



1  
00:00:21,670 --> 00:00:03,189  
station houston are you ready for the

2  
00:00:25,429 --> 00:00:23,830  
and i didn't get calm on that one uh

3  
00:00:32,389 --> 00:00:25,439  
karen could you check the event or check

4  
00:00:35,990 --> 00:00:33,990  
nothing there

5  
00:00:37,910 --> 00:00:36,000  
stand by

6  
00:00:39,510 --> 00:00:37,920  
we're ready for the event uh it looks

7  
00:00:46,790 --> 00:00:39,520  
like normal calm

8  
00:00:50,549 --> 00:00:48,389  
okay we're gonna flex push to talk on

9  
00:00:52,389 --> 00:00:50,559  
space to ground two for karen and uh and

10  
00:00:57,430 --> 00:00:52,399  
chris and uh just checking again are you

11  
00:01:00,549 --> 00:00:59,029  
you sure are houston we're ready for the

12  
00:01:02,950 --> 00:01:00,559  
event

13  
00:01:05,030 --> 00:01:02,960

and kansas cosmosphere this is mission

14

00:01:09,830 --> 00:01:05,040

control houston please call station for

15

00:01:13,750 --> 00:01:12,149

this is the kansas cosmosphere in

16

00:01:16,070 --> 00:01:13,760

hutchinson kansas calling the

17

00:01:21,030 --> 00:01:16,080

international space station

18

00:01:23,910 --> 00:01:22,310

you loud and clear from the

19

00:01:29,749 --> 00:01:23,920

international space station to kansas

20

00:01:34,630 --> 00:01:32,550

well welcome to the cosmosphere and

21

00:01:36,630 --> 00:01:34,640

thank you for joining us

22

00:01:38,710 --> 00:01:36,640

we have a group of students with

23

00:01:41,590 --> 00:01:38,720

questions and we're going to start with

24

00:01:43,109 --> 00:01:41,600

chase bowman

25

00:01:44,310 --> 00:01:43,119

well chris

26

00:01:46,870 --> 00:01:44,320

um

27

00:01:52,310 --> 00:01:46,880

what are your favorite earth features to

28

00:01:56,230 --> 00:01:54,469

hi chase um

29

00:01:59,190 --> 00:01:56,240

you know there's a lot of interesting

30

00:02:01,190 --> 00:01:59,200

things to look at at the earth but um

31

00:02:03,910 --> 00:02:01,200

i think i'm sort of partial to where the

32

00:02:06,230 --> 00:02:03,920

water meets the land and there's some

33

00:02:08,949 --> 00:02:06,240

neat currents that you can see and

34

00:02:11,670 --> 00:02:08,959

particularly where the rivers empty into

35

00:02:13,670 --> 00:02:11,680

the oceans and and you see the pattern

36

00:02:15,910 --> 00:02:13,680

of sediment and things like this that

37

00:02:23,430 --> 00:02:15,920

forms the river deltas so i find that

38

00:02:26,390 --> 00:02:25,030

i'm elizabeth and i have a question for

39

00:02:28,309 --> 00:02:26,400

karen

40

00:02:29,670 --> 00:02:28,319

what are some adjustments that your body

41

00:02:36,150 --> 00:02:29,680

has made since arriving to the

42

00:02:39,350 --> 00:02:37,670

our bodies do have to go through some

43

00:02:41,030 --> 00:02:39,360

adjustments in the first couple days one

44

00:02:42,790 --> 00:02:41,040

of the things we notice the most is how

45

00:02:45,430 --> 00:02:42,800

the fluid shifts in our body because

46

00:02:47,509 --> 00:02:45,440

gravity isn't pulling it down our faces

47

00:02:48,949 --> 00:02:47,519

get kind of puffed up and we also notice

48

00:02:50,710 --> 00:02:48,959

that we have to go to the bathroom quite

49

00:02:54,070 --> 00:02:50,720

a bit but once that after a couple days

50

00:02:56,550 --> 00:02:54,080

that starts to uh to normalize and we uh

51

00:02:58,309 --> 00:02:56,560

we feel fine after a couple days

52

00:03:01,030 --> 00:02:58,319

another thing our bodies what our bodies

53

00:03:03,030 --> 00:03:01,040

want to do is since we don't really use

54

00:03:05,750 --> 00:03:03,040

our bones all that much here in space

55

00:03:07,589 --> 00:03:05,760

our bodies our bones want to degrade so

56

00:03:09,589 --> 00:03:07,599

we have to do everything we possibly can

57

00:03:11,670 --> 00:03:09,599

to keep them strong so that's why we do

58

00:03:14,229 --> 00:03:11,680

special exercises and running on a

59

00:03:15,910 --> 00:03:14,239

treadmill and all of that um and also

60

00:03:18,790 --> 00:03:15,920

our hearts our hearts don't have to work

61

00:03:27,509 --> 00:03:18,800

as hard and so they want to adapt zero

62

00:03:35,910 --> 00:03:29,830

for chris how do you clean the

63

00:03:40,710 --> 00:03:39,110

well it's just so happy to have

64

00:03:42,789 --> 00:03:40,720

one of those

65

00:03:45,670 --> 00:03:42,799

devices that's helped us do that right

66

00:03:47,190 --> 00:03:45,680

here this is our space vacuum cleaner

67

00:03:49,270 --> 00:03:47,200

and

68

00:03:50,710 --> 00:03:49,280

when you drop things here on the space

69

00:03:52,470 --> 00:03:50,720

station they don't go to the floor they

70

00:03:54,550 --> 00:03:52,480

move all around and ultimately get

71

00:03:55,910 --> 00:03:54,560

sucked up into the air conditioning

72

00:03:58,390 --> 00:03:55,920

filters and that's what happens with all

73

00:03:59,910 --> 00:03:58,400

the dust karen's hair for example i

74

00:04:01,509 --> 00:03:59,920

don't have any so my hair doesn't go

75

00:04:04,070 --> 00:04:01,519

there but all of it ends up in the air

76

00:04:05,990 --> 00:04:04,080

conditioning returns and on saturday

77

00:04:08,470 --> 00:04:06,000

mornings we go around the space station

78

00:04:10,789 --> 00:04:08,480

and vacuum up all those locations

79

00:04:13,429 --> 00:04:10,799

and uh and then wipe down

80

00:04:15,190 --> 00:04:13,439

all of the common areas that we touch

81

00:04:16,949 --> 00:04:15,200

because you get you tend to be sort of a

82

00:04:18,870 --> 00:04:16,959

little greasier i think up here your

83

00:04:20,469 --> 00:04:18,880

body because you're not taking showers

84

00:04:22,629 --> 00:04:20,479

we're cleaning off with baby wipes and

85

00:04:24,469 --> 00:04:22,639

things so we need to wipe down

86

00:04:25,830 --> 00:04:24,479

the common areas common use areas like

87

00:04:27,350 --> 00:04:25,840

the kitchen and the handrails that we

88

00:04:34,230 --> 00:04:27,360

use all the time so we do that once a

89

00:04:37,510 --> 00:04:36,070

my name is katherine and i have a

90

00:04:39,189 --> 00:04:37,520

question for karen

91

00:04:44,390 --> 00:04:39,199

what are your favorite foods to eat in

92

00:04:48,469 --> 00:04:46,469

i actually like the breakfast foods

93

00:04:49,990 --> 00:04:48,479

probably the most every morning i like

94

00:04:51,749 --> 00:04:50,000

to get my coffee

95

00:04:53,110 --> 00:04:51,759

we drink coffee in a bag that looks very

96

00:04:55,110 --> 00:04:53,120

much like

97

00:04:57,350 --> 00:04:55,120

like this this is a drinking water bag

98

00:04:58,550 --> 00:04:57,360

but we drink our coffee we hydrate it

99

00:05:00,870 --> 00:04:58,560

with water

100

00:05:02,629 --> 00:05:00,880

and uh and i also like some of the

101  
00:05:05,590 --> 00:05:02,639  
cereals that we hydrate granola and

102  
00:05:07,270 --> 00:05:05,600  
oatmeal and some packaged food like a

103  
00:05:09,029 --> 00:05:07,280  
cinnamon scone is one of my favorites

104  
00:05:10,629 --> 00:05:09,039  
that comes in a pack like this

105  
00:05:15,749 --> 00:05:10,639  
and

106  
00:05:23,189 --> 00:05:15,759  
like that but i think the breakfast

107  
00:05:26,950 --> 00:05:25,510  
my name is gabriel and i have a question

108  
00:05:28,870 --> 00:05:26,960  
for chris

109  
00:05:34,870 --> 00:05:28,880  
what what do you miss most about life on

110  
00:05:40,230 --> 00:05:36,710  
well there's lots of things at a

111  
00:05:42,550 --> 00:05:40,240  
personal level i miss my family

112  
00:05:44,310 --> 00:05:42,560  
but we get i get to talk to them often

113  
00:05:46,629 --> 00:05:44,320

so that's nice but it doesn't replace

114

00:05:49,350 --> 00:05:46,639

the being home

115

00:05:54,870 --> 00:05:51,990

on a daily practical level i probably

116

00:05:56,710 --> 00:05:54,880

miss baked goods i really like chocolate

117

00:05:58,870 --> 00:05:56,720

chip cookies and brownies and those sort

118

00:06:00,469 --> 00:05:58,880

of things and although we have some

119

00:06:02,629 --> 00:06:00,479

stuff like that it's just not quite the

120

00:06:04,070 --> 00:06:02,639

same as a fresh out of the oven gooey

121

00:06:12,150 --> 00:06:04,080

chocolate chip cookie so that's probably

122

00:06:18,150 --> 00:06:15,110

my name is caleb i have a question for

123

00:06:24,550 --> 00:06:18,160

karen do you have a favorite research

124

00:06:28,870 --> 00:06:26,950

there are so many interesting projects

125

00:06:30,950 --> 00:06:28,880

that we're working on it would be hard

126  
00:06:32,390 --> 00:06:30,960  
to name a favorite but i can i can think

127  
00:06:34,550 --> 00:06:32,400  
of one that we're working on this week

128  
00:06:35,510 --> 00:06:34,560  
that is very interesting we're looking

129  
00:06:37,909 --> 00:06:35,520  
at

130  
00:06:39,909 --> 00:06:37,919  
ultrasounds of our spine because like i

131  
00:06:42,629 --> 00:06:39,919  
talked about before how our bones want

132  
00:06:44,309 --> 00:06:42,639  
to degrade when we're in space we're

133  
00:06:46,390 --> 00:06:44,319  
looking at uh

134  
00:06:49,350 --> 00:06:46,400  
our spines and how they are affected by

135  
00:06:51,270 --> 00:06:49,360  
the lack of gravity and one of the neat

136  
00:06:53,110 --> 00:06:51,280  
things about the way we're doing this is

137  
00:06:55,430 --> 00:06:53,120  
on the earth a lot of times this is done

138  
00:06:57,510 --> 00:06:55,440

with mris and other really really big

139

00:06:59,029 --> 00:06:57,520

equipment and we have to do it out of

140

00:07:00,469 --> 00:06:59,039

necessity because we don't have that

141

00:07:02,870 --> 00:07:00,479

equipment here we have to do it with

142

00:07:05,909 --> 00:07:02,880

ultrasounds and this might actually be

143

00:07:07,830 --> 00:07:05,919

useful for other places on the earth

144

00:07:10,390 --> 00:07:07,840

remote locations or places where they

145

00:07:12,230 --> 00:07:10,400

can't necessarily have an mri machine

146

00:07:15,110 --> 00:07:12,240

where they can take ultrasounds or which

147

00:07:17,270 --> 00:07:15,120

are much more compact and do diagnosis

148

00:07:19,670 --> 00:07:17,280

on people so i'm hoping that this will

149

00:07:22,150 --> 00:07:19,680

not only help

150

00:07:24,629 --> 00:07:22,160

those of us who are flying in space but

151

00:07:26,150 --> 00:07:24,639

also help people on earth to be able to

152

00:07:31,909 --> 00:07:26,160

use ultrasounds in the way we're using

153

00:07:36,070 --> 00:07:33,990

my name is madison and i have a question

154

00:07:44,070 --> 00:07:36,080

for chris how is sleeping in space

155

00:07:47,029 --> 00:07:44,869

um

156

00:07:48,950 --> 00:07:47,039

madison did you say how is living

157

00:07:54,150 --> 00:07:48,960

different or is how is bathing different

158

00:08:03,110 --> 00:07:58,550

sleeping

159

00:08:06,150 --> 00:08:03,120

so the big there's a couple differences

160

00:08:08,070 --> 00:08:06,160

that i notice i like a pillow

161

00:08:10,150 --> 00:08:08,080

and uh and your head doesn't have that

162

00:08:11,510 --> 00:08:10,160

sensation of a pillow so that takes a

163

00:08:12,869 --> 00:08:11,520

little bit of getting used to but it's

164

00:08:14,790 --> 00:08:12,879

not a big deal

165

00:08:16,230 --> 00:08:14,800

and the other weird thing

166

00:08:18,390 --> 00:08:16,240

is your arms

167

00:08:20,469 --> 00:08:18,400

you relax when you relax and fall asleep

168

00:08:23,510 --> 00:08:20,479

your arms kind of float out in front of

169

00:08:25,189 --> 00:08:23,520

you and if you do nothing to them

170

00:08:27,350 --> 00:08:25,199

they move around at night and they can

171

00:08:30,629 --> 00:08:27,360

wake you up and you wake up with a weird

172

00:08:32,230 --> 00:08:30,639

feeling that you're out of control

173

00:08:34,550 --> 00:08:32,240

so you can put them inside your sleeping

174

00:08:35,589 --> 00:08:34,560

bag or cross your arms

175

00:08:37,509 --> 00:08:35,599

different people have different

176

00:08:39,110 --> 00:08:37,519

techniques in fact we talk about it at

177

00:08:41,430 --> 00:08:39,120

meals what do you do with your arms when

178

00:08:44,070 --> 00:08:41,440

you sleep

179

00:08:46,470 --> 00:08:44,080

so that's those two things are the big

180

00:08:47,990 --> 00:08:46,480

differences how do you manage your your

181

00:08:55,269 --> 00:08:48,000

arms and legs and

182

00:08:58,630 --> 00:08:57,670

my name is emma and my question is for

183

00:09:05,509 --> 00:08:58,640

karen

184

00:09:09,190 --> 00:09:07,670

well on the weekdays we wake up about

185

00:09:11,430 --> 00:09:09,200

six o'clock in the morning we use

186

00:09:12,949 --> 00:09:11,440

greenwich mean time or gmt

187

00:09:15,030 --> 00:09:12,959

and we

188

00:09:16,389 --> 00:09:15,040

start by doing you know doing everything

189

00:09:17,829 --> 00:09:16,399

normal things that you do in the morning

190

00:09:18,870 --> 00:09:17,839

after you get out of bed and have

191

00:09:20,949 --> 00:09:18,880

breakfast

192

00:09:23,430 --> 00:09:20,959

and then we have a daily planning

193

00:09:26,070 --> 00:09:23,440

conference with all of the space centers

194

00:09:27,509 --> 00:09:26,080

around the world at about 7 or 7 30 and

195

00:09:29,110 --> 00:09:27,519

then we start our work day where we do

196

00:09:31,590 --> 00:09:29,120

various science experiments we do

197

00:09:33,590 --> 00:09:31,600

maintenance on various things we do

198

00:09:35,750 --> 00:09:33,600

transfer cargo we just had a vehicle

199

00:09:37,190 --> 00:09:35,760

arrive a couple days ago and we just

200

00:09:39,590 --> 00:09:37,200

started today transferring some of the

201  
00:09:41,190 --> 00:09:39,600  
cargo onto the space station

202  
00:09:42,790 --> 00:09:41,200  
and then we have an hour for lunch and

203  
00:09:44,870 --> 00:09:42,800  
also during the week work day we do a

204  
00:09:47,590 --> 00:09:44,880  
couple hours of exercise and then the

205  
00:09:49,590 --> 00:09:47,600  
evening around 7 or 7 30 again we have

206  
00:09:51,670 --> 00:09:49,600  
another daily planning conference with

207  
00:09:53,350 --> 00:09:51,680  
the control centers on earth

208  
00:09:55,910 --> 00:09:53,360  
and then go to bed probably about 10

209  
00:09:57,590 --> 00:09:55,920  
o'clock at night and in the weekends we

210  
00:10:04,790 --> 00:09:57,600  
clean on saturdays and mostly have

211  
00:10:11,590 --> 00:10:08,230  
i'm gabe and i have a question for chris

212  
00:10:16,949 --> 00:10:13,750  
how often and with

213  
00:10:19,509 --> 00:10:16,959

what methods do you get

214

00:10:26,550 --> 00:10:19,519

to communicate with

215

00:10:30,150 --> 00:10:28,310

that's a fun question to answer because

216

00:10:33,110 --> 00:10:30,160

it's a fun time for us to talk with

217

00:10:36,470 --> 00:10:33,120

those people that we care about and

218

00:10:37,990 --> 00:10:36,480

we do have email although um on the

219

00:10:39,829 --> 00:10:38,000

ground you're used to hitting send and

220

00:10:42,550 --> 00:10:39,839

that email going right away

221

00:10:44,230 --> 00:10:42,560

we exchange our emails or the ground

222

00:10:46,389 --> 00:10:44,240

exchanges them for us about three or

223

00:10:48,389 --> 00:10:46,399

four times a day

224

00:10:50,470 --> 00:10:48,399

and then depending on where we are with

225

00:10:52,790 --> 00:10:50,480

the satellite coverage

226

00:10:56,310 --> 00:10:52,800

we have the ability to make a telephone

227

00:10:57,670 --> 00:10:56,320

call you can't call us unfortunately

228

00:10:59,590 --> 00:10:57,680

but

229

00:11:01,910 --> 00:10:59,600

we can call down at certain periods of

230

00:11:04,230 --> 00:11:01,920

time so i can talk to my friends and

231

00:11:06,069 --> 00:11:04,240

family that way and then once a week

232

00:11:08,870 --> 00:11:06,079

uh usually on the weekends

233

00:11:09,750 --> 00:11:08,880

we'll have a scheduled family conference

234

00:11:12,389 --> 00:11:09,760

where

235

00:11:15,590 --> 00:11:12,399

it's um kind of like facetime or skype

236

00:11:18,069 --> 00:11:15,600

for the with a video and and talking so

237

00:11:19,590 --> 00:11:18,079

that's a really nice time for us as well

238

00:11:26,389 --> 00:11:19,600

so several different ways we can talk

239

00:11:29,829 --> 00:11:28,630

hi my name is dylan

240

00:11:32,550 --> 00:11:29,839

staton

241

00:11:36,710 --> 00:11:32,560

i have a question for karen what

242

00:11:42,710 --> 00:11:36,720

iss module do you spend the most time in

243

00:11:46,550 --> 00:11:44,710

boy we spend a lot of time in various

244

00:11:48,310 --> 00:11:46,560

modules throughout the day but one of

245

00:11:50,550 --> 00:11:48,320

the ones that probably gets used the

246

00:11:53,590 --> 00:11:50,560

most is called node three

247

00:11:57,750 --> 00:11:53,600

and it's used a lot it has our exercise

248

00:11:59,910 --> 00:11:57,760

equipment it has a treadmill it has a um

249

00:12:02,550 --> 00:11:59,920

a resistive exercise device that's kind

250

00:12:04,710 --> 00:12:02,560

of like lifting weights our back in

251

00:12:07,269 --> 00:12:04,720

there and also if you go through node

252

00:12:09,750 --> 00:12:07,279

three you get barcupola which is the big

253

00:12:12,069 --> 00:12:09,760

window that looks down on the earth so

254

00:12:19,190 --> 00:12:12,079

that module is probably the use the most

255

00:12:23,670 --> 00:12:21,350

my name is jackson this question is for

256

00:12:25,670 --> 00:12:23,680

chris how is training in the neutral

257

00:12:31,269 --> 00:12:25,680

bionci laboratory different from the

258

00:12:35,829 --> 00:12:33,190

well you know what it's surprisingly

259

00:12:37,910 --> 00:12:35,839

similar that's one thing i noticed

260

00:12:40,629 --> 00:12:37,920

when i went outside and once i got

261

00:12:42,870 --> 00:12:40,639

comfortable it felt very much like being

262

00:12:45,350 --> 00:12:42,880

in the pool but the part to that is once

263

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

i got comfortable the big difference is

264

00:12:49,269 --> 00:12:47,760

in the pool it's just a concrete bottom

265

00:12:51,509 --> 00:12:49,279

below you

266

00:12:54,230 --> 00:12:51,519

in space there's no concrete bottom and

267

00:12:55,590 --> 00:12:54,240

it just falls down away to the earth 200

268

00:12:58,870 --> 00:12:55,600

or so miles

269

00:13:00,870 --> 00:12:58,880

below and it's moving quickly

270

00:13:03,829 --> 00:13:00,880

the other big difference

271

00:13:06,949 --> 00:13:03,839

we go around the world every 90 minutes

272

00:13:09,750 --> 00:13:06,959

so 45 minutes about we have sunlight and

273

00:13:11,990 --> 00:13:09,760

about 45 minutes we have darkness so and

274

00:13:13,509 --> 00:13:12,000

when it's dark it's pitch dark and out

275

00:13:15,990 --> 00:13:13,519

there on a spacewalk with your helmet

276

00:13:19,030 --> 00:13:16,000

lights illuminated you can see maybe

277

00:13:20,710 --> 00:13:19,040

um a 10 foot circle in front of you and

278

00:13:23,190 --> 00:13:20,720

the rest is just pitch dark that you

279

00:13:25,590 --> 00:13:23,200

can't see and in the pool the lights are

280

00:13:27,990 --> 00:13:25,600

always on and it's always daytime so

281

00:13:29,670 --> 00:13:28,000

uh it's difficult to train for that

282

00:13:31,509 --> 00:13:29,680

night time period so there's a couple

283

00:13:33,430 --> 00:13:31,519

things that really can get your

284

00:13:35,750 --> 00:13:33,440

attention when you first

285

00:13:37,590 --> 00:13:35,760

become a spacewalker but once you settle

286

00:13:44,870 --> 00:13:37,600

in it's a lot like just being in the

287

00:13:50,629 --> 00:13:47,590

my name is adelaide and

288

00:13:53,110 --> 00:13:50,639

the question for karen how much time do

289

00:13:55,110 --> 00:13:53,120

you have to relax and what

290

00:14:00,629 --> 00:13:55,120

and what you do

291

00:14:04,470 --> 00:14:02,150

weekends are mostly the time for

292

00:14:06,389 --> 00:14:04,480

relaxing we do have evenings where we

293

00:14:09,269 --> 00:14:06,399

finish up with our work about 7 30 in

294

00:14:11,350 --> 00:14:09,279

the evening but bedtime is around 10 so

295

00:14:12,870 --> 00:14:11,360

after we eat dinner and get ourselves

296

00:14:15,189 --> 00:14:12,880

cleaned up there really isn't all that

297

00:14:16,870 --> 00:14:15,199

much time for relaxing on saturdays we

298

00:14:18,550 --> 00:14:16,880

spend about half the day

299

00:14:21,509 --> 00:14:18,560

and the rest of the day we get to relax

300

00:14:22,949 --> 00:14:21,519

and then sunday is mostly a downtime

301

00:14:25,509 --> 00:14:22,959

i spend a lot of the time taking

302

00:14:27,269 --> 00:14:25,519

pictures reviewing my pictures talking

303

00:14:28,790 --> 00:14:27,279

to my family

304

00:14:29,990 --> 00:14:28,800

i brought some other stuff i would like

305

00:14:32,069 --> 00:14:30,000

to do

306

00:14:33,670 --> 00:14:32,079

for sewing and write all the hobbies i

307

00:14:35,350 --> 00:14:33,680

like to do when i'm on the earth but

308

00:14:38,230 --> 00:14:35,360

that period of time people can watch

309

00:14:39,670 --> 00:14:38,240

movies can read books there are lots of

310

00:14:47,350 --> 00:14:39,680

lots and lots of things we can do to

311

00:14:52,949 --> 00:14:49,509

my name is amari

312

00:14:55,509 --> 00:14:52,959

and this is the question for chris

313

00:14:58,069 --> 00:14:55,519

what are the differences between flying

314

00:15:04,629 --> 00:14:58,079

on the space shuttle and soyuz

315

00:15:10,550 --> 00:15:08,870

that's a good question really insightful

316

00:15:11,509 --> 00:15:10,560

so the space

317

00:15:15,829 --> 00:15:11,519

shuttle

318

00:15:18,710 --> 00:15:15,839

the ride up i felt um it was very bumpy

319

00:15:21,030 --> 00:15:18,720

and in loud for the first two minutes

320

00:15:23,030 --> 00:15:21,040

when the solid rocket motors were firing

321

00:15:25,430 --> 00:15:23,040

and then it got i thought really smooth

322

00:15:27,590 --> 00:15:25,440

and sort of quiet

323

00:15:30,550 --> 00:15:27,600

for the rest of the ride

324

00:15:33,110 --> 00:15:30,560

under powered flight the soyuz it's such

325

00:15:34,949 --> 00:15:33,120

a smaller spacecraft you i felt a lot of

326

00:15:37,189 --> 00:15:34,959

little motions as the

327

00:15:39,829 --> 00:15:37,199

computers tried to fix any course

328

00:15:43,189 --> 00:15:39,839

corrections and things like this so you

329

00:15:45,509 --> 00:15:43,199

i've got a sense of smaller motions a

330

00:15:48,310 --> 00:15:45,519

lot more in a soyuz than i did in a

331

00:15:50,310 --> 00:15:48,320

shuttle getting up to the orbit

332

00:15:53,670 --> 00:15:50,320

the big difference when you get to orbit

333

00:15:56,310 --> 00:15:53,680

is space the soyuz is very small

334

00:15:59,269 --> 00:15:56,320

kind of like a volkswagen beetle or mini

335

00:16:03,189 --> 00:15:59,279

cooper kind of a car compared to a king

336

00:16:05,269 --> 00:16:03,199

cab pickup truck neither one is right

337

00:16:06,949 --> 00:16:05,279

more right than the other just different

338

00:16:09,430 --> 00:16:06,959

types of cars different types of

339

00:16:11,590 --> 00:16:09,440

spaceships and the training is different

340

00:16:13,110 --> 00:16:11,600

uh mostly because in the shuttle all of

341

00:16:16,150 --> 00:16:13,120

it is done

342

00:16:18,550 --> 00:16:16,160

at in houston and where we live so we're

343

00:16:20,069 --> 00:16:18,560

home with our with at work a normal

344

00:16:21,670 --> 00:16:20,079

working day

345

00:16:23,910 --> 00:16:21,680

and the soyuz

346

00:16:26,310 --> 00:16:23,920

all the soyuz specific training is done

347

00:16:27,430 --> 00:16:26,320

in in russia and star city so we spend a

348

00:16:30,230 --> 00:16:27,440

lot of time

349

00:16:31,829 --> 00:16:30,240

uh away from houston in russia preparing

350

00:16:39,110 --> 00:16:31,839

for the soyuz flight

351

00:16:43,990 --> 00:16:41,269

my name is tess and my question is for

352

00:16:46,790 --> 00:16:44,000

karen the stars are moon and the planets

353

00:16:52,629 --> 00:16:46,800

must be very very beautiful from space

354

00:16:56,230 --> 00:16:54,550

there are quite a few beautiful things

355

00:16:58,150 --> 00:16:56,240

to look at when you look at our windows

356

00:16:59,749 --> 00:16:58,160

here the thing that i found the most

357

00:17:01,590 --> 00:16:59,759

impressive

358

00:17:03,509 --> 00:17:01,600

watching a sunrise

359

00:17:05,029 --> 00:17:03,519

because it kind of sneaks up on you you

360

00:17:06,870 --> 00:17:05,039

look out the window and it's completely

361

00:17:08,309 --> 00:17:06,880

dark and the next thing you know the

362

00:17:10,150 --> 00:17:08,319

modules on the space station that you

363

00:17:12,949 --> 00:17:10,160

can see start lighting up

364

00:17:14,949 --> 00:17:12,959

and then you start seeing a blue line on

365

00:17:16,470 --> 00:17:14,959

the edge of the earth that starts and

366

00:17:19,110 --> 00:17:16,480

sometimes you'll see other colors and it

367

00:17:20,949 --> 00:17:19,120

just gets bigger and bigger and bigger

368

00:17:22,630 --> 00:17:20,959

and then the line on the earth where

369

00:17:24,870 --> 00:17:22,640

it's between the black the blue just

370

00:17:27,350 --> 00:17:24,880

starts to slowly creep along the earth

371

00:17:29,750 --> 00:17:27,360

and it's so beautiful it's the way i'm

372

00:17:30,950 --> 00:17:29,760

describing it doesn't do it justice it's

373

00:17:38,310 --> 00:17:30,960

even more beautiful than you can

374

00:17:42,710 --> 00:17:40,230

my name is thaddeus and i have a

375

00:17:46,630 --> 00:17:42,720

question for chris

376

00:17:49,350 --> 00:17:46,640

is it confusing for your body to go

377

00:17:55,590 --> 00:17:49,360

through so many sunrises and sunsets

378

00:17:59,510 --> 00:17:56,630

well

379

00:18:01,669 --> 00:17:59,520

you would think it would be but actually

380

00:18:03,430 --> 00:18:01,679

we turn the lights on in the space

381

00:18:05,909 --> 00:18:03,440

station when we wake up

382

00:18:07,909 --> 00:18:05,919

and the same sort of thing you do at

383

00:18:09,270 --> 00:18:07,919

home you walk around in your pajamas for

384

00:18:11,430 --> 00:18:09,280

a little while have your breakfast and

385

00:18:13,909 --> 00:18:11,440

then get dressed for the day we do that

386

00:18:15,669 --> 00:18:13,919

exact same thing and we and we live our

387

00:18:17,990 --> 00:18:15,679

day like karen described

388

00:18:20,549 --> 00:18:18,000

um and sometimes we'll go to the window

389

00:18:22,789 --> 00:18:20,559

when we have time and if it's daytime we

390

00:18:24,950 --> 00:18:22,799

look out if it's nighttime we might see

391

00:18:26,470 --> 00:18:24,960

some cities at night but uh or if we're

392

00:18:27,270 --> 00:18:26,480

over an ocean there's not much to look

393

00:18:31,510 --> 00:18:27,280

at

394

00:18:33,430 --> 00:18:31,520

the window and uh

395

00:18:35,110 --> 00:18:33,440

and then at the end of our work day when

396

00:18:37,909 --> 00:18:35,120

it's time for bed we're tired because

397

00:18:39,350 --> 00:18:37,919

we've done our normal day and we'll go

398

00:18:41,350 --> 00:18:39,360

and look at the window and again maybe

399

00:18:43,669 --> 00:18:41,360

it's daylight outside maybe it's dark or

400

00:18:46,630 --> 00:18:43,679

we watch the sunrise and sunset but to

401  
00:18:48,870 --> 00:18:46,640  
our bodies it to me it feels like we

402  
00:18:51,909 --> 00:18:48,880  
just lived and worked a normal day and

403  
00:18:54,950 --> 00:18:51,919  
it's time for bed and uh i like to sleep

404  
00:18:57,110 --> 00:18:54,960  
so when it's when it's 10 o'clock or so

405  
00:18:59,510 --> 00:18:57,120  
there's no doubt in my body's mind that

406  
00:19:02,310 --> 00:18:59,520  
it's time to go to bed

407  
00:19:04,950 --> 00:19:02,320  
so it really it's after a little bit of

408  
00:19:07,029 --> 00:19:04,960  
what what i would say is like jet lag

409  
00:19:09,510 --> 00:19:07,039  
when you travel a long distance on an

410  
00:19:17,590 --> 00:19:09,520  
airplane after you get used to that it's

411  
00:19:20,870 --> 00:19:19,590  
my name is jacob and my question is for

412  
00:19:23,270 --> 00:19:20,880  
karen

413  
00:19:29,750 --> 00:19:23,280

do previous residents of the space

414

00:19:33,590 --> 00:19:31,990

actually most people everybody i think

415

00:19:35,190 --> 00:19:33,600

cleans up pretty well after themselves

416

00:19:36,710 --> 00:19:35,200

you try and keep it nice for the next

417

00:19:39,590 --> 00:19:36,720

guys that are coming but they do leave

418

00:19:40,870 --> 00:19:39,600

some things um when i first got here

419

00:19:42,549 --> 00:19:40,880

actually i

420

00:19:44,310 --> 00:19:42,559

didn't have a lot of clothes with me

421

00:19:45,909 --> 00:19:44,320

because they were all coming on the

422

00:19:48,710 --> 00:19:45,919

automated transfer vehicle which just

423

00:19:52,710 --> 00:19:48,720

arrived a couple days ago and uh one of

424

00:19:54,789 --> 00:19:52,720

the guys had left a pair of uh long legs

425

00:19:56,789 --> 00:19:54,799

and armed pajamas that i could wear

426

00:19:58,630 --> 00:19:56,799

which was very very nice

427

00:20:00,150 --> 00:19:58,640

also some of the folks leave some of

428

00:20:02,149 --> 00:20:00,160

their

429

00:20:04,070 --> 00:20:02,159

treats candy

430

00:20:06,149 --> 00:20:04,080

snacks like that

431

00:20:07,990 --> 00:20:06,159

there's a library of books people leave

432

00:20:10,149 --> 00:20:08,000

books here that we can read

433

00:20:12,789 --> 00:20:10,159

there's a guitar and a piano a keyboard

434

00:20:15,190 --> 00:20:12,799

that folks can play so so things kind of

435

00:20:22,070 --> 00:20:15,200

get left through things that

436

00:20:27,430 --> 00:20:25,029

my name is ivy and this question is for

437

00:20:29,110 --> 00:20:27,440

chris does any of your scientific

438

00:20:36,310 --> 00:20:29,120

research

439

00:20:39,909 --> 00:20:38,070

oh yes it does

440

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

karen described earlier

441

00:20:44,470 --> 00:20:41,919

the ultrasound project that we're

442

00:20:47,350 --> 00:20:44,480

working on and when one person is the

443

00:20:49,190 --> 00:20:47,360

subject the other person

444

00:20:50,230 --> 00:20:49,200

is the operator of the ultrasound

445

00:20:52,630 --> 00:20:50,240

machine

446

00:20:54,789 --> 00:20:52,640

and then some

447

00:20:57,270 --> 00:20:54,799

experiments that we do involve taking

448

00:21:01,190 --> 00:20:57,280

blood samples and will help each other

449

00:21:03,350 --> 00:21:01,200

with drawing each other's blood

450

00:21:05,909 --> 00:21:03,360

i'm trying to think what else those are

451  
00:21:08,070 --> 00:21:05,919  
the the big ones drawing fluid and oh

452  
00:21:10,149 --> 00:21:08,080  
and eyes i forgot about eyes there's a

453  
00:21:12,390 --> 00:21:10,159  
lot of research about our eyesight and

454  
00:21:14,390 --> 00:21:12,400  
we have different types of instruments

455  
00:21:17,190 --> 00:21:14,400  
to check our eyes and we'll help each

456  
00:21:18,950 --> 00:21:17,200  
other with those things as well so

457  
00:21:20,470 --> 00:21:18,960  
there's quite a few

458  
00:21:26,310 --> 00:21:20,480  
medical experiments that we help each

459  
00:21:31,190 --> 00:21:28,789  
well from for all the people here at the

460  
00:21:33,909 --> 00:21:31,200  
cosmosphere we would like to give out a

461  
00:21:37,190 --> 00:21:33,919  
big thank you to chris cassidy and karen

462  
00:21:42,789 --> 00:21:37,200  
nyberg for visiting with us this morning

463  
00:21:46,950 --> 00:21:44,549

thank you all for joining us we had a

464

00:21:49,990 --> 00:21:46,960

good time talking with you and hopefully

465

00:21:52,149 --> 00:21:50,000

uh some of you will decide to uh follow

466

00:21:54,470 --> 00:21:52,159

dreams and pursue pursue a career in

467

00:21:57,669 --> 00:21:54,480

space

468

00:22:01,590 --> 00:21:57,679

station this is houston acr thank you

469

00:22:05,350 --> 00:22:03,750

thank you kansas cosmosphere station we