



1
00:00:08,710 --> 00:00:02,950
station houston are you ready for the

2
00:00:08,720 --> 00:00:12,870
we are ready for the event

3
00:00:20,390 --> 00:00:15,910
keigo tv this is mission control houston

4
00:00:25,509 --> 00:00:22,470
station this is kgo tv how do you hear

5
00:00:31,990 --> 00:00:27,830
kgo we have you loud and clear happy to

6
00:00:35,270 --> 00:00:33,590
thanks for talking with us this morning

7
00:00:37,110 --> 00:00:35,280
i want to address my first question to

8
00:00:38,389 --> 00:00:37,120
kate who's our hometown astronaut uh

9
00:00:40,069 --> 00:00:38,399
folks back at your high school and at

10
00:00:41,110 --> 00:00:40,079
stanford are awfully proud of you how do

11
00:00:42,790 --> 00:00:41,120
you feel about all the support you're

12
00:00:43,910 --> 00:00:42,800
getting from back home and about the

13
00:00:47,910 --> 00:00:43,920

school assembly you're going to get to

14

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

well it's really fantastic to know that

15

00:00:54,069 --> 00:00:51,760

folks at home are supporting us we're on

16

00:00:56,229 --> 00:00:54,079

this orbital outpost and we circle the

17

00:00:58,150 --> 00:00:56,239

globe all the time but every time we

18

00:01:00,069 --> 00:00:58,160

have a pass over the u.s and over

19

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

california i try to make sure and look

20

00:01:05,750 --> 00:01:02,000

out and wave a little bit to everybody

21

00:01:08,550 --> 00:01:07,109

okay this was a long road for you

22

00:01:09,990 --> 00:01:08,560

getting to be an astronaut i heard you

23

00:01:12,149 --> 00:01:10,000

had to learn russian learn to fly a

24

00:01:13,510 --> 00:01:12,159

fighter jet how long did you have to do

25

00:01:17,990 --> 00:01:13,520

all that and how are you rushing and

26

00:01:22,789 --> 00:01:20,630

well it's about a seven year process

27

00:01:24,469 --> 00:01:22,799

total that's been for me so far and that

28

00:01:27,590 --> 00:01:24,479

includes a couple years at the beginning

29

00:01:29,109 --> 00:01:27,600

when we first get to nasa and we do take

30

00:01:31,350 --> 00:01:29,119

a lot of language training that never

31

00:01:33,510 --> 00:01:31,360

stops we work really closely with our

32

00:01:35,510 --> 00:01:33,520

russian colleagues and part of our

33

00:01:37,749 --> 00:01:35,520

training does involve aviation it's an

34

00:01:40,149 --> 00:01:37,759

excellent preparation and excellent

35

00:01:41,510 --> 00:01:40,159

training for space flight and so i have

36

00:01:43,510 --> 00:01:41,520

to say those are two of my favorite

37

00:01:45,990 --> 00:01:43,520

things that we've had on board the space

38

00:01:47,510 --> 00:01:46,000

station uh preparation for training up

39

00:01:50,789 --> 00:01:47,520

on up here on space station are the

40

00:01:51,910 --> 00:01:50,799

russian lessons and the flying

41

00:01:53,830 --> 00:01:51,920

danny

42

00:01:55,190 --> 00:01:53,840

back here on earth you studied hiv is

43

00:01:57,590 --> 00:01:55,200

the research you're doing in space going

44

00:01:59,030 --> 00:01:57,600

to help us understand viruses and and

45

00:02:00,389 --> 00:01:59,040

that sort of illness in a different way

46

00:02:02,469 --> 00:02:00,399

than what we were able to do here on

47

00:02:07,350 --> 00:02:02,479

earth and and what are where are you in

48

00:02:14,229 --> 00:02:10,229

yeah so i actually studied uh hiv as

49

00:02:16,470 --> 00:02:14,239

well as ebola smallpox marburg and lhasa

50

00:02:19,190 --> 00:02:16,480

a lot of the really dangerous ones so we

51
00:02:21,110 --> 00:02:19,200
don't have those on space station but we

52
00:02:22,710 --> 00:02:21,120
are understanding how viruses in the

53
00:02:24,630 --> 00:02:22,720
immune system interact and there's

54
00:02:26,550 --> 00:02:24,640
actually a really interesting phenomenon

55
00:02:28,869 --> 00:02:26,560
on board where you get some dormant

56
00:02:30,390 --> 00:02:28,879
virus reactivation in the human body so

57
00:02:32,470 --> 00:02:30,400
i think we're seeing a lot of really

58
00:02:34,710 --> 00:02:32,480
undiscovered things there's a lot of

59
00:02:37,190 --> 00:02:34,720
immunology research and we're just

60
00:02:39,030 --> 00:02:37,200
working on some cell culture and cardiac

61
00:02:40,869 --> 00:02:39,040
research today there's just a whole

62
00:02:44,309 --> 00:02:40,879
variety of things to explore about human

63
00:02:47,670 --> 00:02:46,229

jeff what can you tell us about kate as

64

00:02:49,110 --> 00:02:47,680

a crewmate what's it been like teaching

65

00:02:50,309 --> 00:02:49,120

her the ropes of living in space and

66

00:02:55,910 --> 00:02:50,319

what are you hoping you can learn from

67

00:02:59,589 --> 00:02:57,910

well it's always fun to to be able to

68

00:03:01,270 --> 00:02:59,599

share the experience with somebody for

69

00:03:03,430 --> 00:03:01,280

the first time in both

70

00:03:05,830 --> 00:03:03,440

kate and takuya

71

00:03:07,750 --> 00:03:05,840

came up together for their first flight

72

00:03:09,350 --> 00:03:07,760

and they've been

73

00:03:11,509 --> 00:03:09,360

a lot of fun to have on board they bring

74

00:03:13,589 --> 00:03:11,519

a lot of enthusiasm on board of course

75

00:03:15,750 --> 00:03:13,599

they they hit the ground running

76

00:03:17,990 --> 00:03:15,760

figuratively speaking and they both are

77

00:03:20,949 --> 00:03:18,000

doing very well and and of course she

78

00:03:23,350 --> 00:03:20,959

brings a uh a unique background to the

79

00:03:25,990 --> 00:03:23,360

crew and with her science background and

80

00:03:27,509 --> 00:03:26,000

uh is certainly helping me appreciate

81

00:03:30,869 --> 00:03:27,519

the science and the research that we

82

00:03:31,990 --> 00:03:30,879

have going on board now as well as uh

83

00:03:35,509 --> 00:03:32,000

what it looks like we're going to be

84

00:03:38,789 --> 00:03:37,350

uh jeff and then kate what are the

85

00:03:41,030 --> 00:03:38,799

things that you guys absolutely just

86

00:03:42,949 --> 00:03:41,040

love about being up there in space and

87

00:03:44,229 --> 00:03:42,959

and for kate specifically maybe what are

88

00:03:45,990 --> 00:03:44,239

the things that are different from what

89

00:03:49,750 --> 00:03:46,000

you expected and what you might miss

90

00:03:53,589 --> 00:03:51,830

well i've spent a little bit of time up

91

00:03:55,509 --> 00:03:53,599

here but i never get tired of looking

92

00:03:57,110 --> 00:03:55,519

out the window and seeing the earth and

93

00:03:59,270 --> 00:03:57,120

seeing the wide variety of things that

94

00:04:00,710 --> 00:03:59,280

you can see from the weather systems to

95

00:04:01,750 --> 00:04:00,720

the ground features to the water

96

00:04:03,910 --> 00:04:01,760

features

97

00:04:06,550 --> 00:04:03,920

to the sunrises sunsets aurora we were

98

00:04:07,270 --> 00:04:06,560

watching aurora this morning

99

00:04:09,509 --> 00:04:07,280

and

100

00:04:12,789 --> 00:04:09,519

you just you're always finding something

101
00:04:14,710 --> 00:04:12,799
new when you look out the window

102
00:04:17,430 --> 00:04:14,720
yeah and for me i think one of the most

103
00:04:19,509 --> 00:04:17,440
amazing things was actually that view

104
00:04:20,870 --> 00:04:19,519
when you're orbiting the planet and i

105
00:04:23,030 --> 00:04:20,880
frankly thought i wasn't going to be

106
00:04:24,950 --> 00:04:23,040
that surprised by it you work a number

107
00:04:27,189 --> 00:04:24,960
of years in mission control we're used

108
00:04:28,950 --> 00:04:27,199
to seeing photographs and videos from

109
00:04:30,629 --> 00:04:28,960
space and

110
00:04:33,189 --> 00:04:30,639
it's really quite surprising when you

111
00:04:35,749 --> 00:04:33,199
get up here how striking our planet is i

112
00:04:38,310 --> 00:04:35,759
remember my first thought just being

113
00:04:40,390 --> 00:04:38,320

wow you know we live on a planet and

114

00:04:42,550 --> 00:04:40,400

it's truly amazing to see

115

00:04:44,469 --> 00:04:42,560

that hasn't worn off yet i'm like jeff

116

00:04:49,030 --> 00:04:44,479

i'm still amazed every time i look out

117

00:04:52,790 --> 00:04:50,950

kate as a as a first-time space traveler

118

00:04:54,230 --> 00:04:52,800

how is the food up there do you get to

119

00:04:55,590 --> 00:04:54,240

eat any russian food or is it all

120

00:05:00,629 --> 00:04:55,600

american food and did you manage to

121

00:05:06,310 --> 00:05:02,790

it's a it's really phenomenal food up

122

00:05:07,670 --> 00:05:06,320

here so we get russian food we we can

123

00:05:09,590 --> 00:05:07,680

eat dinner with our russian colleagues

124

00:05:11,990 --> 00:05:09,600

and we all share food together we get

125

00:05:13,990 --> 00:05:12,000

american food my japanese crewmate has

126

00:05:15,990 --> 00:05:14,000

brought some japanese food

127

00:05:18,070 --> 00:05:16,000

we've brought things like hot sauces

128

00:05:19,909 --> 00:05:18,080

from around the world so it's actually

129

00:05:21,909 --> 00:05:19,919

really phenomenal cuisine

130

00:05:23,430 --> 00:05:21,919

unfortunately there's no wine on board

131

00:05:26,150 --> 00:05:23,440

space station

132

00:05:27,189 --> 00:05:26,160

but it's just a really wonderful food

133

00:05:29,430 --> 00:05:27,199

environment that's one of the great

134

00:05:31,350 --> 00:05:29,440

things actually about sharing some meal

135

00:05:32,790 --> 00:05:31,360

times with your crewmates as we get to

136

00:05:33,990 --> 00:05:32,800

try each other's food and talk a little

137

00:05:37,110 --> 00:05:34,000

bit about each other's culture and

138

00:05:40,230 --> 00:05:38,629

now the two of you are scheduled for a

139

00:05:42,390 --> 00:05:40,240

spacewalk so kate what have you been

140

00:05:44,150 --> 00:05:42,400

doing to prepare for that spacewalk and

141

00:05:45,909 --> 00:05:44,160

jeff what can you or have you been able

142

00:05:47,510 --> 00:05:45,919

to tell kate about the experience of

143

00:05:50,830 --> 00:05:47,520

installing large hardware on that

144

00:05:55,029 --> 00:05:53,590

station yeah so actually after we finish

145

00:05:56,870 --> 00:05:55,039

talking to you we're going to go into

146

00:05:58,550 --> 00:05:56,880

the airlock and and finish doing some

147

00:06:00,629 --> 00:05:58,560

more activities for some prep for the

148

00:06:02,469 --> 00:06:00,639

spacewalk we've at this point uh

149

00:06:04,550 --> 00:06:02,479

outfitted our suits we've assembled all

150

00:06:06,950 --> 00:06:04,560

the parts onto the suits the gloves and

151
00:06:08,950 --> 00:06:06,960
the boots and started to gather all the

152
00:06:10,469 --> 00:06:08,960
hardware that's needed for the spacewalk

153
00:06:14,469 --> 00:06:10,479
and i think jeff can tell you a little

154
00:06:17,189 --> 00:06:15,670
yeah we've been talking about it

155
00:06:18,550 --> 00:06:17,199
obviously when you go through the

156
00:06:20,950 --> 00:06:18,560
training

157
00:06:22,469 --> 00:06:20,960
and preparing for it you talked to a lot

158
00:06:24,950 --> 00:06:22,479
of the folks that have done them before

159
00:06:27,029 --> 00:06:24,960
so kate has a good idea uh of what's

160
00:06:28,870 --> 00:06:27,039
coming up uh but until you experience it

161
00:06:30,950 --> 00:06:28,880
of course it's it's just not quite the

162
00:06:32,710 --> 00:06:30,960
same so we spent a lot of time talking

163
00:06:34,950 --> 00:06:32,720

about what it's really like out there we

164

00:06:36,790 --> 00:06:34,960

don't have the the the gravity that we

165

00:06:39,029 --> 00:06:36,800

feel in the pool when we do the training

166

00:06:42,550 --> 00:06:39,039

so what are the differences there we

167

00:06:44,230 --> 00:06:42,560

don't lose or move large mass objects on

168

00:06:45,590 --> 00:06:44,240

the ground like we do here so it's a

169

00:06:47,590 --> 00:06:45,600

little bit different some of those

170

00:06:48,790 --> 00:06:47,600

things we can practice inside with heavy

171

00:06:50,469 --> 00:06:48,800

objects and but we're going to be

172

00:06:53,110 --> 00:06:50,479

talking through the choreography of the

173

00:06:55,510 --> 00:06:53,120

spacewalk uh over and over again so that

174

00:06:58,070 --> 00:06:55,520

we we don't have to uh use a checklist

175

00:07:00,230 --> 00:06:58,080

we can we know it basically by heart and

176

00:07:04,469 --> 00:07:00,240

of course we'll be talking our our way

177

00:07:07,909 --> 00:07:05,830

we talk about the space station as a

178

00:07:09,589 --> 00:07:07,919

floating or an orbiting laboratory

179

00:07:11,749 --> 00:07:09,599

what's the kind of science you can do up

180

00:07:13,270 --> 00:07:11,759

there that you just can't do on earth

181

00:07:15,189 --> 00:07:13,280

and i understand you've got this tiny

182

00:07:17,189 --> 00:07:15,199

dna sequencer and even some cell

183

00:07:18,629 --> 00:07:17,199

cultures from stanford why would you do

184

00:07:21,990 --> 00:07:18,639

that work in space as opposed to on

185

00:07:25,749 --> 00:07:23,749

yeah that's a really great question and

186

00:07:29,110 --> 00:07:25,759

and we evaluate all of the research that

187

00:07:31,670 --> 00:07:29,120

we send up here uh for specifically uh

188

00:07:33,510 --> 00:07:31,680

for why do we need to use microgravity

189

00:07:35,990 --> 00:07:33,520

or the space environment to answer these

190

00:07:37,909 --> 00:07:36,000

questions so for example with the cells

191

00:07:40,550 --> 00:07:37,919

the cardiomyocytes that we're using from

192

00:07:42,070 --> 00:07:40,560

stanford those are heart cells and one

193

00:07:45,110 --> 00:07:42,080

of the things that we're very interested

194

00:07:47,350 --> 00:07:45,120

in is cardiovascular function in space

195

00:07:50,309 --> 00:07:47,360

as you get all this fluid shift

196

00:07:52,790 --> 00:07:50,319

in your body the the gravity vector is

197

00:07:53,909 --> 00:07:52,800

no longer draining fluid into your legs

198

00:07:56,390 --> 00:07:53,919

and that actually affects the

199

00:07:58,469 --> 00:07:56,400

cardiovascular system the second part of

200

00:08:00,869 --> 00:07:58,479

that is just the technology development

201
00:08:03,430 --> 00:08:00,879
aspect of can we do cell culture in

202
00:08:05,990 --> 00:08:03,440
space on the earth you would always have

203
00:08:08,390 --> 00:08:06,000
a fluid medium that's floating on top of

204
00:08:10,790 --> 00:08:08,400
the cells and is stuck to the cells up

205
00:08:12,710 --> 00:08:10,800
here the water forms droplets and floats

206
00:08:15,029 --> 00:08:12,720
away so we have some specialized

207
00:08:16,469 --> 00:08:15,039
technology to keep all of that cell

208
00:08:18,070 --> 00:08:16,479
culture medium

209
00:08:20,869 --> 00:08:18,080
together and we're doing the kind of

210
00:08:22,710 --> 00:08:20,879
demonstrations that show that we can do

211
00:08:25,270 --> 00:08:22,720
cell culture and we can grow any kind of

212
00:08:27,749 --> 00:08:25,280
cells in space to investigate some

213
00:08:30,550 --> 00:08:27,759

really fascinating principles about how

214

00:08:33,029 --> 00:08:30,560

the cells grow divide organize their

215

00:08:37,909 --> 00:08:33,039

structure signal to each other and even

216

00:08:41,110 --> 00:08:39,670

what are you hoping to talk to the folks

217

00:08:42,149 --> 00:08:41,120

at vintage high school about what could

218

00:08:43,509 --> 00:08:42,159

you say to them now and what are you

219

00:08:45,350 --> 00:08:43,519

hoping to talk to them about when you do

220

00:08:49,269 --> 00:08:45,360

that assembly with them in a little

221

00:08:53,670 --> 00:08:50,870

well i think any time you get a chance

222

00:08:56,790 --> 00:08:53,680

to talk to students it's just fantastic

223

00:08:58,790 --> 00:08:56,800

it really is inspiring to us and we draw

224

00:09:00,949 --> 00:08:58,800

a lot from their enthusiasm they're

225

00:09:03,030 --> 00:09:00,959

always extremely interested and curious

226

00:09:04,710 --> 00:09:03,040

about space flight what we're doing up

227

00:09:06,070 --> 00:09:04,720

here a lot of the questions that you

228

00:09:07,829 --> 00:09:06,080

have about the research that we do in

229

00:09:09,990 --> 00:09:07,839

the orbiting laboratory we'll get that

230

00:09:11,590 --> 00:09:10,000

from students as well so it's really fun

231

00:09:13,910 --> 00:09:11,600

for us just to be able to share a little

232

00:09:16,310 --> 00:09:13,920

bit of our experience and what it's like

233

00:09:19,990 --> 00:09:16,320

actually living and working in space on

234

00:09:27,110 --> 00:09:21,269

last question what do you do with your

235

00:09:31,190 --> 00:09:29,030

so i got a great piece of advice before

236

00:09:33,030 --> 00:09:31,200

flight which was don't do anything in

237

00:09:35,430 --> 00:09:33,040

space that you can do

238

00:09:37,350 --> 00:09:35,440

on the ground so we actually

239

00:09:39,990 --> 00:09:37,360

spend a lot of our time looking at the

240

00:09:41,670 --> 00:09:40,000

earth taking pictures

241

00:09:43,829 --> 00:09:41,680

i'm sort of always poking around for a

242

00:09:45,670 --> 00:09:43,839

new science experiment to do

243

00:09:48,150 --> 00:09:45,680

the ground's always got lots of work for

244

00:09:49,670 --> 00:09:48,160

us and and it's pretty fun work so we

245

00:09:50,949 --> 00:09:49,680

enjoy doing a lot of that in our free

246

00:09:52,790 --> 00:09:50,959

time

247

00:09:55,590 --> 00:09:52,800

and i'll let jeff let you know what he

248

00:09:58,710 --> 00:09:57,269

well for me like i mentioned before you

249

00:10:01,190 --> 00:09:58,720

never get tired of viewing the earth so

250

00:10:03,829 --> 00:10:01,200

i i've had a hobby up here taking a lot

251

00:10:05,509 --> 00:10:03,839

of photography to try to capture

252

00:10:11,350 --> 00:10:05,519

the images that you get and bring the

253

00:10:16,150 --> 00:10:13,910

station this is houston acr that

254

00:10:18,470 --> 00:10:16,160

concludes the kgo tv portion of the

255

00:10:21,910 --> 00:10:18,480

event please stand by for a voice check

256

00:10:26,949 --> 00:10:23,910

station this is history how do you hear

257

00:10:30,230 --> 00:10:28,389

history channel we have you loud and

258

00:10:33,670 --> 00:10:30,240

clear welcome aboard the international

259

00:10:36,630 --> 00:10:33,680

space station hey glad to be here how's

260

00:10:41,990 --> 00:10:38,389

good morning jacqueline it's going very

261

00:10:44,310 --> 00:10:42,000

well we stay very busy up here

262

00:10:46,790 --> 00:10:44,320

ah good times good times well thanks for

263

00:10:48,949 --> 00:10:46,800

joining us for the uh first ever space

264

00:10:51,910 --> 00:10:48,959

book live event uh now i know we've only

265

00:10:53,990 --> 00:10:51,920

got 10 minutes so uh let's get to it

266

00:10:55,590 --> 00:10:54,000

uh jeff kate can you introduce

267

00:10:59,509 --> 00:10:55,600

yourselves and tell us how long you've

268

00:11:03,430 --> 00:11:01,750

um i'm jeff williams and i launched with

269

00:11:05,670 --> 00:11:03,440

my russian crewmates two russian

270

00:11:09,269 --> 00:11:05,680

crewmates in march uh and scheduled to

271

00:11:11,190 --> 00:11:09,279

return to earth in early september

272

00:11:13,430 --> 00:11:11,200

kate rubins and i've been here just

273

00:11:14,870 --> 00:11:13,440

almost a month

274

00:11:16,630 --> 00:11:14,880

ah cool

275

00:11:22,470 --> 00:11:16,640

uh how are you guys uh enjoying it i'm

276

00:11:26,870 --> 00:11:24,630

yeah there's no denying that it's

277

00:11:30,150 --> 00:11:26,880

absolutely fantastic up here

278

00:11:31,990 --> 00:11:30,160

everything is is surprising uh it feels

279

00:11:34,710 --> 00:11:32,000

like the laws of physics have either

280

00:11:37,110 --> 00:11:34,720

changed or been extremely reinforced and

281

00:11:39,190 --> 00:11:37,120

so i'm having a great time a lot of this

282

00:11:41,030 --> 00:11:39,200

is new to me

283

00:11:42,630 --> 00:11:41,040

awesome now while in orbit can you tell

284

00:11:44,310 --> 00:11:42,640

us about the work you guys have done so

285

00:11:47,750 --> 00:11:44,320

far and and what you guys are currently

286

00:11:51,030 --> 00:11:49,509

well the work is ongoing we've had

287

00:11:54,710 --> 00:11:51,040

continuous human presence here in the

288

00:11:56,949 --> 00:11:54,720

space station for going on 16 years now

289

00:11:59,430 --> 00:11:56,959

and of course many of those uh early

290

00:12:01,910 --> 00:11:59,440

years were spent uh assembling this

291

00:12:03,829 --> 00:12:01,920

magnificent orbital outpost now it's in

292

00:12:05,670 --> 00:12:03,839

the full utilization mode so it's an

293

00:12:07,350 --> 00:12:05,680

orbiting laboratory we've got a lot of

294

00:12:08,550 --> 00:12:07,360

experiments going on and they're always

295

00:12:10,790 --> 00:12:08,560

coming and going so we're doing

296

00:12:12,949 --> 00:12:10,800

something new across the spectrum of all

297

00:12:14,710 --> 00:12:12,959

the sciences of course this is a big

298

00:12:16,310 --> 00:12:14,720

complex orbiting laboratory that needs

299

00:12:18,710 --> 00:12:16,320

to be maintained so we spend time

300

00:12:20,870 --> 00:12:18,720

maintaining it we also spend some time

301

00:12:22,230 --> 00:12:20,880

repairing it when things break

302

00:12:24,150 --> 00:12:22,240

and occasionally like we're looking

303

00:12:26,389 --> 00:12:24,160

forward to in a few weeks here we get to

304

00:12:28,550 --> 00:12:26,399

go outside do a space walk and do those

305

00:12:31,430 --> 00:12:28,560

same kinds of activities

306

00:12:32,710 --> 00:12:31,440

either repairing or maintaining the

307

00:12:35,110 --> 00:12:32,720

station in this case we're going to be

308

00:12:36,470 --> 00:12:35,120

adding a docking adapter

309

00:12:38,629 --> 00:12:36,480

for future

310

00:12:41,190 --> 00:12:38,639

crewed vehicles

311

00:12:42,949 --> 00:12:41,200

very cool now do you guys operate on a

312

00:12:47,110 --> 00:12:42,959

seven day work week do they give you any

313

00:12:51,269 --> 00:12:49,750

yeah so we actually work um about a five

314

00:12:53,590 --> 00:12:51,279

and a half day work week we get a little

315

00:12:55,590 --> 00:12:53,600

bit of free time to look out the window

316

00:12:57,509 --> 00:12:55,600

and see the earth we're working pretty

317

00:12:59,509 --> 00:12:57,519

long days when we're up here there's a

318

00:13:02,870 --> 00:12:59,519

lot of work to be done there's really a

319

00:13:04,389 --> 00:13:02,880

fantastic schedule for us of research

320

00:13:07,269 --> 00:13:04,399

there's hundreds of experiments that

321

00:13:09,190 --> 00:13:07,279

we're doing on board every day and so we

322

00:13:10,949 --> 00:13:09,200

want to put the time in and make sure we

323

00:13:11,910 --> 00:13:10,959

get good data and good results and

324

00:13:13,509 --> 00:13:11,920

there's always a little bit of

325

00:13:15,670 --> 00:13:13,519

maintenance work to be done like jeff

326

00:13:17,670 --> 00:13:15,680

said but it's pretty enjoyable when you

327

00:13:19,990 --> 00:13:17,680

can float upside down and sideways to

328

00:13:21,910 --> 00:13:20,000

get your maintenance work done

329

00:13:24,550 --> 00:13:21,920

very cool now there's been so many

330

00:13:29,430 --> 00:13:24,560

advances in space history what inspired

331

00:13:34,389 --> 00:13:31,829

well for me i think certainly i grew up

332

00:13:36,790 --> 00:13:34,399

in the apollo era and i was old enough

333

00:13:39,350 --> 00:13:36,800

to remember the apollo 11 moon landing

334

00:13:42,470 --> 00:13:39,360

so that certainly was an inspiration but

335

00:13:44,230 --> 00:13:42,480

i first realized that it was possible

336

00:13:45,829 --> 00:13:44,240

for me when i was at the military

337

00:13:48,389 --> 00:13:45,839

academy at west point i read the book

338

00:13:50,870 --> 00:13:48,399

the right stuff the first army astronaut

339

00:13:52,150 --> 00:13:50,880

general bob stewart was selected

340

00:13:54,069 --> 00:13:52,160

and of course i was going to i was

341

00:13:56,389 --> 00:13:54,079

anticipating a career in the army so i

342

00:13:57,910 --> 00:13:56,399

knew it was possible as an army officer

343

00:14:00,710 --> 00:13:57,920

and that's when i set it as a goal i

344

00:14:03,030 --> 00:14:00,720

think it was 1978 79

345

00:14:08,389 --> 00:14:03,040

and it took me until 96 to be selected

346

00:14:12,629 --> 00:14:10,069

yeah and when i was a kid ever since i

347

00:14:15,110 --> 00:14:12,639

can remember i had a list of career

348

00:14:16,870 --> 00:14:15,120

goals and astronaut was one of them

349

00:14:17,910 --> 00:14:16,880

and it wasn't until i was about in high

350

00:14:20,150 --> 00:14:17,920

school

351

00:14:22,470 --> 00:14:20,160

that it it seemed like maybe astronaut

352

00:14:24,389 --> 00:14:22,480

wasn't just an absolute

353

00:14:26,629 --> 00:14:24,399

uh number one career choice that was

354

00:14:29,030 --> 00:14:26,639

going to happen so i let that go for a

355

00:14:33,189 --> 00:14:29,040

little while and then applied really as

356

00:14:34,470 --> 00:14:33,199

soon as i had the minimum qualifications

357

00:14:36,870 --> 00:14:34,480

can you tell us about some of the

358

00:14:41,110 --> 00:14:36,880

preparation you guys went through to

359

00:14:44,389 --> 00:14:42,550

yeah we do a lot of training on the

360

00:14:46,470 --> 00:14:44,399

ground so it's years of training before

361

00:14:49,110 --> 00:14:46,480

we get assigned to mission and and we

362

00:14:50,629 --> 00:14:49,120

fly and uh it's a it seems like a kind

363

00:14:52,790 --> 00:14:50,639

of a grab bag of training it's really

364

00:14:55,269 --> 00:14:52,800

this pretty diverse set of training but

365

00:14:56,949 --> 00:14:55,279

each element really comes to play once

366

00:14:59,269 --> 00:14:56,959

you're on board the space station so we

367

00:15:01,990 --> 00:14:59,279

do things like russian language we do a

368

00:15:04,389 --> 00:15:02,000

lot of aviation training and flying we

369

00:15:07,750 --> 00:15:04,399

train for eva we train with the robotic

370

00:15:09,590 --> 00:15:07,760

arm and so you end up being a specialist

371

00:15:11,509 --> 00:15:09,600

in a whole bunch of different areas it's

372

00:15:13,750 --> 00:15:11,519

a lot of fun on earth but it's really

373

00:15:15,350 --> 00:15:13,760

fun to see how it all comes together

374

00:15:17,990 --> 00:15:15,360

when we're doing our actual execution of

375

00:15:19,750 --> 00:15:18,000

the mission on board i was also add that

376

00:15:21,670 --> 00:15:19,760

this is in an international space

377

00:15:24,230 --> 00:15:21,680

station with uh

378

00:15:26,230 --> 00:15:24,240

contributions from russia the european

379

00:15:28,310 --> 00:15:26,240

space agency japan canada and of course

380

00:15:29,829 --> 00:15:28,320

nasa so we end up traveling to all those

381

00:15:32,389 --> 00:15:29,839

places and training in those

382

00:15:34,150 --> 00:15:32,399

environments which is a

383

00:15:38,949 --> 00:15:34,160

pretty

384

00:15:41,269 --> 00:15:38,959

experience as well also up here we can't

385

00:15:43,350 --> 00:15:41,279

call the plumber or the electrician or

386

00:15:44,949 --> 00:15:43,360

even the the emergency medical team if

387

00:15:47,670 --> 00:15:44,959

something goes wrong so we get training

388

00:15:49,189 --> 00:15:47,680

in all those areas as well

389

00:15:50,870 --> 00:15:49,199

wow see it's like a

390

00:15:53,910 --> 00:15:50,880

literally a one-man band with every

391

00:16:00,710 --> 00:15:57,189

well i would say a six-person crew

392

00:16:03,590 --> 00:16:00,720

a six-person team along with a very

393

00:16:07,030 --> 00:16:03,600

extensive uh

394

00:16:10,870 --> 00:16:07,040

ground team in houston in moscow in

395

00:16:13,189 --> 00:16:10,880

munich germany and scuba japan as well

396

00:16:15,189 --> 00:16:13,199

yep very cool all right now we have some

397

00:16:17,749 --> 00:16:15,199

questions from some of our fans

398

00:16:20,150 --> 00:16:17,759

um elizabeth i would like to know what

399

00:16:21,670 --> 00:16:20,160

was the most surprising part about being

400

00:16:23,269 --> 00:16:21,680

on the space station

401
00:16:24,870 --> 00:16:23,279
or what is

402
00:16:31,030 --> 00:16:24,880
and something that you maybe didn't

403
00:16:34,389 --> 00:16:33,269
well nasa has prepared us really well

404
00:16:37,350 --> 00:16:34,399
but i think

405
00:16:39,590 --> 00:16:37,360
nobody can fully communicate to you what

406
00:16:41,910 --> 00:16:39,600
it's like when you see the earth and to

407
00:16:44,150 --> 00:16:41,920
be passing over all these different

408
00:16:46,790 --> 00:16:44,160
places in the globe so just as an

409
00:16:50,389 --> 00:16:46,800
example for today uh jeff showed me the

410
00:16:53,030 --> 00:16:50,399
himalayas and and uh how the earth uh is

411
00:16:55,110 --> 00:16:53,040
is got all of these different dimensions

412
00:16:56,230 --> 00:16:55,120
when you start getting the mountainous

413
00:16:58,790 --> 00:16:56,240

structure

414

00:17:00,470 --> 00:16:58,800

we looked at the aurora i saw a

415

00:17:02,230 --> 00:17:00,480

meteorite going through the atmosphere

416

00:17:04,549 --> 00:17:02,240

for the first time so there's really

417

00:17:06,789 --> 00:17:04,559

nothing quite to prepare you for all

418

00:17:08,390 --> 00:17:06,799

these different sites that you see even

419

00:17:11,110 --> 00:17:08,400

though you can do a lot of studying on

420

00:17:15,750 --> 00:17:13,750

very cool now ayla asks after spending

421

00:17:17,829 --> 00:17:15,760

time living in space do you think it

422

00:17:19,510 --> 00:17:17,839

actually will be possible for humans to

423

00:17:20,309 --> 00:17:19,520

inhabit outer space

424

00:17:21,909 --> 00:17:20,319

and

425

00:17:25,429 --> 00:17:21,919

when do you think that's going to really

426

00:17:28,630 --> 00:17:27,110

well i think we're inhabiting outer

427

00:17:30,950 --> 00:17:28,640

space right now

428

00:17:33,590 --> 00:17:30,960

for six month durations anyway and scott

429

00:17:35,830 --> 00:17:33,600

kelly of course stayed up here for uh

430

00:17:37,909 --> 00:17:35,840

just under a year

431

00:17:39,510 --> 00:17:37,919

and we we will inhabit will you know

432

00:17:40,470 --> 00:17:39,520

with the moon i'm sure will be in the

433

00:17:43,430 --> 00:17:40,480

future

434

00:17:45,830 --> 00:17:43,440

of course mars is the ultimate target

435

00:17:47,669 --> 00:17:45,840

but earth is very unique and that earth

436

00:17:49,110 --> 00:17:47,679

it provides all of the things necessary

437

00:17:51,190 --> 00:17:49,120

to support life

438

00:17:53,430 --> 00:17:51,200

in this destination here in the station

439

00:17:55,750 --> 00:17:53,440

as well as those others that i mentioned

440

00:17:57,909 --> 00:17:55,760

we have to bring the provisions to

441

00:18:00,870 --> 00:17:57,919

support life with us from earth you know

442

00:18:02,549 --> 00:18:00,880

the air we breathe the food the the

443

00:18:03,669 --> 00:18:02,559

other supplies that we have all come

444

00:18:04,710 --> 00:18:03,679

from earth

445

00:18:05,990 --> 00:18:04,720

so it's

446

00:18:08,150 --> 00:18:06,000

i guess you could say uniquely

447

00:18:10,549 --> 00:18:08,160

provisioned but certainly it's possible

448

00:18:14,630 --> 00:18:10,559

to inhabit places like this we've shown

449

00:18:15,830 --> 00:18:14,640

it for going on 16 years now

450

00:18:18,310 --> 00:18:15,840

very cool

451

00:18:20,789 --> 00:18:18,320

now i'm a total conspiracy theory

452

00:18:22,870 --> 00:18:20,799

tin foil hat wearing mob lunatic so i

453

00:18:25,110 --> 00:18:22,880

have to ask the question you know do you

454

00:18:26,789 --> 00:18:25,120

guys believe in intelligent life and

455

00:18:33,750 --> 00:18:26,799

have you ever seen anything that made

456

00:18:38,549 --> 00:18:35,350

certainly you see things once while you

457

00:18:40,310 --> 00:18:38,559

go what was that but never has it

458

00:18:42,310 --> 00:18:40,320

been

459

00:18:44,549 --> 00:18:42,320

even a possibility of say the the

460

00:18:46,870 --> 00:18:44,559

classic ufo that you see

461

00:18:47,590 --> 00:18:46,880

folks talk about or aliens or all that

462

00:18:49,430 --> 00:18:47,600

so

463

00:18:50,230 --> 00:18:49,440

to answer that part of the question no i

464

00:18:51,430 --> 00:18:50,240

think

465

00:18:52,710 --> 00:18:51,440

those are

466

00:18:55,750 --> 00:18:52,720

um

467

00:18:58,310 --> 00:18:56,630

all tales

468

00:19:00,390 --> 00:18:58,320

hey well guys thank you very much for

469

00:19:01,830 --> 00:19:00,400

your time and uh

470

00:19:05,110 --> 00:19:01,840

appreciate all the work you guys are

471

00:19:08,230 --> 00:19:05,120

doing and that concludes our space book

472

00:19:14,870 --> 00:19:09,750

thanks so much it was great to talk to

473

00:19:21,990 --> 00:19:17,270

station this is houston acr

474

00:19:27,190 --> 00:19:24,630

and thank you kgo tv in the history