



1
00:00:03,510 --> 00:00:01,910
good morning

2
00:00:05,430 --> 00:00:03,520
i'm eddie bernice johnson from the

3
00:00:07,909 --> 00:00:05,440
science space and technology committee

4
00:00:10,150 --> 00:00:07,919
but we are in district 30

5
00:00:12,390 --> 00:00:10,160
this morning with a number of

6
00:00:14,150 --> 00:00:12,400
eager students we are delighted that

7
00:00:16,870 --> 00:00:14,160
you're there mr peak

8
00:00:18,630 --> 00:00:16,880
and mr williams and i'm going to turn it

9
00:00:20,150 --> 00:00:18,640
right over to the students so they can

10
00:00:23,029 --> 00:00:20,160
have the benefit

11
00:00:28,310 --> 00:00:23,039
of talking with you we're delighted that

12
00:00:34,069 --> 00:00:29,830
we're very happy to talk to you and we

13
00:00:38,229 --> 00:00:36,790

hi gentlemen i'm tatiana brown and this

14

00:00:39,590 --> 00:00:38,239

question is for jeff

15

00:00:41,110 --> 00:00:39,600

how does being in space for such an

16

00:00:42,709 --> 00:00:41,120

extensive period of time affect your

17

00:00:44,069 --> 00:00:42,719

body and what does your routine look

18

00:00:48,630 --> 00:00:44,079

like to maintain your health both in

19

00:00:52,310 --> 00:00:50,549

without the force of gravity on our

20

00:00:55,189 --> 00:00:52,320

bodies and our muscles carrying our

21

00:00:57,510 --> 00:00:55,199

bodies our muscles atrophy of course

22

00:00:58,470 --> 00:00:57,520

our bones also atrophy bones need

23

00:01:00,310 --> 00:00:58,480

exercise

24

00:01:02,389 --> 00:01:00,320

to stay strong

25

00:01:04,149 --> 00:01:02,399

and those are the two primary effects

26

00:01:06,870 --> 00:01:04,159

that we have on our bodies while we're

27

00:01:09,270 --> 00:01:06,880

up here so we exercise every day we have

28

00:01:11,670 --> 00:01:09,280

the a treadmill we use a harness to pull

29

00:01:14,870 --> 00:01:11,680

us down into the treadmill to get a load

30

00:01:16,870 --> 00:01:14,880

we have a cycle ergometer so it's very

31

00:01:19,190 --> 00:01:16,880

similar to getting on a bicycle and

32

00:01:21,510 --> 00:01:19,200

getting exercise that way we also have

33

00:01:23,429 --> 00:01:21,520

the equivalent of a weightlifting

34

00:01:25,429 --> 00:01:23,439

piece of equipment where we can lift

35

00:01:27,830 --> 00:01:25,439

heavy loads and that's

36

00:01:32,789 --> 00:01:27,840

one of the primary ways that we're able

37

00:01:39,190 --> 00:01:34,230

so when you return to earth do you have

38

00:01:43,190 --> 00:01:40,469

we go through

39

00:01:45,350 --> 00:01:43,200

a rehabilitation or a reconditioning

40

00:01:46,950 --> 00:01:45,360

program uh it's typically 45 days

41

00:01:48,710 --> 00:01:46,960

sometimes longer sometimes shorter

42

00:01:51,190 --> 00:01:48,720

working with a trainer

43

00:01:53,670 --> 00:01:51,200

to regain

44

00:01:55,510 --> 00:01:53,680

our full strength and flexibility as

45

00:01:56,870 --> 00:01:55,520

well as our sense of balance balance is

46

00:01:59,510 --> 00:01:56,880

another thing that we have to regain

47

00:02:05,030 --> 00:01:59,520

once we get back

48

00:02:10,309 --> 00:02:08,070

hello hello gentlemen

49

00:02:12,550 --> 00:02:10,319

my name is stephen sanders i go to

50

00:02:14,949 --> 00:02:12,560

duncanville isd

51
00:02:17,910 --> 00:02:14,959
and i do one this question is going

52
00:02:20,710 --> 00:02:17,920
towards tim and tim i want to say

53
00:02:23,190 --> 00:02:20,720
i'm sorry in advance because i was

54
00:02:25,190 --> 00:02:23,200
reading william shakespeare before i

55
00:02:28,390 --> 00:02:25,200
wrote this down

56
00:02:31,990 --> 00:02:28,400
my question is has living in outer space

57
00:02:33,830 --> 00:02:32,000
and conducting scientific experiments

58
00:02:37,270 --> 00:02:33,840
heightened and strengthened your

59
00:02:41,830 --> 00:02:37,280
appreciation for life and if so in what

60
00:02:47,589 --> 00:02:45,589
stephen and everyone else uh dallas

61
00:02:49,589 --> 00:02:47,599
uh it's great to be talking to you today

62
00:02:52,710 --> 00:02:49,599
well that's a very deep question to

63
00:02:54,550 --> 00:02:52,720

start things off with today um but uh

64

00:02:57,190 --> 00:02:54,560

it's a good question i don't think being

65

00:02:59,350 --> 00:02:57,200

in space has changed my appreciation for

66

00:03:01,830 --> 00:02:59,360

life i think i had a very high

67

00:03:04,630 --> 00:03:01,840

appreciation of life um before i started

68

00:03:06,869 --> 00:03:04,640

on this extraordinary journey

69

00:03:09,509 --> 00:03:06,879

but what it does give you being in space

70

00:03:12,309 --> 00:03:09,519

it gives you different perspective and

71

00:03:14,390 --> 00:03:12,319

looking down on the planet um seeing our

72

00:03:16,630 --> 00:03:14,400

atmosphere seeing how thin and fragile

73

00:03:18,229 --> 00:03:16,640

that atmosphere is and seeing the planet

74

00:03:19,750 --> 00:03:18,239

even change through the seasons just

75

00:03:21,509 --> 00:03:19,760

since i've been up here

76
00:03:23,350 --> 00:03:21,519
and i've seen the northern hemisphere go

77
00:03:25,110 --> 00:03:23,360
from from winter to spring and now into

78
00:03:27,270 --> 00:03:25,120
summer and it gives you a very different

79
00:03:29,430 --> 00:03:27,280
perspective on the planet and it makes

80
00:03:31,030 --> 00:03:29,440
you appreciate uh what what a beautiful

81
00:03:33,430 --> 00:03:31,040
planet we have and how we have to look

82
00:03:38,070 --> 00:03:33,440
for it

83
00:03:43,270 --> 00:03:39,509
hello

84
00:03:44,550 --> 00:03:43,280
my name is tyrone crudo from lancaster

85
00:03:46,630 --> 00:03:44,560
high school

86
00:03:48,949 --> 00:03:46,640
and

87
00:03:52,149 --> 00:03:48,959
my uh question is for jeff

88
00:03:55,350 --> 00:03:52,159

um robotics um in my district we have

89

00:03:56,309 --> 00:03:55,360

robotics clubs for even uh elementary

90

00:03:58,710 --> 00:03:56,319

students

91

00:03:59,750 --> 00:03:58,720

how do how to study robotics at an early

92

00:04:06,390 --> 00:03:59,760

age

93

00:04:09,830 --> 00:04:07,589

well i think studying things like

94

00:04:11,750 --> 00:04:09,840

robotics certainly could benefit anybody

95

00:04:13,509 --> 00:04:11,760

that has an interest in that and sounds

96

00:04:15,750 --> 00:04:13,519

like you have an interest so i would

97

00:04:18,710 --> 00:04:15,760

encourage you to continue working in it

98

00:04:21,110 --> 00:04:18,720

robotics uh is a big part of life

99

00:04:22,870 --> 00:04:21,120

nowadays and it's going to only grow in

100

00:04:26,230 --> 00:04:22,880

its importance with lots of different

101

00:04:28,550 --> 00:04:26,240

applications across many disciplines

102

00:04:30,790 --> 00:04:28,560

robotics is a unique problem it combines

103

00:04:33,189 --> 00:04:30,800

a lot of technology it combines

104

00:04:35,590 --> 00:04:33,199

mechanics you you have a problem you're

105

00:04:37,990 --> 00:04:35,600

trying to solve and you use all those

106

00:04:39,350 --> 00:04:38,000

tools to uh to put a system together to

107

00:04:41,909 --> 00:04:39,360

solve the problem so it's a great

108

00:04:42,950 --> 00:04:41,919

exercise just in solving a problem

109

00:04:44,469 --> 00:04:42,960

solving

110

00:04:46,390 --> 00:04:44,479

so i would certainly encourage you to

111

00:04:47,990 --> 00:04:46,400

continue that especially if you have an

112

00:04:50,150 --> 00:04:48,000

interest in it

113

00:04:51,909 --> 00:04:50,160

that interest assuming you have it

114

00:04:53,270 --> 00:04:51,919

it needs to be fostered and that's how

115

00:04:54,230 --> 00:04:53,280

we

116

00:04:56,629 --> 00:04:54,240

learn

117

00:04:59,270 --> 00:04:56,639

in our early years

118

00:05:00,870 --> 00:04:59,280

what we might want to do for the rest of

119

00:05:04,150 --> 00:05:00,880

our life and dedicate

120

00:05:08,629 --> 00:05:04,160

our life's purpose toward

121

00:05:13,510 --> 00:05:11,350

hello gentlemen i'm mariah chavez from

122

00:05:15,749 --> 00:05:13,520

the grand prairie collegiate institute

123

00:05:17,749 --> 00:05:15,759

and this question is for tim could you

124

00:05:22,870 --> 00:05:17,759

please explain what your first

125

00:05:28,550 --> 00:05:24,870

yeah what a great question um my first

126

00:05:30,629 --> 00:05:28,560

experience of space was one of euphoria

127

00:05:32,790 --> 00:05:30,639

uh because it it happened at sort of

128

00:05:34,790 --> 00:05:32,800

eight minutes 48 seconds after launch

129

00:05:37,430 --> 00:05:34,800

when uh the main engines of the sawyers

130

00:05:39,510 --> 00:05:37,440

of the soyuz third stage cut out and you

131

00:05:41,909 --> 00:05:39,520

get a very big jolt forward in the seat

132

00:05:43,189 --> 00:05:41,919

when that happens and that that's at the

133

00:05:46,150 --> 00:05:43,199

point where you know that you're in

134

00:05:47,909 --> 00:05:46,160

space and uh you're in uh microgravity

135

00:05:49,110 --> 00:05:47,919

and looking out the window we were we

136

00:05:50,870 --> 00:05:49,120

were looking

137

00:05:52,710 --> 00:05:50,880

to talk

138

00:05:55,430 --> 00:05:52,720

and looking out the window i saw my

139

00:05:57,270 --> 00:05:55,440

first moon rise very soon after orbital

140

00:05:59,590 --> 00:05:57,280

insertion and then of course shortly

141

00:06:01,749 --> 00:05:59,600

after that i saw my first sunrise out of

142

00:06:03,749 --> 00:06:01,759

my sawyer's right-hand seat window and

143

00:06:07,189 --> 00:06:03,759

it was just the most exhilarating

144

00:06:09,270 --> 00:06:07,199

feeling to uh unloosen your buckles your

145

00:06:11,110 --> 00:06:09,280

harness and to be able to float in your

146

00:06:12,790 --> 00:06:11,120

seat and to be able to look out on

147

00:06:14,629 --> 00:06:12,800

planet earth as we made that very first

148

00:06:16,469 --> 00:06:14,639

orbit for me my very first orbit of

149

00:06:19,270 --> 00:06:16,479

planet earth most exhilarating

150

00:06:24,150 --> 00:06:19,280

experience ever

151
00:06:30,550 --> 00:06:25,909
hi my name is jordan cheatham and this

152
00:06:35,270 --> 00:06:32,870
how often does a cargo ship resupply the

153
00:06:42,150 --> 00:06:35,280
iss and are you allowed to make special

154
00:06:47,510 --> 00:06:44,710
actually we get cargo ships all six or

155
00:06:48,950 --> 00:06:47,520
eight or nine times a year

156
00:06:51,270 --> 00:06:48,960
of different types right now we

157
00:06:53,029 --> 00:06:51,280
currently have four cargo ships uh

158
00:06:54,790 --> 00:06:53,039
either docked or birthed to the space

159
00:06:57,189 --> 00:06:54,800
station we've got two russian cargo

160
00:06:59,430 --> 00:06:57,199
ships progresses and they have

161
00:07:00,390 --> 00:06:59,440
historically flown about four times a

162
00:07:01,990 --> 00:07:00,400
year

163
00:07:04,790 --> 00:07:02,000

we're going down to about three times a

164

00:07:08,390 --> 00:07:04,800

year for a progress we also have a

165

00:07:11,510 --> 00:07:08,400

cygnus uh orbital uh uh corporation has

166

00:07:13,589 --> 00:07:11,520

uh provided that um and that flies a

167

00:07:16,309 --> 00:07:13,599

couple times a year and then we have a

168

00:07:18,390 --> 00:07:16,319

dragon supply ship and that uh flies it

169

00:07:19,430 --> 00:07:18,400

uh two or three times a year

170

00:07:21,510 --> 00:07:19,440

we also

171

00:07:24,070 --> 00:07:21,520

have had supply ships from

172

00:07:26,309 --> 00:07:24,080

the japanese space agency as well as the

173

00:07:29,110 --> 00:07:26,319

european space agency can we make

174

00:07:31,589 --> 00:07:29,120

special requests sure we we get some

175

00:07:33,990 --> 00:07:31,599

some fresh food and vegetables fruits

176

00:07:36,870 --> 00:07:34,000

and vegetables which is always a treat

177

00:07:38,550 --> 00:07:36,880

because we don't get that being up here

178

00:07:40,070 --> 00:07:38,560

we have to eat it pretty quickly before

179

00:07:41,909 --> 00:07:40,080

it goes bad

180

00:07:43,990 --> 00:07:41,919

and we also believe it or not on this

181

00:07:45,350 --> 00:07:44,000

last drag and we got some ice cream set

182

00:07:47,830 --> 00:07:45,360

up for us and we have that in the

183

00:07:49,589 --> 00:07:47,840

freezer and we're enjoying that as we

184

00:07:52,309 --> 00:07:49,599

as we go over the

185

00:07:55,830 --> 00:07:52,319

couple weeks i guess

186

00:08:01,670 --> 00:07:59,029

hi i'm camden from cedar hill um my

187

00:08:03,350 --> 00:08:01,680

question's for tim and my question is is

188

00:08:05,270 --> 00:08:03,360

it hard to juggle your personal life

189

00:08:09,589 --> 00:08:05,280

with your professional life with such a

190

00:08:14,150 --> 00:08:11,670

hi camden that's a good question to ask

191

00:08:16,070 --> 00:08:14,160

and and yes it is hard um we spend a lot

192

00:08:17,430 --> 00:08:16,080

of time away obviously not just the six

193

00:08:19,589 --> 00:08:17,440

months that we're on board the space

194

00:08:21,110 --> 00:08:19,599

station but for the six years i was in

195

00:08:24,309 --> 00:08:21,120

training for this mission i was probably

196

00:08:26,230 --> 00:08:24,319

away from home about 50 of the time um

197

00:08:28,309 --> 00:08:26,240

but you know you know that when you uh

198

00:08:30,790 --> 00:08:28,319

undertake this job and this uh it is a

199

00:08:33,909 --> 00:08:30,800

sacrifice that you make but um in terms

200

00:08:35,829 --> 00:08:33,919

of the privilege uh of going into space

201

00:08:38,310 --> 00:08:35,839

um it's it's really something that you

202

00:08:39,909 --> 00:08:38,320

do as a family you're and i'm very lucky

203

00:08:42,469 --> 00:08:39,919

very fortunate that my family is

204

00:08:43,909 --> 00:08:42,479

incredibly supportive of what i do and

205

00:08:46,710 --> 00:08:43,919

they understand the value and the

206

00:08:48,949 --> 00:08:46,720

benefit of what we're all doing in the

207

00:08:50,230 --> 00:08:48,959

research for space exploration and human

208

00:08:52,230 --> 00:08:50,240

space flight

209

00:08:53,829 --> 00:08:52,240

so yes there are sacrifices to maybe

210

00:08:56,710 --> 00:08:53,839

make but made but i think they're very

211

00:08:56,720 --> 00:09:01,509

thank you

212

00:09:05,430 --> 00:09:03,430

hello i am enrique from the grand

213

00:09:07,430 --> 00:09:05,440

prairie collegiate institute my question

214

00:09:09,350 --> 00:09:07,440

is for jeff

215

00:09:11,030 --> 00:09:09,360

today what do you feel has been your

216

00:09:16,470 --> 00:09:11,040

biggest accomplishment or breakthrough

217

00:09:19,750 --> 00:09:18,230

oh i don't know if i've had a

218

00:09:21,030 --> 00:09:19,760

significant accomplishment or

219

00:09:23,350 --> 00:09:21,040

breakthrough on

220

00:09:25,590 --> 00:09:23,360

my mission i would say that the the

221

00:09:27,750 --> 00:09:25,600

biggest accomplishment and breakthrough

222

00:09:30,630 --> 00:09:27,760

is for the entire international team the

223

00:09:33,269 --> 00:09:30,640

program in uh assembling and building

224

00:09:35,030 --> 00:09:33,279

this magnificent orbital outpost we call

225

00:09:38,310 --> 00:09:35,040

the international space station if you

226

00:09:40,870 --> 00:09:38,320

look at it historically it was a

227

00:09:43,990 --> 00:09:40,880

really the the biggest human achievement

228

00:09:46,150 --> 00:09:44,000

ever in history and continues to be just

229

00:09:47,910 --> 00:09:46,160

running and maintain it of course it is

230

00:09:49,350 --> 00:09:47,920

an orbiting laboratory so we're doing a

231

00:09:51,350 --> 00:09:49,360

lot of research across the whole

232

00:09:53,430 --> 00:09:51,360

disciplines of science

233

00:09:55,910 --> 00:09:53,440

and i could spend a lot of time talking

234

00:09:58,230 --> 00:09:55,920

about uh the research that's going on

235

00:09:59,350 --> 00:09:58,240

here and has gone on here over the last

236

00:10:00,790 --> 00:09:59,360

15

237

00:10:02,949 --> 00:10:00,800

plus years

238

00:10:05,590 --> 00:10:02,959

but i would encourage you to uh to spend

239

00:10:07,910 --> 00:10:05,600

some time on the on the website doing

240

00:10:09,829 --> 00:10:07,920

that but i would say the space station

241

00:10:12,949 --> 00:10:09,839

is the the biggest accomplishment of

242

00:10:16,470 --> 00:10:12,959

this international team

243

00:10:22,069 --> 00:10:19,430

hello i'm australia and my question is

244

00:10:23,590 --> 00:10:22,079

for tim what's your most

245

00:10:28,870 --> 00:10:23,600

challenging what's the most challenging

246

00:10:32,150 --> 00:10:30,870

uh wow there is there are several

247

00:10:34,550 --> 00:10:32,160

challenging things about being an

248

00:10:36,150 --> 00:10:34,560

astronaut um for me one of them in the

249

00:10:38,230 --> 00:10:36,160

early days was certainly learning the

250

00:10:39,590 --> 00:10:38,240

russian language as jeff just mentioned

251
00:10:41,750 --> 00:10:39,600
there you know this is very much an

252
00:10:43,750 --> 00:10:41,760
international space station with an

253
00:10:45,990 --> 00:10:43,760
international crew

254
00:10:48,069 --> 00:10:46,000
and uh and speaking russian uh so that

255
00:10:49,750 --> 00:10:48,079
we can not just uh work professionally

256
00:10:51,030 --> 00:10:49,760
with our russian colleagues but also be

257
00:10:53,030 --> 00:10:51,040
able to socialize with our russian

258
00:10:55,190 --> 00:10:53,040
colleagues is very important and that's

259
00:10:56,870 --> 00:10:55,200
only a challenge but i also think that

260
00:10:58,470 --> 00:10:56,880
as a crew member on board the space

261
00:11:00,630 --> 00:10:58,480
station you have to be a little bit of a

262
00:11:01,990 --> 00:11:00,640
jack of all trades and there are many

263
00:11:04,790 --> 00:11:02,000

trades you need to know obviously we

264

00:11:07,190 --> 00:11:04,800

have a fantastic ground support team um

265

00:11:08,630 --> 00:11:07,200

to help us out with all of the problems

266

00:11:10,470 --> 00:11:08,640

that we might encounter up here on the

267

00:11:12,470 --> 00:11:10,480

space station but we need to try and

268

00:11:14,550 --> 00:11:12,480

retain as much information as we can to

269

00:11:15,910 --> 00:11:14,560

help us through our mission and so i

270

00:11:17,829 --> 00:11:15,920

think that's also a challenge for

271

00:11:19,590 --> 00:11:17,839

astronauts is that the retention of all

272

00:11:21,750 --> 00:11:19,600

the information as we go through our

273

00:11:25,430 --> 00:11:21,760

training

274

00:11:29,670 --> 00:11:27,350

good morning my name is kevin maple and

275

00:11:31,829 --> 00:11:29,680

this question is also for tim how can

276

00:11:33,430 --> 00:11:31,839

schools share ideas for experiments and

277

00:11:43,030 --> 00:11:33,440

other innovations to be considered on

278

00:11:46,389 --> 00:11:44,710

i think sorry it was a bit broken but i

279

00:11:48,630 --> 00:11:46,399

think the question was how can schools

280

00:11:50,069 --> 00:11:48,640

share the ideas for innovation and the

281

00:11:52,550 --> 00:11:50,079

experiments that are going on board the

282

00:11:54,710 --> 00:11:52,560

space station um and as jeff kind of

283

00:11:57,190 --> 00:11:54,720

pointed out earlier there's a fantastic

284

00:11:59,509 --> 00:11:57,200

amount of information on the website

285

00:12:01,269 --> 00:11:59,519

about the scientific research that we're

286

00:12:03,590 --> 00:12:01,279

doing up here on board the space station

287

00:12:05,829 --> 00:12:03,600

but also the educational outreach

288

00:12:07,509 --> 00:12:05,839

programs that we have running and there

289

00:12:08,949 --> 00:12:07,519

are many education outreach programs

290

00:12:11,430 --> 00:12:08,959

running all the time some of them are

291

00:12:12,629 --> 00:12:11,440

based on fitness and nutrition i've just

292

00:12:14,150 --> 00:12:12,639

finished two

293

00:12:16,230 --> 00:12:14,160

one on mission x which is an

294

00:12:18,470 --> 00:12:16,240

international program to get people

295

00:12:20,310 --> 00:12:18,480

involved in in healthy eating and a

296

00:12:22,629 --> 00:12:20,320

healthy way of life

297

00:12:24,790 --> 00:12:22,639

and also looking at research for example

298

00:12:27,110 --> 00:12:24,800

into growing fruits and vegetables on

299

00:12:29,190 --> 00:12:27,120

the onboard the space station so i would

300

00:12:31,110 --> 00:12:29,200

encourage anybody to look online at

301
00:12:31,910 --> 00:12:31,120
these resources and that's a wonderful

302
00:12:33,670 --> 00:12:31,920
way

303
00:12:35,509 --> 00:12:33,680
of getting in touch with other schools

304
00:12:37,350 --> 00:12:35,519
who might be doing similar projects to

305
00:12:39,509 --> 00:12:37,360
you and to be able to share that kind of

306
00:12:42,710 --> 00:12:39,519
information

307
00:12:45,910 --> 00:12:44,470
good morning my name is desiree martinez

308
00:12:48,230 --> 00:12:45,920
and i attend the school of business

309
00:12:50,069 --> 00:12:48,240
management and this question is for jeff

310
00:12:51,910 --> 00:12:50,079
i read that it takes six hours to get to

311
00:12:53,350 --> 00:12:51,920
the iss when you're launched what are

312
00:12:58,310 --> 00:12:53,360
some things you do during your flight

313
00:13:03,110 --> 00:13:00,949

yeah for that six hours like it used to

314

00:13:05,030 --> 00:13:03,120

be two days and then and then two days

315

00:13:06,870 --> 00:13:05,040

we could we could get up out of our

316

00:13:08,949 --> 00:13:06,880

seats and and spend some time in what we

317

00:13:10,069 --> 00:13:08,959

call the habitation module where we

318

00:13:11,430 --> 00:13:10,079

could uh

319

00:13:13,990 --> 00:13:11,440

eat

320

00:13:16,069 --> 00:13:14,000

and take a couple of naps during the

321

00:13:17,829 --> 00:13:16,079

journey here but now we're doing a six

322

00:13:19,350 --> 00:13:17,839

hour rendezvous

323

00:13:22,629 --> 00:13:19,360

you do get a chance to get out of the

324

00:13:24,310 --> 00:13:22,639

seat maybe not everybody does but

325

00:13:27,350 --> 00:13:24,320

maybe one time

326

00:13:28,949 --> 00:13:27,360

to take a break for 10 or 15 minutes but

327

00:13:32,150 --> 00:13:28,959

other than that you're in your seat and

328

00:13:34,550 --> 00:13:32,160

you're doing a variety of orbital burns

329

00:13:36,150 --> 00:13:34,560

or firing of the main engine to adjust

330

00:13:37,430 --> 00:13:36,160

the orbit so that we set up our

331

00:13:39,509 --> 00:13:37,440

rendezvous

332

00:13:42,230 --> 00:13:39,519

with the space station so it's a it's a

333

00:13:45,750 --> 00:13:42,240

pretty busy six hours

334

00:13:49,189 --> 00:13:47,509

hello my name is zoe romo from

335

00:13:51,350 --> 00:13:49,199

dunkinville high school and my question

336

00:13:53,269 --> 00:13:51,360

is for tim

337

00:13:55,430 --> 00:13:53,279

what is the most important research

338

00:14:01,590 --> 00:13:55,440

finding that you have discovered since

339

00:14:06,069 --> 00:14:04,310

well you know we have about 250 if i

340

00:14:09,030 --> 00:14:06,079

just a little bit more than 250

341

00:14:12,150 --> 00:14:09,040

experiments uh during expedition 46 and

342

00:14:14,550 --> 00:14:12,160

47. so there's an awful lot of science

343

00:14:16,629 --> 00:14:14,560

going on and the results of a lot of

344

00:14:18,710 --> 00:14:16,639

that science we won't know for a number

345

00:14:21,829 --> 00:14:18,720

of years to come yet uh because we need

346

00:14:23,430 --> 00:14:21,839

to increase the number of experiments we

347

00:14:25,990 --> 00:14:23,440

run so that we have a good data set to

348

00:14:27,910 --> 00:14:26,000

draw conclusions from um so it's very

349

00:14:29,430 --> 00:14:27,920

difficult to say what are the immediate

350

00:14:31,189 --> 00:14:29,440

conclusions of the science i've been

351
00:14:33,030 --> 00:14:31,199
doing on board the space station what i

352
00:14:35,110 --> 00:14:33,040
can tell you is what i've noticed in my

353
00:14:36,949 --> 00:14:35,120
own body and of course of about 30

354
00:14:38,710 --> 00:14:36,959
experiments i'm doing just on my on

355
00:14:40,069 --> 00:14:38,720
myself as a human life science

356
00:14:41,910 --> 00:14:40,079
experiment

357
00:14:43,990 --> 00:14:41,920
and it's very easy to notice the

358
00:14:46,069 --> 00:14:44,000
physical changes in the first two weeks

359
00:14:48,949 --> 00:14:46,079
of coming to space a very immediate

360
00:14:49,990 --> 00:14:48,959
change a body shift of fluids

361
00:14:52,629 --> 00:14:50,000
up to the

362
00:14:54,629 --> 00:14:52,639
very puffy face i felt very full headed

363
00:14:57,189 --> 00:14:54,639

like i had a blocked up nose uh

364

00:14:59,189 --> 00:14:57,199

increased into cranial pressure and uh

365

00:15:00,870 --> 00:14:59,199

you notice straight away

366

00:15:03,110 --> 00:15:00,880

your blood pressure drops your heart

367

00:15:05,389 --> 00:15:03,120

rate drops and your body goes through

368

00:15:07,829 --> 00:15:05,399

this uh incredible change and

369

00:15:09,750 --> 00:15:07,839

acclimatization to space flight

370

00:15:13,030 --> 00:15:09,760

as jeff mentioned earlier our muscles

371

00:15:15,430 --> 00:15:13,040

atrophy our bone atrophies and slowly

372

00:15:17,670 --> 00:15:15,440

over time also internationals are eye

373

00:15:19,350 --> 00:15:17,680

fight changes as well and so it's

374

00:15:22,150 --> 00:15:19,360

incredible to notice all of these

375

00:15:24,310 --> 00:15:22,160

changes in many ways it's remarkable how

376

00:15:27,509 --> 00:15:24,320

efficient and how effective the human

377

00:15:29,910 --> 00:15:27,519

body is at adapting to new environments

378

00:15:32,230 --> 00:15:29,920

of course on the downside is we have to

379

00:15:34,470 --> 00:15:32,240

re-adapt to come back to planet earth in

380

00:15:37,269 --> 00:15:34,480

a 1g environment for myself in about

381

00:15:37,279 --> 00:15:41,910

thank you

382

00:15:45,829 --> 00:15:43,590

hello

383

00:15:47,829 --> 00:15:45,839

my name is jose ballon and i'm from

384

00:15:49,910 --> 00:15:47,839

grand prairie collegiate institute and

385

00:15:52,389 --> 00:15:49,920

this question is for jeff

386

00:15:54,150 --> 00:15:52,399

what kind of education and training do

387

00:15:58,790 --> 00:15:54,160

you go through to reach the position you

388

00:16:01,670 --> 00:16:00,790

if you go across the core of astronauts

389

00:16:03,670 --> 00:16:01,680

uh

390

00:16:05,990 --> 00:16:03,680

about half of them are military i'm

391

00:16:09,269 --> 00:16:06,000

military and i've got a

392

00:16:11,110 --> 00:16:09,279

education and engineering and most of us

393

00:16:13,110 --> 00:16:11,120

have education in engineering but then

394

00:16:16,790 --> 00:16:13,120

there are the other half of the core

395

00:16:18,710 --> 00:16:16,800

historically if u.s astronauts have had

396

00:16:21,509 --> 00:16:18,720

education in different sciences or

397

00:16:23,189 --> 00:16:21,519

medical doctors or even a few educators

398

00:16:23,990 --> 00:16:23,199

school teachers

399

00:16:25,910 --> 00:16:24,000

so

400

00:16:28,470 --> 00:16:25,920

we've we've got representation from

401
00:16:30,310 --> 00:16:28,480
across the technical and engineering and

402
00:16:31,509 --> 00:16:30,320
scientific spectrum

403
00:16:32,710 --> 00:16:31,519
those

404
00:16:35,189 --> 00:16:32,720
educational

405
00:16:37,509 --> 00:16:35,199
fields give you the background

406
00:16:40,150 --> 00:16:37,519
to at least to make you eligible for the

407
00:16:40,160 --> 00:16:44,150
thank you

408
00:16:48,310 --> 00:16:46,790
hi i'm beijing dewan and this question

409
00:16:50,310 --> 00:16:48,320
is for tim

410
00:16:56,629 --> 00:16:50,320
what is the protocol for someone who

411
00:17:00,550 --> 00:16:57,990
a really good question and one that's

412
00:17:02,870 --> 00:17:00,560
obviously taken very seriously and it

413
00:17:05,909 --> 00:17:02,880

really depends on the urgency of the

414

00:17:07,990 --> 00:17:05,919

situation if it's something fairly minor

415

00:17:09,189 --> 00:17:08,000

then we'll consult with our flight

416

00:17:10,949 --> 00:17:09,199

surgeon

417

00:17:13,429 --> 00:17:10,959

and we'll be able to treat whatever it

418

00:17:16,549 --> 00:17:13,439

is we have a number of medications on

419

00:17:19,510 --> 00:17:16,559

board that we can use we're also

420

00:17:21,350 --> 00:17:19,520

quite highly trained uh in in terms of

421

00:17:23,590 --> 00:17:21,360

first aid and we're able to respond to a

422

00:17:25,429 --> 00:17:23,600

number of different situations up here

423

00:17:27,669 --> 00:17:25,439

but with the help of our flight surgeon

424

00:17:29,669 --> 00:17:27,679

teams on the ground in mission control

425

00:17:31,990 --> 00:17:29,679

we would be able to treat a number of

426

00:17:33,590 --> 00:17:32,000

different situations to to quite a high

427

00:17:35,190 --> 00:17:33,600

level um

428

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

if you notch it at one stage and

429

00:17:39,270 --> 00:17:36,880

something was really serious then of

430

00:17:41,110 --> 00:17:39,280

course the program could even consider

431

00:17:43,830 --> 00:17:41,120

returning a crew member back to planet

432

00:17:45,510 --> 00:17:43,840

earth uh we we have our soyuz spacecraft

433

00:17:47,830 --> 00:17:45,520

remain stocked with us for the entire

434

00:17:49,430 --> 00:17:47,840

duration of our six-month mission and

435

00:17:50,870 --> 00:17:49,440

should that crew of three need to go

436

00:17:53,830 --> 00:17:50,880

back to earth for any reason then they

437

00:17:57,909 --> 00:17:53,840

could always utilize that option

438

00:18:01,430 --> 00:17:59,909

hi i'm clark swann and my question is

439

00:18:03,270 --> 00:18:01,440

for jeff

440

00:18:08,789 --> 00:18:03,280

what is the best possible advice that

441

00:18:13,990 --> 00:18:11,430

well uh i guess i would say

442

00:18:15,110 --> 00:18:14,000

to explore your interest and

443

00:18:21,510 --> 00:18:15,120

and

444

00:18:23,990 --> 00:18:21,520

hear all the time

445

00:18:27,029 --> 00:18:24,000

but everybody has a different slant on

446

00:18:32,230 --> 00:18:30,789

interest that develop into passions

447

00:18:34,230 --> 00:18:32,240

and if you work hard and develop those

448

00:18:35,430 --> 00:18:34,240

passions figure out what they are

449

00:18:37,510 --> 00:18:35,440

um

450

00:18:39,510 --> 00:18:37,520

while you maintain a balanced life you

451
00:18:42,630 --> 00:18:39,520
know with family and friends and whatnot

452
00:18:45,669 --> 00:18:42,640
and sports and other activities uh doors

453
00:18:48,150 --> 00:18:45,679
will open uh and you enter those doors

454
00:18:49,830 --> 00:18:48,160
to uh to take advantage of

455
00:18:51,990 --> 00:18:49,840
of those things and pursue those

456
00:18:54,150 --> 00:18:52,000
passions so that's that's i guess would

457
00:18:56,630 --> 00:18:54,160
be in general what the advice i would

458
00:19:00,310 --> 00:18:56,640
give you

459
00:19:03,350 --> 00:19:01,830
good morning i'm ben mackey i'm the

460
00:19:05,270 --> 00:19:03,360
principal of the school for talented and

461
00:19:06,789 --> 00:19:05,280
gifted here we thank you for being on

462
00:19:08,230 --> 00:19:06,799
with us we're told you got one minute

463
00:19:09,909 --> 00:19:08,240

left is there anything else you all

464

00:19:11,430 --> 00:19:09,919

would like to say to our wonderful

465

00:19:15,510 --> 00:19:11,440

students faculty and all the guests that

466

00:19:19,830 --> 00:19:17,110

well i know you're in a magnet school

467

00:19:21,190 --> 00:19:19,840

there and so i wanna i know that the

468

00:19:22,950 --> 00:19:21,200

the students are

469

00:19:24,310 --> 00:19:22,960

selected for the programs there i want

470

00:19:25,909 --> 00:19:24,320

to congratulate them on their

471

00:19:27,590 --> 00:19:25,919

achievement and being selected for the

472

00:19:30,310 --> 00:19:27,600

programs there

473

00:19:32,310 --> 00:19:30,320

i've been very impressed with what i've

474

00:19:34,950 --> 00:19:32,320

read about the the program that you have

475

00:19:36,549 --> 00:19:34,960

there um in the in the that covers the

476

00:19:39,510 --> 00:19:36,559

dallas area

477

00:19:41,270 --> 00:19:39,520

so uh i would encourage the students to

478

00:19:42,870 --> 00:19:41,280

continue working hard and as i said

479

00:19:45,350 --> 00:19:42,880

earlier pursue

480

00:19:46,150 --> 00:19:45,360

the passions as they develop i also want

481

00:19:49,669 --> 00:19:46,160

to

482

00:19:52,070 --> 00:19:49,679

the staff that are present there my

483

00:19:53,430 --> 00:19:52,080

father was a school teacher for almost

484

00:19:55,909 --> 00:19:53,440

40 years

485

00:19:59,590 --> 00:19:55,919

so i know what the investment means to

486

00:20:01,669 --> 00:19:59,600

uh to people i often hear from folks

487

00:20:03,430 --> 00:20:01,679

the impact that my father made in

488

00:20:05,190 --> 00:20:03,440

people's lives so

489

00:20:09,190 --> 00:20:05,200

i know that your impact in life so thank

490

00:20:12,149 --> 00:20:10,549

thank you so much good luck with the

491

00:20:22,470 --> 00:20:12,159

rest of your mission we'll see you on