



1
00:00:04,870 --> 00:00:02,070
station this is houston are you ready

2
00:00:04,880 --> 00:00:08,870
we are ready for the event

3
00:00:12,230 --> 00:00:10,230
the weather channel this is mission

4
00:00:15,110 --> 00:00:12,240
control houston please call station for

5
00:00:19,990 --> 00:00:16,870
station this is a weather channel how do

6
00:00:20,000 --> 00:00:24,310
we read you loud and clear how about us

7
00:00:24,320 --> 00:00:28,150
ah great

8
00:00:33,190 --> 00:00:29,669
okay so i'm gonna start you guys off

9
00:00:38,549 --> 00:00:33,200
with um what is a day in the life on the

10
00:00:43,990 --> 00:00:40,869
we know every day here is pretty busy we

11
00:00:45,590 --> 00:00:44,000
get up around 6 or 6 30 depends some of

12
00:00:47,110 --> 00:00:45,600
us get up earlier some you know a little

13
00:00:49,110 --> 00:00:47,120

bit closer to our daily planning

14

00:00:51,189 --> 00:00:49,120
conference which begins usually around 7

15

00:00:53,350 --> 00:00:51,199
30 and then we're off to the races we

16

00:00:55,270 --> 00:00:53,360
have a very full schedule of science

17

00:00:57,350 --> 00:00:55,280
maintenance we exercise for about two

18

00:00:59,189 --> 00:00:57,360
and a half hours a day and so that takes

19

00:01:00,389 --> 00:00:59,199
us all the way up to the evening daily

20

00:01:03,270 --> 00:01:00,399
planning conference which is usually

21

00:01:05,990 --> 00:01:03,280
around 7 30. and in between there we fit

22

00:01:07,670 --> 00:01:06,000
in photographs maybe a phone call and

23

00:01:09,429 --> 00:01:07,680
then at night time it's really just

24

00:01:12,950 --> 00:01:09,439
catching up with the day so we have a

25

00:01:14,870 --> 00:01:12,960
very full schedule up here

26

00:01:16,950 --> 00:01:14,880

okay so speaking of working out and

27

00:01:19,350 --> 00:01:16,960

photographs i have to ask tim peake a

28

00:01:22,149 --> 00:01:19,360

couple of questions first off running

29

00:01:23,990 --> 00:01:22,159

the london marathon uh leave it to me to

30

00:01:26,390 --> 00:01:24,000

add to think what happens to all your

31

00:01:28,390 --> 00:01:26,400

sweat when you're running um or do you

32

00:01:29,510 --> 00:01:28,400

not sweat in space or what is it does

33

00:01:34,550 --> 00:01:29,520

this like sweat all over the

34

00:01:39,270 --> 00:01:36,310

yeah that's a that's a great question

35

00:01:41,510 --> 00:01:39,280

well firstly yes we do sweat in space uh

36

00:01:43,030 --> 00:01:41,520

probably maybe even more so than uh back

37

00:01:45,030 --> 00:01:43,040

on earth because there's not as much

38

00:01:47,990 --> 00:01:45,040

airflow up here and it's a bit warmer on

39

00:01:50,389 --> 00:01:48,000

board the space station but we recycle

40

00:01:51,990 --> 00:01:50,399

all of that uh moisture that we breathe

41

00:01:54,230 --> 00:01:52,000

out and that we sweat out it all gets

42

00:01:57,030 --> 00:01:54,240

absorbed back into the space station's

43

00:01:58,709 --> 00:01:57,040

atmosphere it gets cleaned recycled and

44

00:02:01,109 --> 00:01:58,719

we drink it again probably the next day

45

00:02:03,030 --> 00:02:01,119

or maybe 48 hours later

46

00:02:05,030 --> 00:02:03,040

in space of course those the sweat

47

00:02:06,870 --> 00:02:05,040

doesn't work that efficiently it doesn't

48

00:02:09,190 --> 00:02:06,880

drip off you it just kind of pulls in

49

00:02:10,949 --> 00:02:09,200

big globules and for me it kind of goes

50

00:02:12,869 --> 00:02:10,959

to the top of my head so i'm constantly

51
00:02:14,550 --> 00:02:12,879
mopping the top of my head with a towel

52
00:02:17,510 --> 00:02:14,560
when i'm on a long run to get rid of all

53
00:02:21,430 --> 00:02:18,790
okay so i want to talk about some of the

54
00:02:23,670 --> 00:02:21,440
pictures and tim you took one of a

55
00:02:26,390 --> 00:02:23,680
little piece of dust that cracked the

56
00:02:29,589 --> 00:02:26,400
windshield of um

57
00:02:30,790 --> 00:02:29,599
the the space shuttle

58
00:02:32,790 --> 00:02:30,800
you know it doesn't seem that you're in

59
00:02:37,190 --> 00:02:32,800
any sort of danger but that seems like

60
00:02:40,630 --> 00:02:38,710
we know we do have some tips in the

61
00:02:42,949 --> 00:02:40,640
windows from small debris that's

62
00:02:44,949 --> 00:02:42,959
actually made an impact and so when they

63
00:02:47,190 --> 00:02:44,959

design the windows and all of station

64

00:02:49,670 --> 00:02:47,200

it's really designed with protection in

65

00:02:51,350 --> 00:02:49,680

mind our shutters cover up the windows

66

00:02:53,830 --> 00:02:51,360

and so we open the shutters to take

67

00:02:55,350 --> 00:02:53,840

pictures uh but the majority of the time

68

00:02:57,910 --> 00:02:55,360

they're covered with these very sturdy

69

00:02:59,830 --> 00:02:57,920

shutters you know it it definitely uh it

70

00:03:01,509 --> 00:02:59,840

speaks to the fact that we're in an

71

00:03:03,670 --> 00:03:01,519

environment here that has lots of

72

00:03:05,350 --> 00:03:03,680

hazards but we do the best we can to

73

00:03:08,390 --> 00:03:05,360

mitigate it with the design we have of

74

00:03:11,830 --> 00:03:09,910

okay to talk more about the pictures you

75

00:03:14,630 --> 00:03:11,840

guys often take these phenomenal

76

00:03:16,949 --> 00:03:14,640

pictures of hurricanes from space or you

77

00:03:19,030 --> 00:03:16,959

know the california wildfires are you

78

00:03:20,869 --> 00:03:19,040

aware of what you're actually taking

79

00:03:23,509 --> 00:03:20,879

pictures of and also are you able to

80

00:03:27,589 --> 00:03:23,519

give us any help in any new information

81

00:03:31,350 --> 00:03:29,110

well i would say sometimes we're aware

82

00:03:33,270 --> 00:03:31,360

of it sometimes we're not until we see

83

00:03:34,390 --> 00:03:33,280

the view out the window and we grab the

84

00:03:36,390 --> 00:03:34,400

picture

85

00:03:38,390 --> 00:03:36,400

obviously we get some news up here we

86

00:03:40,550 --> 00:03:38,400

get updates every day

87

00:03:42,630 --> 00:03:40,560

if there's something big happening like

88

00:03:45,589 --> 00:03:42,640

the the

89

00:03:48,070 --> 00:03:45,599

horrific fires in canada the ground will

90

00:03:51,110 --> 00:03:48,080

let us know and alert us to grab

91

00:03:52,869 --> 00:03:51,120

pictures but oftentimes we we're just in

92

00:03:54,710 --> 00:03:52,879

the window taking pictures of some part

93

00:03:55,750 --> 00:03:54,720

of the earth and we will observe

94

00:03:57,830 --> 00:03:55,760

something

95

00:04:00,070 --> 00:03:57,840

that nobody has

96

00:04:01,750 --> 00:04:00,080

let us know about and we grab pictures

97

00:04:03,990 --> 00:04:01,760

and then find out after the fact what it

98

00:04:06,229 --> 00:04:04,000

is and that that has occurred with uh

99

00:04:09,110 --> 00:04:06,239

weather systems as well as volcano

100

00:04:13,030 --> 00:04:10,550

okay other things that you guys are able

101
00:04:14,470 --> 00:04:13,040
to see the aurora borealis which is just

102
00:04:16,710 --> 00:04:14,480
mind-blowing

103
00:04:18,310 --> 00:04:16,720
especially to see it from space but i

104
00:04:19,749 --> 00:04:18,320
want to talk about the transit of

105
00:04:21,110 --> 00:04:19,759
mercury because we spoke with one of

106
00:04:23,350 --> 00:04:21,120
your colleagues on monday about that

107
00:04:24,629 --> 00:04:23,360
transit were you guys able to see that

108
00:04:26,310 --> 00:04:24,639
from your perspective i was trying to

109
00:04:28,310 --> 00:04:26,320
think about okay well we're on earth

110
00:04:30,310 --> 00:04:28,320
looking at you know the sun and mercury

111
00:04:31,990 --> 00:04:30,320
going across it should kind of still be

112
00:04:35,030 --> 00:04:32,000
the same from where you're located too

113
00:04:40,150 --> 00:04:37,590

you know it would be in fact uh

114

00:04:41,749 --> 00:04:40,160

jeff and tim were looking into if we had

115

00:04:43,270 --> 00:04:41,759

any equipment on board that we could use

116

00:04:45,430 --> 00:04:43,280

to look at the sun and be able to see

117

00:04:47,510 --> 00:04:45,440

this conjunction and actually we didn't

118

00:04:48,390 --> 00:04:47,520

it's kind of unfortunate but

119

00:04:49,909 --> 00:04:48,400

you know

120

00:04:51,510 --> 00:04:49,919

we actually have a great view up here

121

00:04:52,950 --> 00:04:51,520

and so with the right equipment we could

122

00:04:55,749 --> 00:04:52,960

actually see those kinds of things as

123

00:04:58,710 --> 00:04:57,350

so what weather do you miss the most

124

00:04:59,990 --> 00:04:58,720

when you're in the international space

125

00:05:01,430 --> 00:05:00,000

station though i guess your friend tim

126

00:05:03,029 --> 00:05:01,440

peake there you know arranged some

127

00:05:08,150 --> 00:05:03,039

showers on you guys when he does his

128

00:05:13,430 --> 00:05:10,070

yeah you know i actually coming from the

129

00:05:15,189 --> 00:05:13,440

uk i miss the the wind and the rain

130

00:05:16,469 --> 00:05:15,199

but uh no in all seriousness a nice

131

00:05:18,230 --> 00:05:16,479

breeze when you're running i think

132

00:05:21,029 --> 00:05:18,240

that's fantastic and that's what i do

133

00:05:22,790 --> 00:05:21,039

miss up here um so i'm certainly looking

134

00:05:26,230 --> 00:05:22,800

forward to getting back and just feeling

135

00:05:30,629 --> 00:05:28,790

okay so let's talk about your um you

136

00:05:33,189 --> 00:05:30,639

know what the research is that you guys

137

00:05:35,350 --> 00:05:33,199

are doing on this mission because it

138

00:05:40,950 --> 00:05:35,360

seems as if everything you're doing is

139

00:05:44,629 --> 00:05:42,870

we know the the kind of research we do

140

00:05:46,469 --> 00:05:44,639

on board is is really broad spectrum

141

00:05:48,150 --> 00:05:46,479

there is a very large component of our

142

00:05:49,830 --> 00:05:48,160

research that's designed for us to

143

00:05:51,510 --> 00:05:49,840

understand the effects of zero gravity

144

00:05:54,070 --> 00:05:51,520

on the human body and so we do

145

00:05:56,390 --> 00:05:54,080

ultrasounds we have studies of our eyes

146

00:05:58,070 --> 00:05:56,400

and a whole variety of different studies

147

00:06:00,790 --> 00:05:58,080

that are helping us determine what does

148

00:06:01,830 --> 00:06:00,800

it take to stay in in zero gravity for a

149

00:06:04,230 --> 00:06:01,840

long period of time and that would

150

00:06:05,830 --> 00:06:04,240

prepare us for a journey to mars you

151
00:06:06,950 --> 00:06:05,840
know anytime we're going to be

152
00:06:09,430 --> 00:06:06,960
transiting

153
00:06:10,870 --> 00:06:09,440
into a an area beyond low earth orbit

154
00:06:13,029 --> 00:06:10,880
it's definitely necessary for us to

155
00:06:15,029 --> 00:06:13,039
understand you know the the impact of

156
00:06:16,469 --> 00:06:15,039
zero gravity but there's also lots of

157
00:06:18,550 --> 00:06:16,479
other research that we do on board lots

158
00:06:21,110 --> 00:06:18,560
of basic science and basic research

159
00:06:23,189 --> 00:06:21,120
everything from combustion fluid science

160
00:06:25,270 --> 00:06:23,199
cellular biology and so we have this

161
00:06:27,189 --> 00:06:25,280
world-class orbiting laboratory we hope

162
00:06:30,070 --> 00:06:27,199
to solve lots of those problems over

163
00:06:34,070 --> 00:06:32,309

would all three of you go to nasa i mean

164

00:06:36,790 --> 00:06:34,080

is that something that is of interest to

165

00:06:38,469 --> 00:06:36,800

you would you like to go

166

00:06:42,790 --> 00:06:38,479

i mean go to mars i'm sorry i said nasa

167

00:06:45,909 --> 00:06:44,150

going to mars

168

00:06:47,830 --> 00:06:45,919

i'll speak for myself personally that

169

00:06:49,990 --> 00:06:47,840

would be a little bit different journey

170

00:06:51,270 --> 00:06:50,000

that would be a long way away a long

171

00:06:53,270 --> 00:06:51,280

journey there

172

00:06:54,870 --> 00:06:53,280

of course the the work on mars would be

173

00:06:57,110 --> 00:06:54,880

very interesting

174

00:06:58,870 --> 00:06:57,120

but the whole mission would be very long

175

00:07:01,110 --> 00:06:58,880

while you're in route to mars it's

176

00:07:02,870 --> 00:07:01,120

interesting we spend a lot of time in

177

00:07:04,550 --> 00:07:02,880

the window here looking at the earth and

178

00:07:05,909 --> 00:07:04,560

the earth becomes kind of the focal

179

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

point

180

00:07:09,990 --> 00:07:07,919

of the unique experience of being here

181

00:07:12,070 --> 00:07:10,000

but going to mars

182

00:07:13,909 --> 00:07:12,080

we would not be able to see anything

183

00:07:15,830 --> 00:07:13,919

except the sun we couldn't even see the

184

00:07:17,270 --> 00:07:15,840

stars so that would be a little bit

185

00:07:18,629 --> 00:07:17,280

different kind of journey i think that's

186

00:07:24,550 --> 00:07:18,639

something uh

187

00:07:28,710 --> 00:07:26,629

you guys are currently over ontario

188

00:07:30,070 --> 00:07:28,720

canada at the moment let's just talk

189

00:07:31,990 --> 00:07:30,080

about some of the basics for people

190

00:07:34,309 --> 00:07:32,000

watching of how many times you guys

191

00:07:38,550 --> 00:07:34,319

circle the earth you know in a day and

192

00:07:42,230 --> 00:07:39,990

so we're going around the planet every

193

00:07:45,510 --> 00:07:42,240

90 minutes that means we have 16 orbits

194

00:07:48,070 --> 00:07:45,520

per day that comes out to 17 500 miles

195

00:07:50,070 --> 00:07:48,080

an hour or about five miles a second so

196

00:07:51,830 --> 00:07:50,080

uh you know all of us love taking

197

00:07:53,670 --> 00:07:51,840

photographs and it means you have to be

198

00:07:55,670 --> 00:07:53,680

really skilled actually for some of the

199

00:07:57,510 --> 00:07:55,680

close end shots to be able to track and

200

00:07:58,469 --> 00:07:57,520

to get those photographs but it's an

201
00:08:00,390 --> 00:07:58,479
amazing

202
00:08:01,510 --> 00:08:00,400
experience be able to see the planet

203
00:08:03,029 --> 00:08:01,520
over and over from different

204
00:08:06,950 --> 00:08:03,039
perspectives different lighting and

205
00:08:10,230 --> 00:08:08,629
so what is the favorite thing you have

206
00:08:15,350 --> 00:08:10,240
been able to see from the international

207
00:08:18,150 --> 00:08:16,790
well you know i think every time you

208
00:08:19,909 --> 00:08:18,160
look out the window as kind of jeff

209
00:08:22,070 --> 00:08:19,919
alluded to there you see something

210
00:08:24,469 --> 00:08:22,080
different and uh everything is

211
00:08:26,790 --> 00:08:24,479
incredible i've loved seeing the aurora

212
00:08:28,150 --> 00:08:26,800
both the aurora borealis and australis

213
00:08:29,270 --> 00:08:28,160

as well which has been really bright

214

00:08:32,070 --> 00:08:29,280

during this

215

00:08:33,990 --> 00:08:32,080

expedition 46 and 47. i love seeing

216

00:08:35,589 --> 00:08:34,000

thunderstorms at night as well it's

217

00:08:37,269 --> 00:08:35,599

really spectacular and you can see the

218

00:08:38,550 --> 00:08:37,279

huge scale sometimes of those

219

00:08:41,029 --> 00:08:38,560

thunderstorms

220

00:08:42,949 --> 00:08:41,039

over hundreds and hundreds of miles um

221

00:08:45,590 --> 00:08:42,959

and actually in fact it almost looks as

222

00:08:47,430 --> 00:08:45,600

if one lightning strike triggers a whole

223

00:08:49,190 --> 00:08:47,440

series of further lightning strikes and

224

00:08:51,590 --> 00:08:49,200

they all go off together which is really

225

00:08:52,790 --> 00:08:51,600

spectacular um it's also been nice over

226

00:08:55,350 --> 00:08:52,800

the length of time you know having

227

00:08:57,269 --> 00:08:55,360

launched before christmas look watching

228

00:08:59,509 --> 00:08:57,279

the northern hemisphere turn from a

229

00:09:01,110 --> 00:08:59,519

winter landscape into spring and now

230

00:09:02,710 --> 00:09:01,120

moving into summer it's been great to

231

00:09:05,590 --> 00:09:02,720

watch that seasonal change over the

232

00:09:08,790 --> 00:09:07,590

awesome um tim tim and jeff thank you so

233

00:09:10,389 --> 00:09:08,800

much i have to say this is a real treat

234

00:09:11,190 --> 00:09:10,399

for me i went to space camp twice as a

235

00:09:14,790 --> 00:09:11,200

kid

236

00:09:17,350 --> 00:09:14,800

so i am very much into this and you've

237

00:09:19,350 --> 00:09:17,360

just you've made my like year so thank

238

00:09:22,070 --> 00:09:19,360

you so much and i can't wait to talk to

239

00:09:23,430 --> 00:09:22,080

you guys again

240

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

thank you it's been great talking with

241

00:09:26,080 --> 00:09:29,910

bye guys

242

00:09:34,550 --> 00:09:31,990

see ya

243

00:09:36,230 --> 00:09:34,560

station this is houston acr that

244

00:09:38,389 --> 00:09:36,240

concludes the weather channel portion of

245

00:09:44,070 --> 00:09:38,399

the event please stand by for a voice

246

00:09:49,509 --> 00:09:46,550

station this is wisd tv how do you hear

247

00:09:49,519 --> 00:09:53,829

we hear you loud and clear how about us

248

00:09:59,030 --> 00:09:55,269

loud and clear

249

00:10:04,069 --> 00:10:00,790

that's great uh being able to talk to

250

00:10:11,110 --> 00:10:05,829

tim tell us about

251
00:10:15,110 --> 00:10:12,790
you know we have a very busy schedule

252
00:10:17,590 --> 00:10:15,120
here on space station we typically get

253
00:10:19,990 --> 00:10:17,600
up about 6 or 6 30 in the morning we

254
00:10:21,910 --> 00:10:20,000
have a daily planning conference about 7

255
00:10:24,630 --> 00:10:21,920
30 and then we have a schedule that's

256
00:10:26,389 --> 00:10:24,640
very full every day and it is comprised

257
00:10:28,310 --> 00:10:26,399
of doing science here on board

258
00:10:30,949 --> 00:10:28,320
maintaining this world-class orbiting

259
00:10:32,949 --> 00:10:30,959
facility and also exercising and so

260
00:10:34,550 --> 00:10:32,959
we're uh we're really packed throughout

261
00:10:36,310 --> 00:10:34,560
the day doing all those things and then

262
00:10:38,470 --> 00:10:36,320
we have an evening planning conference

263
00:10:40,069 --> 00:10:38,480

usually around 7 30 and then the night

264

00:10:44,550 --> 00:10:40,079

time is really to have dinner and catch

265

00:10:49,910 --> 00:10:47,990

a typical day jeff you're a wisconsin

266

00:10:52,550 --> 00:10:49,920

native from winter wisconsin and

267

00:10:54,870 --> 00:10:52,560

everyone here at home is so excited and

268

00:10:56,790 --> 00:10:54,880

about this mission and following your

269

00:10:59,509 --> 00:10:56,800

mission what is it like for you

270

00:11:00,470 --> 00:10:59,519

personally when you fly over

271

00:11:02,389 --> 00:11:00,480

wisconsin

272

00:11:06,470 --> 00:11:02,399

the great lakes the upper midwest what

273

00:11:11,430 --> 00:11:08,389

oh well of course it brings back a lot

274

00:11:14,550 --> 00:11:11,440

of nostalgia growing up there and i've

275

00:11:16,310 --> 00:11:14,560

got lots of friends there still some

276

00:11:17,430 --> 00:11:16,320

family in the area

277

00:11:21,990 --> 00:11:17,440

so

278

00:11:23,509 --> 00:11:22,000

love to take pictures and and post them

279

00:11:25,910 --> 00:11:23,519

so that everybody can see that i'm

280

00:11:28,230 --> 00:11:25,920

watching them as well i like to look

281

00:11:30,790 --> 00:11:28,240

into the details and see the the the

282

00:11:34,389 --> 00:11:30,800

lakes that i boated on and fished on and

283

00:11:37,350 --> 00:11:34,399

and other uh uh journeys i can even see

284

00:11:39,750 --> 00:11:37,360

my uh my homestead uh from up here with

285

00:11:43,509 --> 00:11:39,760

a big lens and pick out the building so

286

00:11:45,190 --> 00:11:43,519

it's uh it's a great experience full of

287

00:11:49,509 --> 00:11:45,200

nostalgia and fun to bring the

288

00:11:53,430 --> 00:11:50,949

what goes through your mind when you can

289

00:11:57,509 --> 00:11:53,440

see your homestead from 200 miles in

290

00:12:00,230 --> 00:11:58,710

well i don't know

291

00:12:02,470 --> 00:12:00,240

i don't know how to explain it i mean

292

00:12:05,430 --> 00:12:02,480

it's it's uh pretty emotional to be able

293

00:12:07,590 --> 00:12:05,440

to see it and uh and relive some of the

294

00:12:10,069 --> 00:12:07,600

experiences of growing up and knowing

295

00:12:12,230 --> 00:12:10,079

the people there and uh and having that

296

00:12:13,990 --> 00:12:12,240

opportunity even sometimes make a phone

297

00:12:16,310 --> 00:12:14,000

call say hey we just flew over and i see

298

00:12:19,590 --> 00:12:16,320

you got your car parked in the driveway

299

00:12:19,600 --> 00:12:23,990

with your friends

300

00:12:28,550 --> 00:12:26,710

what is the objective of mission 47 can

301
00:12:32,389 --> 00:12:28,560
you explain a little bit about what your

302
00:12:36,550 --> 00:12:33,910
you know all of the expeditions to

303
00:12:38,949 --> 00:12:36,560
include expedition 47 is really about

304
00:12:41,430 --> 00:12:38,959
fulfilling the the potential of this

305
00:12:44,470 --> 00:12:41,440
world-class orbiting laboratory that we

306
00:12:46,230 --> 00:12:44,480
have and so every day we're trying to to

307
00:12:48,150 --> 00:12:46,240
meet the objectives that we have for

308
00:12:49,910 --> 00:12:48,160
different science experiments and those

309
00:12:51,269 --> 00:12:49,920
comprise ones that are physiologically

310
00:12:52,949 --> 00:12:51,279
based so that we can understand the

311
00:12:55,430 --> 00:12:52,959
effects of zero gravity on the human

312
00:12:57,829 --> 00:12:55,440
body that will allow us to go farther

313
00:12:59,110 --> 00:12:57,839

deeper into space in the future and also

314

00:13:01,030 --> 00:12:59,120

you know mitigate some of the the

315

00:13:02,949 --> 00:13:01,040

effects of zero gravity negative effects

316

00:13:04,870 --> 00:13:02,959

really on the human body and then we're

317

00:13:07,030 --> 00:13:04,880

conducting lots of basic science

318

00:13:10,629 --> 00:13:07,040

experiments everything from combustion

319

00:13:12,790 --> 00:13:10,639

to fluid mechanics to cell biology and

320

00:13:14,870 --> 00:13:12,800

and really it's also a technology

321

00:13:16,870 --> 00:13:14,880

demonstrator you know our environment

322

00:13:19,190 --> 00:13:16,880

here is exactly what we make of it the

323

00:13:21,030 --> 00:13:19,200

the temperature the quality of the air

324

00:13:22,550 --> 00:13:21,040

everything that we have here on board is

325

00:13:24,069 --> 00:13:22,560

what we've created because outside of

326

00:13:26,629 --> 00:13:24,079

the walls of this space station is a

327

00:13:28,069 --> 00:13:26,639

vacuum and not hospitable to human life

328

00:13:30,470 --> 00:13:28,079

and so what we want to do is just

329

00:13:32,790 --> 00:13:30,480

advance the science and and learn from

330

00:13:34,949 --> 00:13:32,800

this and every expedition that's here on

331

00:13:37,190 --> 00:13:34,959

space station on ford will be doing the

332

00:13:39,110 --> 00:13:37,200

exact same thing trying to to develop

333

00:13:40,629 --> 00:13:39,120

the the state of the art and science and

334

00:13:43,269 --> 00:13:40,639

technology that will allow us to go

335

00:13:47,670 --> 00:13:45,110

now tim peake the whole world watched

336

00:13:50,230 --> 00:13:47,680

you as you ran a marathon in outer space

337

00:13:54,069 --> 00:13:50,240

how do you you keep fits on the on the

338

00:13:57,430 --> 00:13:55,670

that's a great question is tim alluded

339

00:13:59,110 --> 00:13:57,440

to that you know maintaining fitness and

340

00:14:01,670 --> 00:13:59,120

health is really important to mitigate

341

00:14:04,150 --> 00:14:01,680

the the negative effects of microgravity

342

00:14:06,389 --> 00:14:04,160

so we do two basic types of training one

343

00:14:08,310 --> 00:14:06,399

is for cardiovascular because if we did

344

00:14:10,389 --> 00:14:08,320

nothing our heart muscle would shrink it

345

00:14:12,310 --> 00:14:10,399

has a really easy time in microgravity

346

00:14:13,990 --> 00:14:12,320

pumping the blood around first your

347

00:14:15,829 --> 00:14:14,000

blood volume reduces and secondly of

348

00:14:17,590 --> 00:14:15,839

course it doesn't have to fight gravity

349

00:14:19,430 --> 00:14:17,600

so in order to make sure that our heart

350

00:14:21,910 --> 00:14:19,440

muscle stays fit and healthy we do

351
00:14:23,750 --> 00:14:21,920
cardiovascular exercise uh that's on the

352
00:14:26,150 --> 00:14:23,760
sevis bike machine which is here right

353
00:14:27,990 --> 00:14:26,160
next to me actually and also we have a

354
00:14:29,829 --> 00:14:28,000
treadmill a t2 treadmill so we do

355
00:14:32,550 --> 00:14:29,839
running and biking and then we have a

356
00:14:34,790 --> 00:14:32,560
machine called a red which enables us to

357
00:14:36,389 --> 00:14:34,800
lift weights it actually uses two vacuum

358
00:14:38,310 --> 00:14:36,399
cylinders because obviously the weights

359
00:14:40,389 --> 00:14:38,320
up here would be meaningless but using

360
00:14:41,750 --> 00:14:40,399
the resistance of that vacuum cylinder

361
00:14:44,150 --> 00:14:41,760
we can actually do weight lifting and

362
00:14:46,310 --> 00:14:44,160
exercise the major muscle groups and try

363
00:14:49,269 --> 00:14:46,320

and prevent some of that muscular

364

00:14:53,509 --> 00:14:51,269

we can see you bobbing up and down a

365

00:14:55,430 --> 00:14:53,519

little bit do you have weights that are

366

00:14:58,710 --> 00:14:55,440

holding you down while you're talking to

367

00:15:01,910 --> 00:14:59,990

you know the three of us are actually

368

00:15:04,150 --> 00:15:01,920

stood here with our feet hooked

369

00:15:05,829 --> 00:15:04,160

underneath um handrails we call them

370

00:15:08,150 --> 00:15:05,839

handrails but you know most the time we

371

00:15:10,310 --> 00:15:08,160

move around the space station hooking

372

00:15:12,710 --> 00:15:10,320

our feet under things and it's quite

373

00:15:14,949 --> 00:15:12,720

interesting because after five months in

374

00:15:16,949 --> 00:15:14,959

space the bottom of my feet are

375

00:15:19,509 --> 00:15:16,959

completely smooth you know like a

376

00:15:21,750 --> 00:15:19,519

newborn baby but the tops of my feet are

377

00:15:23,430 --> 00:15:21,760

completely hard and and you know

378

00:15:25,030 --> 00:15:23,440

hardened skin where i've been hooking my

379

00:15:27,030 --> 00:15:25,040

feet underneath hand rails for five

380

00:15:28,949 --> 00:15:27,040

months so we kind of use use our feet in

381

00:15:31,749 --> 00:15:28,959

an opposite manner to how you do on

382

00:15:35,509 --> 00:15:33,350

we see you guys have a lot of fun with

383

00:15:42,150 --> 00:15:35,519

this microgravity a lot of times how

384

00:15:45,509 --> 00:15:43,590

uh well

385

00:15:48,150 --> 00:15:45,519

it's speaking for myself and also

386

00:15:50,389 --> 00:15:48,160

observing many folks up here i think

387

00:15:52,550 --> 00:15:50,399

i've been on orbit with close to 50

388

00:15:53,829 --> 00:15:52,560

different people or 40 some different

389

00:15:56,710 --> 00:15:53,839

people

390

00:15:59,350 --> 00:15:56,720

and everybody adapts very quickly within

391

00:16:02,310 --> 00:15:59,360

a first few days or first couple weeks

392

00:16:04,550 --> 00:16:02,320

you go through a huge adaptation but it

393

00:16:06,629 --> 00:16:04,560

really takes about six weeks or so to

394

00:16:08,949 --> 00:16:06,639

fully get acclimated to the environment

395

00:16:11,350 --> 00:16:08,959

and working in three dimensions and not

396

00:16:13,670 --> 00:16:11,360

having to depend upon

397

00:16:15,910 --> 00:16:13,680

an up or a down to be able to work in

398

00:16:18,230 --> 00:16:15,920

any orientation and to be able to manage

399

00:16:20,069 --> 00:16:18,240

the all the free floating things

400

00:16:22,150 --> 00:16:20,079

that you're working with up here

401
00:16:24,150 --> 00:16:22,160
after six weeks everybody i think pretty

402
00:16:27,269 --> 00:16:24,160
much is up on the step and

403
00:16:31,509 --> 00:16:29,749
do the russian cosmonauts speak english

404
00:16:35,430 --> 00:16:31,519
or do any of the three of you speak

405
00:16:39,189 --> 00:16:37,269
you know we have uh three cosmonauts on

406
00:16:40,710 --> 00:16:39,199
board and they speak good english

407
00:16:42,629 --> 00:16:40,720
you know you could ask our russian

408
00:16:44,949 --> 00:16:42,639
colleagues if we speak good russian you

409
00:16:46,710 --> 00:16:44,959
know we definitely attempt it and uh so

410
00:16:48,230 --> 00:16:46,720
we we end up communicating really in

411
00:16:49,749 --> 00:16:48,240
both ways we speak a little bit of

412
00:16:51,509 --> 00:16:49,759
russian a little bit of english

413
00:16:54,629 --> 00:16:51,519

sometimes it turns out to be ruthless

414

00:16:56,550 --> 00:16:54,639

sort of a combination of both but we all

415

00:16:58,470 --> 00:16:56,560

communicate very effectively our classes

416

00:17:01,030 --> 00:16:58,480

and training when we're in russia are in

417

00:17:03,749 --> 00:17:01,040

russian when the cosmonauts come to the

418

00:17:06,230 --> 00:17:03,759

united states they learn their classes

419

00:17:09,270 --> 00:17:06,240

and hear their classes in english and so

420

00:17:13,510 --> 00:17:09,280

uh we end up compromising and and uh

421

00:17:17,510 --> 00:17:15,270

how many windows are there on the space

422

00:17:21,350 --> 00:17:17,520

station and how often do you look out at

423

00:17:25,350 --> 00:17:23,350

yeah we've got lots of windows on the

424

00:17:26,949 --> 00:17:25,360

space station because every hatch has a

425

00:17:28,630 --> 00:17:26,959

window in them

426

00:17:30,630 --> 00:17:28,640

but the main windows that we like to

427

00:17:32,470 --> 00:17:30,640

look out are the lab window which is

428

00:17:34,870 --> 00:17:32,480

right in front of us and that's just

429

00:17:36,950 --> 00:17:34,880

facing directly down on earth and also

430

00:17:39,190 --> 00:17:36,960

the cupola window which is actually

431

00:17:40,870 --> 00:17:39,200

seven windows making this cupola shape

432

00:17:44,630 --> 00:17:40,880

and that's that's incredible we can get

433

00:17:46,470 --> 00:17:44,640

sort of 360 degree views of planet earth

434

00:17:49,190 --> 00:17:46,480

both of those are earth-facing we we

435

00:17:51,590 --> 00:17:49,200

have just one or two windows in hatches

436

00:17:53,270 --> 00:17:51,600

which face upwards and uh you know

437

00:17:56,070 --> 00:17:53,280

that's where we can see the the the

438

00:17:57,590 --> 00:17:56,080

stars at um at night time and also of

439

00:17:59,830 --> 00:17:57,600

course the russian segment has a number

440

00:18:01,590 --> 00:17:59,840

of windows as well so there are plenty

441

00:18:03,350 --> 00:18:01,600

of windows there are also windows in our

442

00:18:05,029 --> 00:18:03,360

soyuz spacecraft

443

00:18:07,270 --> 00:18:05,039

which look out to the sides of the space

444

00:18:12,230 --> 00:18:07,280

station so overall we get a pretty good

445

00:18:16,950 --> 00:18:14,710

jeff you're very active on social media

446

00:18:19,909 --> 00:18:16,960

the pictures you post on twitter are

447

00:18:24,310 --> 00:18:19,919

just spectacular is that an intentional

448

00:18:29,510 --> 00:18:26,870

well thank you for the comment uh yeah

449

00:18:31,190 --> 00:18:29,520

it might uh and i think

450

00:18:33,110 --> 00:18:31,200

i can speak for all of us we want to

451
00:18:35,830 --> 00:18:33,120
bring the experience to the people of

452
00:18:37,590 --> 00:18:35,840
earth um because it is such a unique

453
00:18:39,669 --> 00:18:37,600
experience and the best way to do that

454
00:18:42,470 --> 00:18:39,679
is through visual imagery either

455
00:18:44,150 --> 00:18:42,480
photography or video

456
00:18:46,470 --> 00:18:44,160
i have a preference i guess toward

457
00:18:48,310 --> 00:18:46,480
photography i've taken lots of pictures

458
00:18:49,990 --> 00:18:48,320
every time i've been up here again

459
00:18:51,830 --> 00:18:50,000
trying to capture some of the things

460
00:18:54,710 --> 00:18:51,840
that tim and tim alluded to earlier with

461
00:18:56,470 --> 00:18:54,720
the wide variety of of objects that we

462
00:18:57,430 --> 00:18:56,480
have and things that we can see on the

463
00:18:58,950 --> 00:18:57,440

earth

464

00:19:01,510 --> 00:18:58,960

among them weather systems and

465

00:19:04,710 --> 00:19:01,520

geographic features and cities and and

466

00:19:06,390 --> 00:19:04,720

now waters uh and and all of that so

467

00:19:07,510 --> 00:19:06,400

it's mainly just bringing

468

00:19:13,590 --> 00:19:07,520

the

469

00:19:17,029 --> 00:19:15,190

gentlemen what a thrill to talk with you

470

00:19:18,630 --> 00:19:17,039

today we're going to let you get back to

471

00:19:21,669 --> 00:19:18,640

work and hopefully we can talk to you

472

00:19:23,830 --> 00:19:21,679

again soon thank you so much

473

00:19:29,750 --> 00:19:23,840

thank you so much it's been our pleasure

474

00:19:36,870 --> 00:19:32,310

station this is houston acr

475

00:19:42,070 --> 00:19:39,190

thanks thank you the weather channel and

