



1
00:00:07,430 --> 00:00:03,270
station this is houston are you ready

2
00:00:12,230 --> 00:00:10,870
houston station is ready for the event

3
00:00:13,749 --> 00:00:12,240
university of connecticut this is

4
00:00:16,710 --> 00:00:13,759
mission control houston please call

5
00:00:18,470 --> 00:00:16,720
station for a voice check station this

6
00:00:21,990 --> 00:00:18,480
is the university of connecticut how do

7
00:00:24,710 --> 00:00:23,189
university of connecticut the

8
00:00:29,269 --> 00:00:24,720
international space station hears you

9
00:00:29,279 --> 00:00:32,310
okay

10
00:00:36,549 --> 00:00:34,470
we have a professor here at uconn whose

11
00:00:38,869 --> 00:00:36,559
gm tomato seeds went to space on

12
00:00:39,830 --> 00:00:38,879
discovery are there any crops grown in

13
00:00:46,790 --> 00:00:39,840

space

14

00:00:51,590 --> 00:00:49,750

at this time we do not have any crops on

15

00:00:54,310 --> 00:00:51,600

board the space station but we have a

16

00:00:56,549 --> 00:00:54,320

cargo vehicle launching here and maybe

17

00:00:57,830 --> 00:00:56,559

today or tomorrow and it's uh promises

18

00:00:59,029 --> 00:00:57,840

to bring us some crops up and we're

19

00:01:00,869 --> 00:00:59,039

going to actually start growing things

20

00:01:02,549 --> 00:01:00,879

up here there have been some experiments

21

00:01:04,390 --> 00:01:02,559

in the past that have grown plants but

22

00:01:07,750 --> 00:01:04,400

currently we do not have anything on

23

00:01:15,749 --> 00:01:09,590

have you experienced any changes in your

24

00:01:18,870 --> 00:01:17,270

yeah i guess you know being up here for

25

00:01:20,950 --> 00:01:18,880

a long period of time and seeing the

26
00:01:22,550 --> 00:01:20,960
earth the way that we see it from uh so

27
00:01:24,469 --> 00:01:22,560
from so high above

28
00:01:25,990 --> 00:01:24,479
you're definitely you're the way you

29
00:01:27,350 --> 00:01:26,000
think about the earth the way you think

30
00:01:28,870 --> 00:01:27,360
about the different countries the way

31
00:01:30,550 --> 00:01:28,880
you think about different people

32
00:01:31,910 --> 00:01:30,560
definitely changes a little bit so it

33
00:01:36,870 --> 00:01:31,920
definitely will have an effect on me for

34
00:01:44,469 --> 00:01:38,789
when you look out the window of the iss

35
00:01:47,270 --> 00:01:45,990
yeah that's a good question every time

36
00:01:49,670 --> 00:01:47,280
you look out the window you see

37
00:01:52,389 --> 00:01:49,680
something very beautiful i have to say

38
00:01:54,069 --> 00:01:52,399

my favorite views are the caribbean the

39

00:01:55,910 --> 00:01:54,079

waters in the caribbean are just

40

00:01:56,789 --> 00:01:55,920

incredibly different shades of blue and

41

00:01:58,550 --> 00:01:56,799

teal

42

00:01:59,830 --> 00:01:58,560

uh it's beautiful the other thing i like

43

00:02:01,670 --> 00:01:59,840

to see is at night when we have

44

00:02:03,270 --> 00:02:01,680

lightning storms especially it seems

45

00:02:05,030 --> 00:02:03,280

like the continent of africa they have

46

00:02:06,550 --> 00:02:05,040

some very big severe

47

00:02:07,910 --> 00:02:06,560

lightning storms thunder and lightning

48

00:02:09,830 --> 00:02:07,920

storms and we could see the lightning

49

00:02:13,589 --> 00:02:09,840

flashing all over the continent and it's

50

00:02:20,790 --> 00:02:15,030

what made you choose electrical

51
00:02:23,350 --> 00:02:22,150
i think he asked why did i select

52
00:02:25,750 --> 00:02:23,360
electrical engineering and computer

53
00:02:27,589 --> 00:02:25,760
science as my major uh back then you

54
00:02:29,910 --> 00:02:27,599
know computers uh personal computers

55
00:02:31,990 --> 00:02:29,920
were probably just starting to come on

56
00:02:33,350 --> 00:02:32,000
the market so i knew that computers were

57
00:02:35,030 --> 00:02:33,360
going to be an important part of any

58
00:02:37,110 --> 00:02:35,040
type of engineering so i wanted the

59
00:02:38,390 --> 00:02:37,120
computer science aspect of it and of

60
00:02:40,470 --> 00:02:38,400
course i was always interested in

61
00:02:42,070 --> 00:02:40,480
electronics and electrical things so

62
00:02:44,710 --> 00:02:42,080
that just kind of was a natural fit for

63
00:02:48,070 --> 00:02:46,229

what advice would you give a current

64

00:02:53,830 --> 00:02:48,080

yukon student that wants to follow the

65

00:02:57,589 --> 00:02:55,830

yeah that's a tough one it's uh there's

66

00:02:59,750 --> 00:02:57,599

so many different paths to become an

67

00:03:01,430 --> 00:02:59,760

astronaut there's no one easy path with

68

00:03:02,710 --> 00:03:01,440

like graduating as an engineer from the

69

00:03:04,390 --> 00:03:02,720

university of connecticut for example

70

00:03:05,830 --> 00:03:04,400

you know the path you have to take to

71

00:03:07,830 --> 00:03:05,840

become an astronaut it's much more

72

00:03:09,830 --> 00:03:07,840

complicated much more difficult

73

00:03:11,990 --> 00:03:09,840

but the best advice i could give folks

74

00:03:14,070 --> 00:03:12,000

is find something that you enjoy if you

75

00:03:15,910 --> 00:03:14,080

enjoy uh electrical engineering for

76

00:03:17,350 --> 00:03:15,920

example go get your grad your

77

00:03:19,589 --> 00:03:17,360

undergraduate degree get a master's

78

00:03:21,350 --> 00:03:19,599

maybe even a phd in that get a job

79

00:03:23,270 --> 00:03:21,360

working as that as an engineer in that

80

00:03:25,270 --> 00:03:23,280

field something that you enjoy work on

81

00:03:27,990 --> 00:03:25,280

it for a few years put in an application

82

00:03:30,390 --> 00:03:28,000

at nasa as an astronaut maybe come work

83

00:03:33,430 --> 00:03:30,400

at nasa nasa has a lot of great jobs as

84

00:03:35,589 --> 00:03:33,440

engineers flight controllers scientists

85

00:03:37,190 --> 00:03:35,599

technicians all kinds of folks

86

00:03:39,270 --> 00:03:37,200

work at the johnson space center and the

87

00:03:41,430 --> 00:03:39,280

other centers around the country so find

88

00:03:42,550 --> 00:03:41,440

something you enjoy become very good at

89

00:03:43,910 --> 00:03:42,560

it of course and then put your

90

00:03:47,110 --> 00:03:43,920

application in the hat and see what

91

00:03:54,070 --> 00:03:48,630

is space anything like what science

92

00:03:54,080 --> 00:03:57,589

i'm sorry can you repeat the question

93

00:04:06,390 --> 00:03:59,429

is space anything like what science

94

00:04:10,390 --> 00:04:07,589

i'm sorry i'm getting a little bit of

95

00:04:12,630 --> 00:04:10,400

echo one more time

96

00:04:25,189 --> 00:04:12,640

is space anything like science fiction

97

00:04:29,670 --> 00:04:27,189

okay i understand science fiction yeah

98

00:04:31,110 --> 00:04:29,680

no it's nothing like science fiction you

99

00:04:33,590 --> 00:04:31,120

know i've read a lot of science fiction

100

00:04:34,550 --> 00:04:33,600

books uh growing up and still do once in

101

00:04:36,870 --> 00:04:34,560

a while

102

00:04:38,469 --> 00:04:36,880

uh in books and movies and things like

103

00:04:39,990 --> 00:04:38,479

that things are very dramatic things

104

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

happen very fast you know up here in

105

00:04:43,909 --> 00:04:42,080

space we move kind of slow you know

106

00:04:46,150 --> 00:04:43,919

vehicles rendezvous and dock with each

107

00:04:47,510 --> 00:04:46,160

other very very slowly things happen

108

00:04:49,830 --> 00:04:47,520

very slowly up here they're not as

109

00:04:52,310 --> 00:04:49,840

dramatic of course we have the we have

110

00:04:54,790 --> 00:04:52,320

much better views than any uh graphics

111

00:04:56,469 --> 00:04:54,800

can in a movie can uh demonstrate or

112

00:04:58,710 --> 00:04:56,479

reproduce

113

00:05:00,390 --> 00:04:58,720

so no it's not really like uh science

114

00:05:01,830 --> 00:05:00,400

fiction up here but

115

00:05:03,670 --> 00:05:01,840

we still get to do some pretty neat

116

00:05:07,749 --> 00:05:03,680

things and we see some great we get some

117

00:05:11,110 --> 00:05:09,510

how did you move from becoming a flight

118

00:05:16,469 --> 00:05:11,120

controller to actually working on the

119

00:05:19,749 --> 00:05:18,150

yeah again i worked as a worked as an

120

00:05:21,510 --> 00:05:19,759

engineer at nasa for a little while i

121

00:05:22,870 --> 00:05:21,520

worked as an engineer up in connecticut

122

00:05:25,029 --> 00:05:22,880

for a while then i worked as an engineer

123

00:05:26,790 --> 00:05:25,039

at nasa for a while and i switched over

124

00:05:28,150 --> 00:05:26,800

and became a flight controller and i

125

00:05:29,590 --> 00:05:28,160

worked about two or three years as a

126
00:05:31,270 --> 00:05:29,600
flight controller and then got selected

127
00:05:32,790 --> 00:05:31,280
as an astronaut

128
00:05:34,390 --> 00:05:32,800
again the path was really doing

129
00:05:37,110 --> 00:05:34,400
something i really enjoyed i really

130
00:05:38,950 --> 00:05:37,120
enjoyed working as an engineer at nasa

131
00:05:40,629 --> 00:05:38,960
i saw the flight controllers and i

132
00:05:41,830 --> 00:05:40,639
thought their job was really neat so i

133
00:05:43,590 --> 00:05:41,840
decided i wanted to become a flight

134
00:05:45,350 --> 00:05:43,600
controller i became a flight controller

135
00:05:47,749 --> 00:05:45,360
for the space shuttle i loved that job

136
00:05:49,670 --> 00:05:47,759
that was a fantastic job and again i was

137
00:05:51,350 --> 00:05:49,680
just doing something i really enjoyed i

138
00:05:52,710 --> 00:05:51,360

was pretty good at it i put my name in

139

00:05:54,870 --> 00:05:52,720

the hat and i was lucky enough to get

140

00:05:57,029 --> 00:05:54,880

selected

141

00:05:58,790 --> 00:05:57,039

station this is houston acr that

142

00:06:00,790 --> 00:05:58,800

concludes the university of connecticut

143

00:06:02,309 --> 00:06:00,800

portion of the event please stand by for

144

00:06:12,230 --> 00:06:02,319

a voice check from rensselaer

145

00:06:18,629 --> 00:06:14,469

station this is rensselaer polytechnic

146

00:06:23,029 --> 00:06:20,550

rpi i hear you loud and clear welcome to

147

00:06:24,950 --> 00:06:23,039

the international space station

148

00:06:29,189 --> 00:06:24,960

station this is rensselaer polytechnic

149

00:06:31,590 --> 00:06:30,150

all right

150

00:06:39,350 --> 00:06:31,600

we got a great excited crowd here for

151

00:06:43,189 --> 00:06:41,749

hi rick this is alex angelella

152

00:06:44,870 --> 00:06:43,199

i was wondering

153

00:06:46,550 --> 00:06:44,880

what has been the most surprising result

154

00:06:47,670 --> 00:06:46,560

you've seen from an experiment in space

155

00:06:52,710 --> 00:06:47,680

and what's the significance of

156

00:06:55,510 --> 00:06:54,230

well of course you know the

157

00:06:57,670 --> 00:06:55,520

international space station has been

158

00:07:00,469 --> 00:06:57,680

conducting experiments for 10 years now

159

00:07:03,909 --> 00:07:00,479

or more i should say yeah 14 or 15 years

160

00:07:05,670 --> 00:07:03,919

almost since it's begin but

161

00:07:07,670 --> 00:07:05,680

you know we have a long way to go we

162

00:07:09,029 --> 00:07:07,680

just completed the construction of the

163

00:07:10,150 --> 00:07:09,039

international space station a few years

164

00:07:11,510 --> 00:07:10,160

ago and we just started getting to

165

00:07:13,110 --> 00:07:11,520

full-time operations where we're

166

00:07:14,390 --> 00:07:13,120

actually performing experiments around

167

00:07:15,990 --> 00:07:14,400

the clock

168

00:07:17,110 --> 00:07:16,000

a lot of those results are not in yet

169

00:07:18,550 --> 00:07:17,120

some of these experiments are going to

170

00:07:20,390 --> 00:07:18,560

take a long time before we see the

171

00:07:22,550 --> 00:07:20,400

results before we before they actually

172

00:07:24,710 --> 00:07:22,560

uh lead to something on the market some

173

00:07:26,710 --> 00:07:24,720

of the things i hear about of course uh

174

00:07:27,990 --> 00:07:26,720

we do some research on vaccines i've

175

00:07:29,430 --> 00:07:28,000

heard that some of the space-based

176
00:07:32,469 --> 00:07:29,440
research that we're performing up here

177
00:07:33,990 --> 00:07:32,479
has has led to a salmonella vaccine

178
00:07:36,309 --> 00:07:34,000
which of course affects a lot of people

179
00:07:38,870 --> 00:07:36,319
on the earth so things like that is what

180
00:07:41,350 --> 00:07:38,880
we're shooting for not only to help the

181
00:07:43,510 --> 00:07:41,360
folks on earth but also to further our

182
00:07:46,150 --> 00:07:43,520
exploration in the in the the solar

183
00:07:47,990 --> 00:07:46,160
system move us on beyond low earth orbit

184
00:07:49,749 --> 00:07:48,000
to the moon and mars so we do research

185
00:07:51,430 --> 00:07:49,759
to push us beyond low earth orbit but we

186
00:08:01,990 --> 00:07:51,440
also do research to help the folks on

187
00:08:10,950 --> 00:08:04,790
thank you rick my name is emily and what

188
00:08:14,230 --> 00:08:12,469

hi emily yeah that's a really good

189

00:08:15,909 --> 00:08:14,240

question you know mostly what you hear

190

00:08:17,909 --> 00:08:15,919

is you hear the uh the humming of your

191

00:08:19,909 --> 00:08:17,919

suit this suit has a fan and a pump and

192

00:08:21,670 --> 00:08:19,919

it's constantly running of course and

193

00:08:23,189 --> 00:08:21,680

that's a very reassuring feeling having

194

00:08:24,469 --> 00:08:23,199

that constant white noise sound so

195

00:08:26,230 --> 00:08:24,479

that's the first thing you hear all the

196

00:08:27,589 --> 00:08:26,240

time of course you hear voices as the

197

00:08:29,670 --> 00:08:27,599

ground's talking to you and your your

198

00:08:31,510 --> 00:08:29,680

eva partners talking to you but the neat

199

00:08:33,589 --> 00:08:31,520

thing is you know they say you can't

200

00:08:35,110 --> 00:08:33,599

hear anything in space i can remember

201
00:08:37,430 --> 00:08:35,120
being in the space shuttle payload bay

202
00:08:39,269 --> 00:08:37,440
where i was uh i was a attached

203
00:08:41,350 --> 00:08:39,279
structure with a kind of like a handrail

204
00:08:44,149 --> 00:08:41,360
it's called a brt it's like a clamp and

205
00:08:46,150 --> 00:08:44,159
that was attached to my suit and my

206
00:08:47,829 --> 00:08:46,160
space walking partner was kind of like

207
00:08:49,350 --> 00:08:47,839
clunking down the uh the another

208
00:08:51,110 --> 00:08:49,360
handrail and he was like plugging in a

209
00:08:52,949 --> 00:08:51,120
piece of hardware and i could hear him

210
00:08:54,630 --> 00:08:52,959
as he's banging on the metal of course

211
00:08:56,230 --> 00:08:54,640
that sound is being transmitted through

212
00:08:57,670 --> 00:08:56,240
the structure of the space shuttle into

213
00:08:59,269 --> 00:08:57,680

this through the structure of my suit

214

00:09:11,430 --> 00:08:59,279

and i could hear it so it's pretty neat

215

00:09:15,110 --> 00:09:13,910

thanks rick my name is chris folk and uh

216

00:09:15,990 --> 00:09:15,120

a question i was wondering was even

217

00:09:17,829 --> 00:09:16,000

though you went through years of

218

00:09:19,190 --> 00:09:17,839

training to get into space is there

219

00:09:24,150 --> 00:09:19,200

anything that surprised you when you

220

00:09:27,190 --> 00:09:25,990

yes uh you know whenever whenever you

221

00:09:28,630 --> 00:09:27,200

come up here there's always something

222

00:09:31,110 --> 00:09:28,640

interesting and surprising you know my

223

00:09:32,949 --> 00:09:31,120

first mission was quite a while ago

224

00:09:34,949 --> 00:09:32,959

and the beauty of the earth you know

225

00:09:36,310 --> 00:09:34,959

it's amazing you spend your whole life

226

00:09:38,150 --> 00:09:36,320

trying to get off the earth it seems

227

00:09:39,509 --> 00:09:38,160

like and then as soon as you get into

228

00:09:40,949 --> 00:09:39,519

low earth orbit the first thing you do

229

00:09:42,870 --> 00:09:40,959

is turn around and look back at the

230

00:09:44,790 --> 00:09:42,880

earth and see how beautiful it was and

231

00:09:46,389 --> 00:09:44,800

you don't you miss it almost instantly

232

00:09:47,750 --> 00:09:46,399

so that was kind of surprising that you

233

00:09:50,310 --> 00:09:47,760

spent so much time looking at the earth

234

00:09:52,389 --> 00:09:50,320

and just being amazed by its beauty uh

235

00:09:53,590 --> 00:09:52,399

it's also really you know it's i

236

00:09:55,110 --> 00:09:53,600

wouldn't say it was surprising but it

237

00:09:56,389 --> 00:09:55,120

sure is a lot of fun when you're up here

238

00:09:58,710 --> 00:09:56,399

and you're floating

239

00:10:00,310 --> 00:09:58,720

and uh you know you can hang upside down

240

00:10:01,910 --> 00:10:00,320

i used to hang upside down and eat my

241

00:10:03,110 --> 00:10:01,920

lunch just because i could so things

242

00:10:14,230 --> 00:10:03,120

like that are

243

00:10:18,150 --> 00:10:15,910

thank you hi my name is cassandra

244

00:10:19,829 --> 00:10:18,160

morales and we were wondering what makes

245

00:10:21,990 --> 00:10:19,839

you most excited about the future of

246

00:10:23,829 --> 00:10:22,000

space exploration perhaps visiting

247

00:10:28,310 --> 00:10:23,839

asteroids or going back to the moon or

248

00:10:31,269 --> 00:10:29,590

yeah that's a great question i think the

249

00:10:32,710 --> 00:10:31,279

thing that makes me the most excited is

250

00:10:34,470 --> 00:10:32,720

the fact that we have so many

251
00:10:35,990 --> 00:10:34,480
opportunities in the future probably not

252
00:10:37,829 --> 00:10:36,000
too far away hopefully in five or ten

253
00:10:39,829 --> 00:10:37,839
years we've got several commercial

254
00:10:41,350 --> 00:10:39,839
companies i can encounter four or five

255
00:10:42,710 --> 00:10:41,360
different commercial companies building

256
00:10:43,910 --> 00:10:42,720
vehicles that are going to go into low

257
00:10:45,269 --> 00:10:43,920
earth orbit

258
00:10:47,910 --> 00:10:45,279
and so that's going to really open up

259
00:10:49,750 --> 00:10:47,920
the uh the market for a lot of folks to

260
00:10:51,509 --> 00:10:49,760
to visit up here into low earth orbit

261
00:10:53,110 --> 00:10:51,519
and see the earth and kind of experience

262
00:10:54,389 --> 00:10:53,120
the things that i get to experience but

263
00:10:55,910 --> 00:10:54,399

then you also have nasa on the other

264

00:10:57,430 --> 00:10:55,920

hand you have nasa with the orion

265

00:10:59,190 --> 00:10:57,440

vehicle that's going to go beyond low

266

00:11:01,509 --> 00:10:59,200

earth orbit go back to the moon or to an

267

00:11:02,710 --> 00:11:01,519

asteroid maybe eventually to mars so i

268

00:11:04,630 --> 00:11:02,720

think there's a lot of things on the

269

00:11:07,190 --> 00:11:04,640

horizon it's been a little bit slow in

270

00:11:09,670 --> 00:11:07,200

terms of u.s vehicles since the shuttle

271

00:11:10,790 --> 00:11:09,680

program has been shut down but i think

272

00:11:12,310 --> 00:11:10,800

we're coming on strong with the

273

00:11:13,590 --> 00:11:12,320

commercial vehicles and with the orion

274

00:11:25,670 --> 00:11:13,600

program i think it's going to be a

275

00:11:29,269 --> 00:11:27,750

hey rick my name is evan kaiser are

276

00:11:31,110 --> 00:11:29,279

there any specific methods you use

277

00:11:32,710 --> 00:11:31,120

during spacewalks to minimize radiation

278

00:11:37,509 --> 00:11:32,720

exposure and how do you factor in

279

00:11:42,310 --> 00:11:40,630

hey even yeah we don't do anything to

280

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

mitigate it but the ground folks do the

281

00:11:45,829 --> 00:11:44,480

ground folks look at our trajectory they

282

00:11:48,150 --> 00:11:45,839

look at how much time we're going to

283

00:11:49,750 --> 00:11:48,160

spend out there on the space walk uh

284

00:11:52,069 --> 00:11:49,760

they look at our total radiation

285

00:11:54,069 --> 00:11:52,079

exposure during our our whole lifetime

286

00:11:55,509 --> 00:11:54,079

our career as an astronaut they look at

287

00:11:57,110 --> 00:11:55,519

all those factors and they determine

288

00:11:59,590 --> 00:11:57,120

what the best time is for us to go

289

00:12:01,190 --> 00:11:59,600

outside when's the uh who does the

290

00:12:02,550 --> 00:12:01,200

spacewalks for example who even gets

291

00:12:04,470 --> 00:12:02,560

assigned to the missions if you have too

292

00:12:05,990 --> 00:12:04,480

much radiation exposure in your career

293

00:12:08,150 --> 00:12:06,000

you may not be able to do long duration

294

00:12:09,829 --> 00:12:08,160

missions for example so the the docs on

295

00:12:11,430 --> 00:12:09,839

the flight doctors on the ground they

296

00:12:13,670 --> 00:12:11,440

keep track of all that stuff and they

297

00:12:25,350 --> 00:12:13,680

make sure that we stay below their you

298

00:12:29,350 --> 00:12:27,269

hey rick my name is ryan uh can you

299

00:12:33,910 --> 00:12:29,360

compare launching in the soyuz rocket

300

00:12:37,269 --> 00:12:35,829

yeah that's a great question

301

00:12:38,870 --> 00:12:37,279

yeah let's see i launched in the space

302

00:12:41,350 --> 00:12:38,880

shuttle see three space shuttle launches

303

00:12:43,190 --> 00:12:41,360

in the uh one soyuz launch now the space

304

00:12:45,670 --> 00:12:43,200

shuttle is an incredible vehicle it's it

305

00:12:47,269 --> 00:12:45,680

just it just hops off the launch pad and

306

00:12:49,030 --> 00:12:47,279

it basically is

307

00:12:50,949 --> 00:12:49,040

is moving very accelerates very quickly

308

00:12:52,790 --> 00:12:50,959

off the launch pad immediately and it's

309

00:12:54,949 --> 00:12:52,800

uh first stage is very bumpy you know i

310

00:12:56,310 --> 00:12:54,959

kind of uh the analogy i used in first

311

00:12:57,990 --> 00:12:56,320

stage of the space shuttle was kind of

312

00:12:59,590 --> 00:12:58,000

like if you rode a motorcycle down a

313

00:13:01,430 --> 00:12:59,600

train track that's how much bumpy and

314

00:13:02,870 --> 00:13:01,440

how bumpy it is and then when you get at

315

00:13:04,470 --> 00:13:02,880

the second stage of the space shuttle

316

00:13:06,389 --> 00:13:04,480

it's very very smooth you can't even

317

00:13:07,910 --> 00:13:06,399

feel the engines the rumble of the

318

00:13:08,949 --> 00:13:07,920

engines or the vibration very very

319

00:13:10,949 --> 00:13:08,959

smooth

320

00:13:13,030 --> 00:13:10,959

the soyuz is quite a bit different the

321

00:13:14,470 --> 00:13:13,040

soyuz doesn't hop off the launch pad as

322

00:13:15,910 --> 00:13:14,480

fast it doesn't accelerate off the

323

00:13:17,910 --> 00:13:15,920

launch pad as quickly as the space

324

00:13:19,910 --> 00:13:17,920

shuttle it's a little bit smoother than

325

00:13:21,670 --> 00:13:19,920

first stage but the thing that was

326

00:13:23,190 --> 00:13:21,680

really interesting in the the soyuz

327

00:13:24,629 --> 00:13:23,200

launch was when the staging of the

328

00:13:26,790 --> 00:13:24,639

rockets i think it was second and third

329

00:13:28,230 --> 00:13:26,800

stage the second stage shuts out you

330

00:13:29,509 --> 00:13:28,240

kind of get thrown out of your seat and

331

00:13:31,190 --> 00:13:29,519

then the third stage lights and you kind

332

00:13:32,790 --> 00:13:31,200

of get thrown back of course you're

333

00:13:33,990 --> 00:13:32,800

strapped in very very tightly so you're

334

00:13:36,790 --> 00:13:34,000

not really getting thrown around but you

335

00:13:38,790 --> 00:13:36,800

could feel that that that that bump if

336

00:13:39,910 --> 00:13:38,800

you will and that was that was kind of a

337

00:13:41,750 --> 00:13:39,920

lot of fun so they're quite a bit

338

00:13:43,829 --> 00:13:41,760

different those vehicles but uh both of

339

00:13:46,629 --> 00:13:43,839

them worked fantastic and

340

00:13:48,629 --> 00:13:46,639

i would write either one of them again

341

00:13:50,470 --> 00:13:48,639

station this is houston acr that

342

00:13:52,389 --> 00:13:50,480

concludes the rensselaer polytechnic

343

00:13:53,990 --> 00:13:52,399

institute portion of the event please

344

00:13:57,670 --> 00:13:54,000

stand by for a voice check from the

345

00:14:03,110 --> 00:13:59,350

station this is university of houston

346

00:14:04,629 --> 00:14:03,120

clear lake how do you hear me

347

00:14:05,990 --> 00:14:04,639

university of houston clear lake i hear

348

00:14:07,350 --> 00:14:06,000

you loud and clear welcome to the space

349

00:14:08,389 --> 00:14:07,360

station

350

00:14:10,629 --> 00:14:08,399

thank you

351

00:14:11,990 --> 00:14:10,639

this is uh this is aaron hirage physics

352

00:14:14,150 --> 00:14:12,000

engineering major

353

00:14:15,910 --> 00:14:14,160

and my question is what experience at

354

00:14:17,910 --> 00:14:15,920

university of houston clear lake has

355

00:14:23,189 --> 00:14:17,920

helped you most in your activities up

356

00:14:26,230 --> 00:14:24,470

yeah that's a great question you know

357

00:14:28,069 --> 00:14:26,240

when i first got to when i first moved

358

00:14:29,990 --> 00:14:28,079

to houston i was working as an engineer

359

00:14:32,150 --> 00:14:30,000

at the johnson space center and i

360

00:14:33,670 --> 00:14:32,160

decided i want to continue my education

361

00:14:35,990 --> 00:14:33,680

of course university of houston clear

362

00:14:37,509 --> 00:14:36,000

lake is a is a great place to go it's

363

00:14:39,030 --> 00:14:37,519

it's a great campus has lots of

364

00:14:41,269 --> 00:14:39,040

opportunities and different programs and

365

00:14:43,189 --> 00:14:41,279

of course very very convenient located

366

00:14:45,110 --> 00:14:43,199

right next to the johnson space center

367

00:14:46,470 --> 00:14:45,120

so i can't say that there's any specific

368

00:14:47,910 --> 00:14:46,480

experience that i got at the university

369

00:14:49,829 --> 00:14:47,920

of houston clear lake but i can't say

370

00:14:51,750 --> 00:14:49,839

that you know going there meeting the

371

00:14:53,829 --> 00:14:51,760

folks having that experience just in

372

00:14:55,750 --> 00:14:53,839

general of attending the school there

373

00:14:57,269 --> 00:14:55,760

and getting the degree of course getting

374

00:15:02,949 --> 00:14:57,279

that master's degree had a lot to do

375

00:15:06,870 --> 00:15:05,269

matthew smith finance here

376

00:15:08,710 --> 00:15:06,880

what would you say are the differences

377

00:15:10,710 --> 00:15:08,720

in preparing yourself for

378

00:15:12,389 --> 00:15:10,720

long-term weightlessness on the iss

379

00:15:17,509 --> 00:15:12,399

versus short term on the space shuttle

380

00:15:21,350 --> 00:15:19,189

uh yeah let's see

381

00:15:23,590 --> 00:15:21,360

long term versus short term

382

00:15:25,670 --> 00:15:23,600

i really didn't prepare any differently

383

00:15:27,910 --> 00:15:25,680

for short term missions basically you

384

00:15:29,269 --> 00:15:27,920

spend a lot of time at the gym before i

385

00:15:30,949 --> 00:15:29,279

launch you know from a physical

386

00:15:32,870 --> 00:15:30,959

perspective i spent a lot of time at the

387

00:15:34,949 --> 00:15:32,880

gym for my shuttle missions as well as

388

00:15:37,670 --> 00:15:34,959

my space station missions i tried to be

389

00:15:39,350 --> 00:15:37,680

as good a shape as i could before launch

390

00:15:41,110 --> 00:15:39,360

and now the big difference is once you

391

00:15:42,550 --> 00:15:41,120

get up here for space shuttle missions i

392

00:15:44,389 --> 00:15:42,560

really didn't exercise while i was up

393

00:15:45,829 --> 00:15:44,399

here i was up here for only two weeks

394

00:15:48,230 --> 00:15:45,839

did a lot of spacewalks so i thought

395

00:15:49,990 --> 00:15:48,240

that was enough exercise for me but now

396

00:15:51,749 --> 00:15:50,000

on a long duration mission i really

397

00:15:53,990 --> 00:15:51,759

spend a lot of time every day i work out

398

00:15:54,790 --> 00:15:54,000

for about two hours a day running biking

399

00:15:56,790 --> 00:15:54,800

and

400

00:15:59,110 --> 00:15:56,800

lifting weights on a resistive exercise

401
00:16:00,710 --> 00:15:59,120
device so pre-launch not so much

402
00:16:02,389 --> 00:16:00,720
different in terms of physical

403
00:16:03,509 --> 00:16:02,399
preparation but during the mission

404
00:16:06,550 --> 00:16:03,519
that's when it's really quite a bit

405
00:16:14,230 --> 00:16:10,150
hi my name is ingley and uh my question

406
00:16:15,509 --> 00:16:14,240
is um have you have ever any chat excuse

407
00:16:17,749 --> 00:16:15,519
me

408
00:16:19,350 --> 00:16:17,759
have you have any challenge working with

409
00:16:25,430 --> 00:16:19,360
other astronauts

410
00:16:27,829 --> 00:16:26,550
yeah we have a lot of different

411
00:16:29,430 --> 00:16:27,839
astronauts from a lot of different

412
00:16:31,269 --> 00:16:29,440
countries right up here for now for

413
00:16:32,629 --> 00:16:31,279

example now we have three uh russian

414

00:16:34,389 --> 00:16:32,639

cosmonauts we have two american

415

00:16:36,629 --> 00:16:34,399

astronauts and our commander is a

416

00:16:38,870 --> 00:16:36,639

japanese astronaut of course we have

417

00:16:40,230 --> 00:16:38,880

eupean astronauts canadian astronauts

418

00:16:42,150 --> 00:16:40,240

we have folks from all over the world

419

00:16:43,829 --> 00:16:42,160

which is great but you know we don't see

420

00:16:45,670 --> 00:16:43,839

each other as people from different

421

00:16:48,150 --> 00:16:45,680

countries we see each other just as as

422

00:16:50,629 --> 00:16:48,160

crewmates i don't think of koichi wakata

423

00:16:51,910 --> 00:16:50,639

the japanese astronaut or my russian

424

00:16:53,749 --> 00:16:51,920

crewmates i don't think of them as

425

00:16:56,069 --> 00:16:53,759

russians or as japanese i think of them

426
00:16:57,990 --> 00:16:56,079
as just my crewmates so on on a personal

427
00:17:00,230 --> 00:16:58,000
basis we get along fantastically and on

428
00:17:02,310 --> 00:17:00,240
a professional basis also so

429
00:17:03,590 --> 00:17:02,320
again those kind of those those

430
00:17:05,270 --> 00:17:03,600
those borders or those boundaries

431
00:17:06,710 --> 00:17:05,280
between or differences between people

432
00:17:08,069 --> 00:17:06,720
and differences in between countries

433
00:17:09,590 --> 00:17:08,079
they go away when you get up here and

434
00:17:13,110 --> 00:17:09,600
just work on a day-to-day basis with

435
00:17:18,230 --> 00:17:15,990
hi rick i'm susan mcintyre psychology

436
00:17:20,390 --> 00:17:18,240
major and my daughter and i wanted to

437
00:17:26,230 --> 00:17:20,400
know if weightlessness had an effect on

438
00:17:29,990 --> 00:17:28,390

yeah thanks susan um yeah it does i

439

00:17:31,270 --> 00:17:30,000

think it does so you know i think it's

440

00:17:32,870 --> 00:17:31,280

not just the weightlessness of course

441

00:17:35,190 --> 00:17:32,880

the weightlessness causes your body to

442

00:17:36,870 --> 00:17:35,200

change when you first get up here a lot

443

00:17:38,710 --> 00:17:36,880

of the blood you have too much blood

444

00:17:40,150 --> 00:17:38,720

basically too much fluid in your system

445

00:17:41,430 --> 00:17:40,160

and your head gets kind of puffy you

446

00:17:42,549 --> 00:17:41,440

feel kind of warm you have maybe a

447

00:17:44,070 --> 00:17:42,559

little bit of a headache it takes a

448

00:17:46,230 --> 00:17:44,080

little while for your body to adjust

449

00:17:47,430 --> 00:17:46,240

maybe get rid of some of that fluid and

450

00:17:48,870 --> 00:17:47,440

there's a lot of other changes your

451
00:17:50,470 --> 00:17:48,880
body's going through so it takes time it

452
00:17:52,230 --> 00:17:50,480
actually takes months maybe actually to

453
00:17:53,750 --> 00:17:52,240
fully adjust to weightlessness but then

454
00:17:55,590 --> 00:17:53,760
there's also environmental factors you

455
00:17:57,430 --> 00:17:55,600
know the co2 level up here is higher

456
00:17:59,590 --> 00:17:57,440
than what we're used to on earth

457
00:18:00,630 --> 00:17:59,600
the noise factor the close quarters

458
00:18:02,390 --> 00:18:00,640
things like that there's a lot of

459
00:18:04,150 --> 00:18:02,400
different things that affect your mood

460
00:18:05,990 --> 00:18:04,160
but it's uh overall most of that is

461
00:18:07,190 --> 00:18:06,000
overcome by the fantastic views we have

462
00:18:09,510 --> 00:18:07,200
out the earth and the fact that we could

463
00:18:11,430 --> 00:18:09,520

float around and we do a lot of exciting

464

00:18:18,150 --> 00:18:11,440

work up here so it's actually a pretty

465

00:18:21,909 --> 00:18:20,549

hi this is marvin childress college of

466

00:18:23,830 --> 00:18:21,919

education

467

00:18:26,070 --> 00:18:23,840

i was wondering what actions can we take

468

00:18:28,789 --> 00:18:26,080

as citizens to help advocate for the

469

00:18:30,470 --> 00:18:28,799

international space station research

470

00:18:34,710 --> 00:18:30,480

as well as other space exploration

471

00:18:38,310 --> 00:18:36,070

yeah that's a good question of course

472

00:18:40,070 --> 00:18:38,320

we're always looking for the folks to

473

00:18:42,390 --> 00:18:40,080

support us you know nasa has lots of

474

00:18:44,310 --> 00:18:42,400

outreach programs to try to educate the

475

00:18:45,909 --> 00:18:44,320

general public about what we do up here

476

00:18:48,070 --> 00:18:45,919

and try to get folks excited try to get

477

00:18:50,390 --> 00:18:48,080

youngsters excited about math science

478

00:18:52,310 --> 00:18:50,400

and technologies to promote the sciences

479

00:18:53,270 --> 00:18:52,320

and get kids into the to study these

480

00:18:55,029 --> 00:18:53,280

things

481

00:18:56,470 --> 00:18:55,039

i think the average person of course can

482

00:18:58,390 --> 00:18:56,480

show their support for nasa in a lot of

483

00:18:59,750 --> 00:18:58,400

different ways probably the uh you know

484

00:19:02,150 --> 00:18:59,760

if it depends on how far you want to go

485

00:19:03,909 --> 00:19:02,160

of course uh talking to your uh your

486

00:19:05,669 --> 00:19:03,919

elected officials those are the folks

487

00:19:07,190 --> 00:19:05,679

who make the decisions on how much money

488

00:19:08,630 --> 00:19:07,200

nasa gets those are the folks who make

489

00:19:09,990 --> 00:19:08,640

the decisions and

490

00:19:11,990 --> 00:19:10,000

the things that we do up here what

491

00:19:13,669 --> 00:19:12,000

programs survive what programs get

492

00:19:15,190 --> 00:19:13,679

canceled things like that so i think

493

00:19:18,789 --> 00:19:15,200

talking to the elected officials is the

494

00:19:27,430 --> 00:19:18,799

best way to show your support for nasa

495

00:19:34,630 --> 00:19:29,990

station this is houston acr thank you