lot of times the the simple things on

381

00:16:32,629 --> 00:16:30,880

earth become difficult up here um the

382

00:16:34,470 --> 00:16:32,639

little things like just eating your food

383

00:16:36,790 --> 00:16:34,480

you saw how we have to eat up here out

384

00:16:38,949 --> 00:16:36,800

of little packets and and so when you're

385

00:16:40,310 --> 00:16:38,959

just eating your food and and you spill

386

00:16:41,430 --> 00:16:40,320

something it ends up just going

387

00:16:43,829 --> 00:16:41,440

everywhere because it's flowing and it

388

00:16:45,910 --> 00:16:43,839

doesn't just fall down to the ground

389

00:16:47,829 --> 00:16:45,920

so a lot of those little things become a

390

00:16:49,990 --> 00:16:47,839

little bit more or easy things become

391

00:16:52,550 --> 00:16:50,000

more difficult up in space and sometimes

392

00:16:54,629 --> 00:16:52,560

as rick says too the impossible things

393

00:16:56,470 --> 00:16:54,639

become pretty easy so these racks that

394

00:16:57,990 --> 00:16:56,480

weigh hundreds hundreds of pounds that

395

00:17:00,629 --> 00:16:58,000

we would never be able to move on our

396

00:17:03,110 --> 00:17:00,639

own uh down on earth we're able to do up

397

00:17:05,110 --> 00:17:03,120

here in space quite easily so

398

00:17:07,189 --> 00:17:05,120

it's it's absolutely fantastic up here

399

00:17:12,949 --> 00:17:07,199

and really there's not there's not too

400

00:17:17,590 --> 00:17:15,829

hi my name is nicole and

401  
00:17:19,590 --> 00:17:17,600  
this question is for rick could you

402  
00:17:25,270 --> 00:17:19,600  
describe the experience of takeoff and

403  
00:17:31,430 --> 00:17:28,470  
yeah launch is an incredibly dynamic

404  
00:17:32,549 --> 00:17:31,440  
event as the words i usually use

405  
00:17:34,710 --> 00:17:32,559  
you know you're sitting on the launch

406  
00:17:36,070 --> 00:17:34,720  
pad everything is usually very quiet and

407  
00:17:38,710 --> 00:17:36,080  
then at launch

408  
00:17:40,470 --> 00:17:38,720  
it's basically it's it's kind of like

409  
00:17:42,789 --> 00:17:40,480  
accelerating very quickly in an

410  
00:17:43,909 --> 00:17:42,799  
amusement park ride or or a car i guess

411  
00:17:46,390 --> 00:17:43,919  
if you will

412  
00:17:49,830 --> 00:17:46,400  
and it's also a lot of vibrations a lot

413  
00:17:52,390 --> 00:17:49,840

of noise and

414

00:17:54,630 --> 00:17:52,400

the i flew both on the space shuttle now

415

00:17:56,390 --> 00:17:54,640

and on the soyuz rocket and one of the

416

00:17:58,150 --> 00:17:56,400

things the space shuttle jumps off the

417

00:18:00,150 --> 00:17:58,160

launch pad a lot quicker but the soyuz

418

00:18:02,950 --> 00:18:00,160

rocket is very dynamic during staging in

419

00:18:04,710 --> 00:18:02,960

that when one stage burns out you kind

420

00:18:06,230 --> 00:18:04,720

of get thrown forward in your seat and

421

00:18:08,310 --> 00:18:06,240

then when the seconds the next stage

422

00:18:10,630 --> 00:18:08,320

lights you get thrown back in your seat

423

00:18:13,750 --> 00:18:10,640

and then again the vibrations pick up so

424

00:18:15,750 --> 00:18:13,760

it's a very dynamic time there's

425

00:18:17,270 --> 00:18:15,760

on the soyuz vehicle there's not very

426

00:18:18,950 --> 00:18:17,280

good windows to look out but on the

427

00:18:20,630 --> 00:18:18,960

space shuttle it was a great view as we

428

00:18:21,669 --> 00:18:20,640

used to fly up the east coast so i used

429

00:18:22,710 --> 00:18:21,679

to be able to look out the window and

430

00:18:24,390 --> 00:18:22,720

see the whole

431

00:18:26,070 --> 00:18:24,400

basically the whole east coast so it was

432

00:18:28,070 --> 00:18:26,080

a fantastic view

433

00:18:30,230 --> 00:18:28,080

and the entry on the shuttle i only have

434

00:18:31,990 --> 00:18:30,240

that experience at this point was uh not

435

00:18:33,669 --> 00:18:32,000

much different than uh flying in an

436

00:18:35,510 --> 00:18:33,679

airplane because you're more in an

437

00:18:37,190 --> 00:18:35,520

airplane configuration

438

00:18:38,630 --> 00:18:37,200

uh and it was kind of interesting

439

00:18:40,070 --> 00:18:38,640

because you would start out weightless

440

00:18:42,230 --> 00:18:40,080

and then there's the lower and lower you

441

00:18:43,990 --> 00:18:42,240

got slower and slower you got the

442

00:18:46,070 --> 00:18:44,000

gravity would kind of slowly pull you

443

00:18:47,990 --> 00:18:46,080

into your seat so you just felt heavier

444

00:18:49,909 --> 00:18:48,000

and heavier and heavier until you landed

445

00:18:51,830 --> 00:18:49,919

and then you felt very very heavy

446

00:18:53,510 --> 00:18:51,840

because you're in a one gravity or one g

447

00:18:59,110 --> 00:18:53,520

field for the first time in several

448

00:19:02,390 --> 00:19:01,190

hello my name is ted and my question is

449

00:19:03,830 --> 00:19:02,400

for mike

450

00:19:05,830 --> 00:19:03,840

what takes place in the event of a

451  
00:19:10,870 --> 00:19:05,840  
medical emergency that may require

452  
00:19:14,549 --> 00:19:12,390  
yeah that's a that's a great question so

453  
00:19:16,870 --> 00:19:14,559  
we actually have quite a bit of medical

454  
00:19:19,669 --> 00:19:16,880  
equipment on board the the space station

455  
00:19:21,270 --> 00:19:19,679  
uh for just about any any contingency

456  
00:19:23,110 --> 00:19:21,280  
and we all have to go through quite a

457  
00:19:24,470 --> 00:19:23,120  
bit of training on being a medical

458  
00:19:26,070 --> 00:19:24,480  
officer up here

459  
00:19:28,630 --> 00:19:26,080  
now we're very fortunate in that our

460  
00:19:31,190 --> 00:19:28,640  
commander oleg kotov russian cosmonaut

461  
00:19:32,950 --> 00:19:31,200  
he's also a doctor and so it's certainly

462  
00:19:34,950 --> 00:19:32,960  
nice when you when you do have a doctor

463  
00:19:36,390 --> 00:19:34,960

on board so that if there is that kind

464

00:19:37,990 --> 00:19:36,400

of an emergency

465

00:19:40,230 --> 00:19:38,000

he's here to help out but on the other

466

00:19:42,630 --> 00:19:40,240

hand if there's not we have doctors on

467

00:19:44,710 --> 00:19:42,640

the ground as well and they're there

468

00:19:46,230 --> 00:19:44,720

ready to help us out so if someone gets

469

00:19:47,830 --> 00:19:46,240

seriously injured what we're going to do

470

00:19:49,909 --> 00:19:47,840

is we're going to work together with

471

00:19:51,510 --> 00:19:49,919

that doctor on the ground to try and

472

00:20:00,950 --> 00:19:51,520

figure out what's the best course of

473

00:20:04,710 --> 00:20:02,710

we've come to the end of our questions

474

00:20:07,110 --> 00:20:04,720

in the end of our wonderful program with

475

00:20:18,549 --> 00:20:07,120

rick and mike first of all let's give

476

00:20:23,190 --> 00:20:21,350

rick and mike thank you all again uh as

477

00:20:25,669 --> 00:20:23,200

i said earlier you're really the heroes

478

00:20:27,350 --> 00:20:25,679

of the modern era uh we thank you for

479

00:20:29,669 --> 00:20:27,360

your sacrifices we thank you for your

480

00:20:31,590 --> 00:20:29,679

expertise and for your courage as well

481

00:20:32,470 --> 00:20:31,600

uh you've inspired a lot of us today and

482

00:20:34,149 --> 00:20:32,480

i said

483

00:20:35,750 --> 00:20:34,159

uh earlier as well maybe there's an

484

00:20:37,510 --> 00:20:35,760

astronaut in the audience a future

485

00:20:39,990 --> 00:20:37,520

astronaut in the audience we'll find out

486

00:20:42,390 --> 00:20:40,000

but thank you again and wish you well

487

00:20:46,230 --> 00:20:42,400

and a safe trip back in march when you

488

00:20:49,590 --> 00:20:47,669

well thank you very much it was

489

00:20:53,669 --> 00:20:49,600

absolutely fantastic we enjoyed spending

490

00:20:57,110 --> 00:20:55,350

they can't see us

491

00:20:59,750 --> 00:20:57,120

stationed this is houston acr that

492

00:21:01,510 --> 00:20:59,760

concludes the event thank you

493

00:21:03,190 --> 00:21:01,520

thank you representative lamar smith and

494

00:21:05,029 --> 00:21:03,200

alamo heights high school station we are