



1
00:00:03,350 --> 00:00:01,910
hi everybody josh barley here inside

2
00:00:05,030 --> 00:00:03,360
mission control houston i'm joined by

3
00:00:07,110 --> 00:00:05,040
ginger carrick a flight director also

4
00:00:08,470 --> 00:00:07,120
works for mission operations we are here

5
00:00:09,430 --> 00:00:08,480
to take her well she's here to take your

6
00:00:10,629 --> 00:00:09,440
questions i'm probably going to be a

7
00:00:12,709 --> 00:00:10,639
little bit quiet because ginger's the

8
00:00:15,829 --> 00:00:12,719
smart one so let's uh let's go ahead and

9
00:00:19,269 --> 00:00:15,839
get your questions there in el paso

10
00:00:21,429 --> 00:00:19,279
hi my name is alexis and my question is

11
00:00:24,550 --> 00:00:21,439
what did you study at hank's high school

12
00:00:27,109 --> 00:00:24,560
in el paso and at texas tech university

13
00:00:30,950 --> 00:00:27,119

that prepared you for work at nasa

14

00:00:32,709 --> 00:00:30,960

hi alexis i studied physics um i enjoyed

15

00:00:34,630 --> 00:00:32,719

all math and science classes in high

16

00:00:37,830 --> 00:00:34,640

school but when i went to texas tech i

17

00:00:40,389 --> 00:00:37,840

majored in physics and got my master's

18

00:00:42,069 --> 00:00:40,399

my bachelor's and my master's degree and

19

00:00:44,069 --> 00:00:42,079

the reason it helps is physics provides

20

00:00:46,549 --> 00:00:44,079

you a very broad base of all the

21

00:00:48,229 --> 00:00:46,559

different types of sciences and here at

22

00:00:51,590 --> 00:00:48,239

nasa we work with all different kinds of

23

00:00:51,600 --> 00:01:00,950

thank you

24

00:01:05,910 --> 00:01:03,750

hi my name is adrian perez and my

25

00:01:07,830 --> 00:01:05,920

question is did you have a special

26

00:01:10,070 --> 00:01:07,840

teacher in high school that pushed you

27

00:01:12,950 --> 00:01:10,080

toward your nasa goals

28

00:01:15,109 --> 00:01:12,960

um hi adrian yes i certainly did

29

00:01:18,390 --> 00:01:15,119

my high school chemistry teacher his

30

00:01:20,630 --> 00:01:18,400

name was henry masterson and he always

31

00:01:23,350 --> 00:01:20,640

encouraged me to to

32

00:01:25,749 --> 00:01:23,360

do really well in my in my classes but

33

00:01:27,590 --> 00:01:25,759

i remember he also encouraged me to stay

34

00:01:29,350 --> 00:01:27,600

home when we had the shuttle launches

35

00:01:30,789 --> 00:01:29,360

and so even if i had to miss chemistry

36

00:01:33,350 --> 00:01:30,799

class he thought it was more important

37

00:01:35,109 --> 00:01:33,360

for me to pursue my interest at nasa

38

00:01:39,030 --> 00:01:35,119

although i had to do extra work to make

39

00:01:44,310 --> 00:01:39,040

sure that that i my grades stayed up

40

00:01:49,030 --> 00:01:46,789

hello my name is leslie and

41

00:01:51,109 --> 00:01:49,040

my question is what was it like being at

42

00:01:53,429 --> 00:01:51,119

nasa intern how can i apply to work at

43

00:01:56,389 --> 00:01:53,439

nasa in the future

44

00:01:58,389 --> 00:01:56,399

i loved being a nasa intern i can still

45

00:02:00,950 --> 00:01:58,399

remember the very first day that i came

46

00:02:03,590 --> 00:02:00,960

on site and when you drive in you used

47

00:02:06,389 --> 00:02:03,600

to be able to see the big saturn rocket

48

00:02:09,589 --> 00:02:06,399

and i thought my gosh i have scored i

49

00:02:12,309 --> 00:02:09,599

finally got here and i was able to work

50

00:02:14,869 --> 00:02:12,319

on a lot of interesting projects but

51
00:02:16,550 --> 00:02:14,879
anyone if you have a good gpa and and

52
00:02:18,229 --> 00:02:16,560
primarily if you're interested in math

53
00:02:20,949 --> 00:02:18,239
and science but they do offer other

54
00:02:22,550 --> 00:02:20,959
internships as well but you can go to

55
00:02:24,070 --> 00:02:22,560
interns.nasa.gov

56
00:02:27,510 --> 00:02:24,080
and it'll tell you all about how to

57
00:02:27,520 --> 00:02:34,550
thank you

58
00:02:40,070 --> 00:02:37,350
hi my name is erica and my question is

59
00:02:42,390 --> 00:02:40,080
you are the first non-astronaut capcom

60
00:02:45,350 --> 00:02:42,400
what is a capcom and why is why was the

61
00:02:48,070 --> 00:02:45,360
position only held by astronauts that's

62
00:02:50,790 --> 00:02:48,080
an interesting question so that capcom

63
00:02:52,630 --> 00:02:50,800

is short for capsule communicator but

64

00:02:55,110 --> 00:02:52,640

really it's the person in mission

65

00:02:57,430 --> 00:02:55,120

control that talks to the crew so when

66

00:02:59,830 --> 00:02:57,440

the crew says houston we have a problem

67

00:03:02,949 --> 00:02:59,840

i'd be the person to key the mic and ask

68

00:03:04,949 --> 00:03:02,959

them what the problem is um historically

69

00:03:07,350 --> 00:03:04,959

it has always been an astronaut because

70

00:03:09,509 --> 00:03:07,360

the people that were in space wanted to

71

00:03:11,750 --> 00:03:09,519

talk to somebody on the ground that had

72

00:03:14,630 --> 00:03:11,760

seen what they had seen been where they

73

00:03:17,110 --> 00:03:14,640

had been and thought like a crew member

74

00:03:18,790 --> 00:03:17,120

i was able to perform this task to be

75

00:03:20,790 --> 00:03:18,800

the first person because for the

76

00:03:23,190 --> 00:03:20,800

international space station when we had

77

00:03:24,949 --> 00:03:23,200

the first crew on board there were no

78

00:03:26,550 --> 00:03:24,959

astronauts that had seen what they had

79

00:03:28,550 --> 00:03:26,560

seen and been where they had been since

80

00:03:30,550 --> 00:03:28,560

they were the first one but i had an

81

00:03:32,710 --> 00:03:30,560

opportunity to train four years with

82

00:03:35,350 --> 00:03:32,720

that crew so i was in a better position

83

00:03:36,710 --> 00:03:35,360

to do that and now it's a career path

84

00:03:40,229 --> 00:03:36,720

for

85

00:03:44,949 --> 00:03:40,239

a lot of different non-astronauts

86

00:03:49,110 --> 00:03:47,350

hi my name is sally and my question is

87

00:03:51,430 --> 00:03:49,120

what different positions do you hold in

88

00:03:53,110 --> 00:03:51,440

mission control before becoming a flight

89

00:03:54,390 --> 00:03:53,120

director

90

00:03:56,470 --> 00:03:54,400

um

91

00:03:58,470 --> 00:03:56,480

the path to a flight director normally

92

00:03:59,910 --> 00:03:58,480

you sit in one of the consoles here in

93

00:04:01,830 --> 00:03:59,920

mission control we have a bunch of

94

00:04:04,309 --> 00:04:01,840

different ones but the only one that i

95

00:04:07,750 --> 00:04:04,319

had ever sat at was the capcom or the

96

00:04:13,110 --> 00:04:07,760

capsule communicator console

97

00:04:17,990 --> 00:04:15,830

my name my name is jennifer my question

98

00:04:20,550 --> 00:04:18,000

is how do austrians train to use

99

00:04:23,510 --> 00:04:20,560

spacewalks and how does mission control

100

00:04:26,070 --> 00:04:23,520

support spacewalks on the iss

101
00:04:28,230 --> 00:04:26,080
okay so spacewalk is a very dangerous

102
00:04:30,950 --> 00:04:28,240
event and we've had some recently where

103
00:04:32,629 --> 00:04:30,960
we that has uh really uh come into play

104
00:04:36,150 --> 00:04:32,639
but so we want to make sure the crews

105
00:04:37,670 --> 00:04:36,160
are as prepared as they possibly can be

106
00:04:40,070 --> 00:04:37,680
one of the ways that we can train is we

107
00:04:41,749 --> 00:04:40,080
have this very large swimming pool

108
00:04:43,270 --> 00:04:41,759
where we will take the astronaut in the

109
00:04:45,110 --> 00:04:43,280
suit and put them in the swimming pool

110
00:04:47,270 --> 00:04:45,120
because that's really the only place you

111
00:04:49,749 --> 00:04:47,280
can simulate uh to the best of our

112
00:04:52,390 --> 00:04:49,759
abilities not a zero gravity i wish we

113
00:04:53,909 --> 00:04:52,400

had a zero gravity room sometimes we

114

00:04:56,469 --> 00:04:53,919

watch some of these movies and you think

115

00:04:58,310 --> 00:04:56,479

we have one but we do not so we practice

116

00:05:00,469 --> 00:04:58,320

that in the pool and they practice the

117

00:05:02,629 --> 00:05:00,479

tasks that they will do outside they

118

00:05:04,710 --> 00:05:02,639

also practice their communication with

119

00:05:06,390 --> 00:05:04,720

the folks here in mission control so

120

00:05:09,110 --> 00:05:06,400

that when we're ready on the day of the

121

00:05:10,629 --> 00:05:09,120

event we have a full team in here and

122

00:05:12,550 --> 00:05:10,639

people have practiced and they

123

00:05:14,710 --> 00:05:12,560

understand what the tasks the crews are

124

00:05:16,870 --> 00:05:14,720

going to perform and they also even

125

00:05:19,350 --> 00:05:16,880

practice what if this goes wrong what if

126

00:05:21,110 --> 00:05:19,360

that goes wrong and

127

00:05:23,110 --> 00:05:21,120

so that on the day of execution

128

00:05:31,350 --> 00:05:23,120

everybody is prepared for anything that

129

00:05:35,909 --> 00:05:34,150

my name is destiny my question is

130

00:05:38,390 --> 00:05:35,919

how is one chosen to be the flight

131

00:05:40,790 --> 00:05:38,400

director and how long do you train

132

00:05:42,710 --> 00:05:40,800

wow so it's actually fairly competitive

133

00:05:44,870 --> 00:05:42,720

to be a flight director i forget how

134

00:05:46,870 --> 00:05:44,880

many we're up to now 88. it's gonna be

135

00:05:48,790 --> 00:05:46,880

in the 80s yeah yeah so in the history

136

00:05:49,990 --> 00:05:48,800

of the program since 1958 there have

137

00:05:53,110 --> 00:05:50,000

only been

138

00:05:54,790 --> 00:05:53,120

about 88 or so flight directors so every

139

00:05:57,189 --> 00:05:54,800

couple of years um

140

00:05:59,749 --> 00:05:57,199

we accept applications and it's usually

141

00:06:02,390 --> 00:05:59,759

a top performer in one of the other

142

00:06:04,950 --> 00:06:02,400

system areas here and potentially people

143

00:06:07,909 --> 00:06:04,960

that have management experience i got in

144

00:06:09,670 --> 00:06:07,919

in 2005 with a class of eight other

145

00:06:12,230 --> 00:06:09,680

individuals

146

00:06:14,150 --> 00:06:12,240

and then i started my training to do a

147

00:06:16,710 --> 00:06:14,160

basic space station operations it

148

00:06:17,670 --> 00:06:16,720

requires about nine months to a year of

149

00:06:19,670 --> 00:06:17,680

training

150

00:06:21,270 --> 00:06:19,680

once you get working in here then they

151
00:06:22,629 --> 00:06:21,280
allow you to do

152
00:06:25,110 --> 00:06:22,639
other events that are a little bit more

153
00:06:26,790 --> 00:06:25,120
complicated like docking

154
00:06:29,110 --> 00:06:26,800
bringing in a new vehicle and letting

155
00:06:32,390 --> 00:06:29,120
that vehicle attach to the space station

156
00:06:36,629 --> 00:06:32,400
or conducting space walks

157
00:06:40,150 --> 00:06:38,390
hi my name is bella lawrence and my

158
00:06:41,749 --> 00:06:40,160
question is is there anyone outside of

159
00:06:43,990 --> 00:06:41,759
mission control that tells the flight

160
00:06:46,830 --> 00:06:44,000
director what he or she should do

161
00:06:49,990 --> 00:06:46,840
besides my mother

162
00:06:52,070 --> 00:06:50,000
no no seriously in the in mission

163
00:06:54,469 --> 00:06:52,080

control you have one person in charge

164

00:06:56,710 --> 00:06:54,479

and one person only um

165

00:06:58,790 --> 00:06:56,720

i will give you an example if the if the

166

00:07:00,870 --> 00:06:58,800

president himself if i were executing a

167

00:07:02,870 --> 00:07:00,880

mission and the president walked in and

168

00:07:05,270 --> 00:07:02,880

directed me to do something different

169

00:07:07,110 --> 00:07:05,280

that i thought was unsafe for either the

170

00:07:09,909 --> 00:07:07,120

crew or the vehicle i have full

171

00:07:11,909 --> 00:07:09,919

authority to override that decision so

172

00:07:13,830 --> 00:07:11,919

we have to set it up that way to protect

173

00:07:16,309 --> 00:07:13,840

the safety of the crew and the safety of

174

00:07:20,230 --> 00:07:16,319

our space station

175

00:07:24,309 --> 00:07:22,150

hello my name is lizette garza and my

176

00:07:25,990 --> 00:07:24,319

question is how many positions are in

177

00:07:28,309 --> 00:07:26,000

mission control and how are you chosen

178

00:07:31,510 --> 00:07:28,319

to work in a particular position let's

179

00:07:35,029 --> 00:07:33,670

it looks like there's about 20 of us in

180

00:07:36,790 --> 00:07:35,039

here today

181

00:07:38,950 --> 00:07:36,800

so this is what you're what you're

182

00:07:41,270 --> 00:07:38,960

seeing now is mission control during the

183

00:07:43,029 --> 00:07:41,280

the daytime hours

184

00:07:45,350 --> 00:07:43,039

right now the crew is on the second half

185

00:07:47,270 --> 00:07:45,360

of their work day and they will be going

186

00:07:49,670 --> 00:07:47,280

to sleep a little bit later this

187

00:07:52,629 --> 00:07:49,680

afternoon around 3 30 our time when they

188

00:07:55,270 --> 00:07:52,639

go to sleep this room will have roughly

189

00:07:56,629 --> 00:07:55,280

about five or six people in here so we

190

00:07:58,550 --> 00:07:56,639

down staff where people are just

191

00:08:00,869 --> 00:07:58,560

monitoring the space station systems

192

00:08:02,869 --> 00:08:00,879

while the crew sleeps

193

00:08:05,029 --> 00:08:02,879

the second part of your question was i

194

00:08:07,510 --> 00:08:05,039

think how you you become a flight

195

00:08:09,430 --> 00:08:07,520

controller you study math and science a

196

00:08:12,950 --> 00:08:09,440

lot of these folks have bachelor's

197

00:08:15,110 --> 00:08:12,960

degrees in math science engineering

198

00:08:17,430 --> 00:08:15,120

they don't necessarily work in their

199

00:08:19,270 --> 00:08:17,440

specialty say you studied mechanical

200

00:08:20,550 --> 00:08:19,280

engineering or electrical engineering

201
00:08:22,390 --> 00:08:20,560
you might find yourself working with

202
00:08:25,110 --> 00:08:22,400
computers

203
00:08:27,830 --> 00:08:25,120
but the important thing is they they

204
00:08:29,830 --> 00:08:27,840
learn how to think as a critical problem

205
00:08:31,110 --> 00:08:29,840
solver by studying these subjects and

206
00:08:33,670 --> 00:08:31,120
then we

207
00:08:39,990 --> 00:08:33,680
make use of those skills here in mission

208
00:08:44,389 --> 00:08:42,389
hi my name's adrian dinger and my

209
00:08:45,990 --> 00:08:44,399
question is what is the most difficult

210
00:08:48,070 --> 00:08:46,000
emotional obstacle that you must

211
00:08:50,230 --> 00:08:48,080
overcome while a mission is going on and

212
00:08:53,190 --> 00:08:50,240
how do you cope with this ah

213
00:08:55,350 --> 00:08:53,200

that's a good question so sometimes i

214

00:08:58,230 --> 00:08:55,360

would work missions in here when my best

215

00:09:00,230 --> 00:08:58,240

friends were on orbit and you worry

216

00:09:01,990 --> 00:09:00,240

about them as your friend you i'm a

217

00:09:04,389 --> 00:09:02,000

physicist so when they are getting ready

218

00:09:07,110 --> 00:09:04,399

to launch i understand the physics of

219

00:09:08,389 --> 00:09:07,120

the rocket and in my scientific mind i

220

00:09:10,710 --> 00:09:08,399

know that it's safe

221

00:09:12,230 --> 00:09:10,720

but in my emotional side that's my

222

00:09:13,829 --> 00:09:12,240

friend and they're being attached to

223

00:09:15,430 --> 00:09:13,839

this big old rocket and something might

224

00:09:18,150 --> 00:09:15,440

happen

225

00:09:20,230 --> 00:09:18,160

you have to compartmentalize that

226

00:09:22,150 --> 00:09:20,240

you cannot let emotions

227

00:09:22,949 --> 00:09:22,160

feed into the job that you have to do

228

00:09:25,110 --> 00:09:22,959

here

229

00:09:27,030 --> 00:09:25,120

i have had a grandmother pass away

230

00:09:29,750 --> 00:09:27,040

during a mission that i was working

231

00:09:31,910 --> 00:09:29,760

where i had to deal with that afterwards

232

00:09:34,389 --> 00:09:31,920

and there's been some scary situations

233

00:09:35,670 --> 00:09:34,399

in here but you cannot exhibit that in

234

00:09:37,350 --> 00:09:35,680

front of the team because you are their

235

00:09:46,310 --> 00:09:37,360

leader and you need to make sure that

236

00:09:51,030 --> 00:09:49,350

hi my name is ariana and my question is

237

00:09:52,550 --> 00:09:51,040

how does mission control work through

238

00:09:55,670 --> 00:09:52,560

problems

239

00:09:57,430 --> 00:09:55,680

oh well we work as a team that is the

240

00:09:59,509 --> 00:09:57,440

most important part about working in

241

00:10:02,550 --> 00:09:59,519

mission control we have a lot of

242

00:10:05,430 --> 00:10:02,560

individually smart people but and i that

243

00:10:08,949 --> 00:10:05,440

i look to to ask very detailed questions

244

00:10:11,590 --> 00:10:08,959

but ultimately we we discuss um

245

00:10:13,509 --> 00:10:11,600

the uh the problem that we're facing and

246

00:10:16,069 --> 00:10:13,519

get inputs from everybody whether you're

247

00:10:18,069 --> 00:10:16,079

the one that's um that's the smartest in

248

00:10:20,870 --> 00:10:18,079

that area or not and then as a team

249

00:10:22,790 --> 00:10:20,880

collectively we uh make decisions it's

250

00:10:24,150 --> 00:10:22,800

very methodical it it's that's one

251
00:10:25,509 --> 00:10:24,160
comment i always tell people is it's not

252
00:10:27,590 --> 00:10:25,519
like the movies at all like you see the

253
00:10:29,350 --> 00:10:27,600
movies it's all dramatic and

254
00:10:30,550 --> 00:10:29,360
crazy with music playing and that's not

255
00:10:31,750 --> 00:10:30,560
at i think the first thing people

256
00:10:33,750 --> 00:10:31,760
realize whenever they walk in here it's

257
00:10:44,630 --> 00:10:33,760
just not like it's very

258
00:10:49,110 --> 00:10:46,949
hello my name is miguel and

259
00:10:51,110 --> 00:10:49,120
my question is have you seen the movie

260
00:10:52,870 --> 00:10:51,120
gravity does it scare you and how likely

261
00:10:54,949 --> 00:10:52,880
would such a scenario be

262
00:10:57,910 --> 00:10:54,959
i knew somebody was going to ask me that

263
00:11:00,389 --> 00:10:57,920

so no i didn't get time i was very busy

264

00:11:02,310 --> 00:11:00,399

and i never made it to i did i never

265

00:11:04,949 --> 00:11:02,320

made it to go see it and then so i'm

266

00:11:07,030 --> 00:11:04,959

looking for it on on netflix or whatever

267

00:11:10,389 --> 00:11:07,040

but so i will eventually watch that i

268

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

have heard about it and um no

269

00:11:15,110 --> 00:11:11,200

no

270

00:11:17,190 --> 00:11:15,120

so when we do space walks we always make

271

00:11:19,990 --> 00:11:17,200

sure there are two what they call

272

00:11:22,630 --> 00:11:20,000

tethers hooking together we would never

273

00:11:24,949 --> 00:11:22,640

ever ever be in a scenario where our

274

00:11:26,949 --> 00:11:24,959

crew member would be free flying now i

275

00:11:29,190 --> 00:11:26,959

say never never if something really very

276

00:11:30,630 --> 00:11:29,200

strange were to happen and we did

277

00:11:32,710 --> 00:11:30,640

the crews are actually equipped with

278

00:11:35,509 --> 00:11:32,720

these little backpacks that can help

279

00:11:37,670 --> 00:11:35,519

them get back to structure um but i

280

00:11:40,790 --> 00:11:37,680

think in the movie there's a piece of

281

00:11:43,110 --> 00:11:40,800

debris that comes out yeah we monitor

282

00:11:45,190 --> 00:11:43,120

debris all the time so the chances of

283

00:11:47,910 --> 00:11:45,200

that surprising us especially during a

284

00:11:54,470 --> 00:11:47,920

space walk nah nah nah but i hear it's a

285

00:11:59,030 --> 00:11:56,949

my name is helene bach and my question

286

00:12:00,949 --> 00:11:59,040

is have the astronauts ever experienced

287

00:12:03,030 --> 00:12:00,959

a danger that required them to leave the

288

00:12:04,790 --> 00:12:03,040

international space station ah that's

289

00:12:07,990 --> 00:12:04,800

okay that's an excellent question so

290

00:12:10,550 --> 00:12:08,000

that worries us um so far today we have

291

00:12:11,990 --> 00:12:10,560

never had to do that but we have come

292

00:12:13,910 --> 00:12:12,000

close

293

00:12:15,990 --> 00:12:13,920

as i mentioned those pieces of debris

294

00:12:18,470 --> 00:12:16,000

that we talked about for the movie

295

00:12:21,110 --> 00:12:18,480

we have flight controllers here that

296

00:12:23,110 --> 00:12:21,120

monitor all you've heard of space junk

297

00:12:25,030 --> 00:12:23,120

so things that are out there floating

298

00:12:27,590 --> 00:12:25,040

around that if they come in contact with

299

00:12:29,750 --> 00:12:27,600

the space station could puncture the

300

00:12:31,750 --> 00:12:29,760

whole of the space station and cause all

301
00:12:33,750 --> 00:12:31,760
the air to go out

302
00:12:35,990 --> 00:12:33,760
normally we know about these things way

303
00:12:37,670 --> 00:12:36,000
in advance and what we do is we use our

304
00:12:40,150 --> 00:12:37,680
reboost engines and we move the space

305
00:12:42,710 --> 00:12:40,160
station out of the way of the debris but

306
00:12:44,550 --> 00:12:42,720
sometimes there are items that we maybe

307
00:12:45,350 --> 00:12:44,560
didn't know we weren't able to track as

308
00:12:48,310 --> 00:12:45,360
well

309
00:12:50,870 --> 00:12:48,320
that come in with a late notice and the

310
00:12:53,350 --> 00:12:50,880
only thing we can do is tell the crew go

311
00:12:54,389 --> 00:12:53,360
into your soyuz or your crew return

312
00:12:56,470 --> 00:12:54,399
capsule

313
00:12:58,230 --> 00:12:56,480

shut the hatch and wait for us to tell

314

00:13:00,550 --> 00:12:58,240

you that it's all clear and we've had to

315

00:13:03,670 --> 00:13:00,560

do that what three times in the history

316

00:13:03,680 --> 00:13:07,829

thank you

317

00:13:12,230 --> 00:13:10,310

hi my name is kelsey barron and my

318

00:13:16,470 --> 00:13:12,240

question is what do you do while

319

00:13:21,990 --> 00:13:18,550

we say thank you um

320

00:13:23,990 --> 00:13:22,000

we uh we are always very busy in here so

321

00:13:25,910 --> 00:13:24,000

those when we're watching a mission and

322

00:13:27,350 --> 00:13:25,920

everything's going smoothly we're

323

00:13:29,030 --> 00:13:27,360

looking at you know what the crew is

324

00:13:32,310 --> 00:13:29,040

doing tomorrow what the crew is doing

325

00:13:35,110 --> 00:13:32,320

the next day uh we're talking about

326

00:13:37,030 --> 00:13:35,120

hardware failures that that we have been

327

00:13:39,829 --> 00:13:37,040

working on that we need to reach a

328

00:13:42,710 --> 00:13:39,839

resolution on in a couple of weeks

329

00:13:44,629 --> 00:13:42,720

so there are other things that we can do

330

00:13:46,310 --> 00:13:44,639

that if the crew doesn't need us right

331

00:13:48,230 --> 00:13:46,320

now but we're always monitoring the

332

00:13:49,910 --> 00:13:48,240

systems on board to make sure that the

333

00:13:52,629 --> 00:13:49,920

system is still

334

00:13:57,750 --> 00:13:52,639

operating nominally

335

00:14:01,750 --> 00:13:59,829

hello my name is gabriel and my question

336

00:14:03,910 --> 00:14:01,760

is what type of projects are you

337

00:14:06,470 --> 00:14:03,920

currently involved in

338

00:14:09,590 --> 00:14:06,480

so right now i was a flight director for

339

00:14:12,629 --> 00:14:09,600

eight years but for the last year i have

340

00:14:15,269 --> 00:14:12,639

been reassigned to a management position

341

00:14:18,629 --> 00:14:15,279

so i am looking at

342

00:14:21,269 --> 00:14:18,639

what mission control will look like in

343

00:14:23,750 --> 00:14:21,279

next year and five years from now as you

344

00:14:26,629 --> 00:14:23,760

know the space station has been

345

00:14:28,629 --> 00:14:26,639

authorized to operate till 2024 so my

346

00:14:30,949 --> 00:14:28,639

job is to make sure that i have all the

347

00:14:32,790 --> 00:14:30,959

right people in place to do that and

348

00:14:34,710 --> 00:14:32,800

that we have all the right equipment in

349

00:14:38,310 --> 00:14:34,720

here to be able to continue to support

350

00:14:38,320 --> 00:14:42,150

thank you

351

00:14:45,430 --> 00:14:43,670

my name is alyssa coleman and my

352

00:14:47,030 --> 00:14:45,440

question is what kind of science is

353

00:14:49,430 --> 00:14:47,040

conducted on the international space

354

00:14:51,189 --> 00:14:49,440

station oh wow what kind of science is

355

00:14:52,310 --> 00:14:51,199

not conducted on the international space

356

00:14:53,910 --> 00:14:52,320

station so

357

00:14:57,030 --> 00:14:53,920

now that we have it constructed we

358

00:14:59,670 --> 00:14:57,040

that's we're busy doing that every day

359

00:15:03,350 --> 00:14:59,680

we have a lot of human health science uh

360

00:15:05,829 --> 00:15:03,360

biology biology some earth science

361

00:15:07,509 --> 00:15:05,839

physics space science

362

00:15:09,750 --> 00:15:07,519

primarily we're studying we want to

363

00:15:12,150 --> 00:15:09,760

understand the effects of space on the

364

00:15:14,870 --> 00:15:12,160

human body so that if you know folks

365

00:15:17,030 --> 00:15:14,880

decide we want to go beyond low earth

366

00:15:19,509 --> 00:15:17,040

orbit that we understand what we need to

367

00:15:22,470 --> 00:15:19,519

protect the astronauts from

368

00:15:24,790 --> 00:15:22,480

and we're also testing out new systems

369

00:15:25,990 --> 00:15:24,800

that we would use on these long duration

370

00:15:28,949 --> 00:15:26,000

missions like if we were going to the

371

00:15:29,670 --> 00:15:28,959

mar to mars or to the moon

372

00:15:33,430 --> 00:15:29,680

that

373

00:15:34,710 --> 00:15:33,440

in-house right now we use the space

374

00:15:38,470 --> 00:15:34,720

station to test those out and we

375

00:15:38,480 --> 00:15:44,949

thank you

376

00:15:50,150 --> 00:15:47,030

hi my name is amber why is the

377

00:15:51,990 --> 00:15:50,160

international space station worth doing

378

00:15:54,949 --> 00:15:52,000

wow there are hundreds of different

379

00:15:57,430 --> 00:15:54,959

answers to this question

380

00:16:01,430 --> 00:15:57,440

i from my position i can see the

381

00:16:02,790 --> 00:16:01,440

benefits that our research has on

382

00:16:05,230 --> 00:16:02,800

on the general population let me give

383

00:16:07,430 --> 00:16:05,240

you an example you know my mom has

384

00:16:09,749 --> 00:16:07,440

osteoporosis what that means is you get

385

00:16:12,069 --> 00:16:09,759

a weakening of the of your bones as you

386

00:16:13,590 --> 00:16:12,079

age and they become more brittle

387

00:16:15,990 --> 00:16:13,600

in space we're able to conduct

388

00:16:17,509 --> 00:16:16,000

experiments because uh the the crew

389

00:16:19,749 --> 00:16:17,519

members lose

390

00:16:20,949 --> 00:16:19,759

calcium from their bones and their bones

391

00:16:22,629 --> 00:16:20,959

are also

392

00:16:25,990 --> 00:16:22,639

starting to weaken so we've been able to

393

00:16:27,590 --> 00:16:26,000

do some experiments on board that now

394

00:16:29,749 --> 00:16:27,600

are in you know can go through clinical

395

00:16:32,310 --> 00:16:29,759

trials and be given to people on the

396

00:16:34,230 --> 00:16:32,320

earth and maybe my mom you know or me

397

00:16:36,230 --> 00:16:34,240

before that happens to me

398

00:16:38,629 --> 00:16:36,240

i can benefit from that there's also

399

00:16:41,269 --> 00:16:38,639

some cancer research that we're doing on

400

00:16:42,230 --> 00:16:41,279

how to provide localized breast cancer

401
00:16:43,430 --> 00:16:42,240
treatment

402
00:16:45,670 --> 00:16:43,440
and i know a lot of people with breast

403
00:16:47,430 --> 00:16:45,680
cancer so for me it's the human health

404
00:16:51,030 --> 00:16:47,440
benefits

405
00:16:52,470 --> 00:16:51,040
working together with we work with 16

406
00:16:53,269 --> 00:16:52,480
different countries

407
00:16:55,269 --> 00:16:53,279
and

408
00:16:58,150 --> 00:16:55,279
you know while our politicians may not

409
00:16:59,350 --> 00:16:58,160
always get along we are a shiny example

410
00:17:00,790 --> 00:16:59,360
of how

411
00:17:03,030 --> 00:17:00,800
people from different backgrounds and

412
00:17:04,949 --> 00:17:03,040
different cultures can get along and

413
00:17:06,470 --> 00:17:04,959

work together to produce something as

414

00:17:09,510 --> 00:17:06,480

wonderful as the international space

415

00:17:09,520 --> 00:17:17,990

thank you

416

00:17:22,949 --> 00:17:20,710

hi my name is justin my question is do

417

00:17:25,510 --> 00:17:22,959

the sun's solar flares affect the people

418

00:17:26,549 --> 00:17:25,520

and vehicles in space if so how are they

419

00:17:29,190 --> 00:17:26,559

protected

420

00:17:31,510 --> 00:17:29,200

ah yes so we have a separate group of

421

00:17:33,510 --> 00:17:31,520

people that are watching for these solar

422

00:17:36,470 --> 00:17:33,520

flares and you know these are huge

423

00:17:38,630 --> 00:17:36,480

bursts of energy and sometimes um they

424

00:17:41,110 --> 00:17:38,640

can have as you've maybe have seen in

425

00:17:44,070 --> 00:17:41,120

the news and you know impacts on cell

426

00:17:45,909 --> 00:17:44,080

phone coverage they can have impacts on

427

00:17:48,870 --> 00:17:45,919

um you know different

428

00:17:51,029 --> 00:17:48,880

communications of uh between a satellite

429

00:17:53,750 --> 00:17:51,039

and the space station so we like to keep

430

00:17:55,510 --> 00:17:53,760

aware of those um so that it's not

431

00:17:57,750 --> 00:17:55,520

unexpected when it happens but we do

432

00:18:00,150 --> 00:17:57,760

have radiation shielding

433

00:18:01,909 --> 00:18:00,160

across a majority of the international

434

00:18:09,590 --> 00:18:01,919

space station that is able to protect

435

00:18:14,470 --> 00:18:12,150

hi my name is elizabeth and my question

436

00:18:16,390 --> 00:18:14,480

is when nasa returns to the moon what

437

00:18:19,029 --> 00:18:16,400

type of research will be done and how

438

00:18:22,150 --> 00:18:19,039

would we benefit it and when will nasa

439

00:18:23,990 --> 00:18:22,160

send astronauts to the moon again oh

440

00:18:26,150 --> 00:18:24,000

well you know i i would be happy for us

441

00:18:28,390 --> 00:18:26,160

to go to the moon as well

442

00:18:30,870 --> 00:18:28,400

currently right now we have no plans to

443

00:18:33,669 --> 00:18:30,880

do so so what we're doing is focusing

444

00:18:36,950 --> 00:18:33,679

our efforts on using the international

445

00:18:37,830 --> 00:18:36,960

space station to test out technologies

446

00:18:41,270 --> 00:18:37,840

and

447

00:18:43,190 --> 00:18:41,280

communication practices that we can use

448

00:18:51,430 --> 00:18:43,200

whenever the decision is made to go to

449

00:18:55,669 --> 00:18:53,909

hello my name is adam my question is are

450

00:18:56,390 --> 00:18:55,679

you aware of any changes in height due

451
00:19:01,190 --> 00:18:56,400
to

452
00:19:03,029 --> 00:19:01,200
ah excellent question yes so when you're

453
00:19:06,070 --> 00:19:03,039
on earth you with the benefits of

454
00:19:07,669 --> 00:19:06,080
gravity you your spine gets compressed

455
00:19:10,070 --> 00:19:07,679
and we have found that when the crew

456
00:19:12,870 --> 00:19:10,080
members get up in the space their spine

457
00:19:14,789 --> 00:19:12,880
elongates a little bit maybe

458
00:19:17,350 --> 00:19:14,799
up to an inch in some cases it's about

459
00:19:18,789 --> 00:19:17,360
an inch um so we actually plan for that

460
00:19:20,950 --> 00:19:18,799
because you know they do get fitted for

461
00:19:22,789 --> 00:19:20,960
their spacesuits and you wouldn't want

462
00:19:24,150 --> 00:19:22,799
to be you know fitted for a spacesuit

463
00:19:25,750 --> 00:19:24,160

and then you go up and all of a sudden

464

00:19:27,750 --> 00:19:25,760

now you're bonking your top of your head

465

00:19:30,470 --> 00:19:27,760

at your space helmet so we make sure we

466

00:19:32,390 --> 00:19:30,480

we allow for that uh that growth and

467

00:19:34,549 --> 00:19:32,400

then when they come back they can be

468

00:19:36,470 --> 00:19:34,559

tall for like the first day or so and it

469

00:19:37,669 --> 00:19:36,480

eventually settles out it actually makes

470

00:19:38,950 --> 00:19:37,679

your lower back kind of hurt a little

471

00:19:41,029 --> 00:19:38,960

bit sometimes because the way their

472

00:19:42,789 --> 00:19:41,039

spine is stretching so it's not exactly

473

00:19:46,710 --> 00:19:42,799

i mean i would love to be taller but you

474

00:19:46,720 --> 00:19:52,390

thank you

475

00:19:57,430 --> 00:19:54,630

hello my name is kevin and my question

476
00:20:00,470 --> 00:19:57,440
is what is the longest a human has lived

477
00:20:03,549 --> 00:20:00,480
in space aha the longest a human has

478
00:20:06,710 --> 00:20:03,559
lived in space it is about

479
00:20:09,990 --> 00:20:06,720
430 days we just looked this up before

480
00:20:12,149 --> 00:20:10,000
we came here so it was 430 days and it

481
00:20:15,190 --> 00:20:12,159
was uh one of the russian cosmonauts

482
00:20:17,110 --> 00:20:15,200
that flew on board the mir space station

483
00:20:19,270 --> 00:20:17,120
for the international space station we

484
00:20:21,270 --> 00:20:19,280
tried to limit the stay till about six

485
00:20:22,950 --> 00:20:21,280
months but there was one mission that i

486
00:20:26,149 --> 00:20:22,960
was actually the lead flight director

487
00:20:29,830 --> 00:20:26,159
for where michael lopez alegria

488
00:20:32,789 --> 00:20:29,840

had to stay for 201 days

489

00:20:32,799 --> 00:20:38,390

thank you

490

00:20:42,710 --> 00:20:40,710

hi my name is adam and my question is do

491

00:20:46,070 --> 00:20:42,720

you believe in extraterrestrial life and

492

00:20:51,590 --> 00:20:49,830

this is an interesting question

493

00:20:53,029 --> 00:20:51,600

you know

494

00:20:57,669 --> 00:20:53,039

maybe

495

00:20:59,830 --> 00:20:57,679

um surely as large as the universe is

496

00:21:02,149 --> 00:20:59,840

we're not the only ones but i don't have

497

00:21:04,950 --> 00:21:02,159

any direct evidence of any of that i

498

00:21:10,630 --> 00:21:04,960

don't know any secrets

499

00:21:14,310 --> 00:21:12,470

hi my name is carlos jimenez and my

500

00:21:17,110 --> 00:21:14,320

question is is there any plans for the

501
00:21:19,190 --> 00:21:17,120
planet mars in the next 20 years

502
00:21:21,029 --> 00:21:19,200
yeah right now nasa doesn't have any

503
00:21:23,510 --> 00:21:21,039
plans i've heard of some other plans

504
00:21:25,350 --> 00:21:23,520
outside of nasa of people looking at

505
00:21:26,950 --> 00:21:25,360
going to mars

506
00:21:28,789 --> 00:21:26,960
but again it's the same thing we're

507
00:21:31,669 --> 00:21:28,799
doing for the moon the international

508
00:21:34,149 --> 00:21:31,679
space station is a great test bed

509
00:21:35,909 --> 00:21:34,159
to be able to be ready with all of the

510
00:21:37,830 --> 00:21:35,919
appropriate systems and all the

511
00:21:38,789 --> 00:21:37,840
appropriate lessons learned

512
00:21:39,750 --> 00:21:38,799
if

513
00:21:44,070 --> 00:21:39,760

our

514

00:21:53,750 --> 00:21:44,080

the decision is made to go to mars

515

00:21:58,950 --> 00:21:56,390

hi my name is jorge and my question is

516

00:22:01,350 --> 00:21:58,960

what role would mission control play in

517

00:22:03,590 --> 00:22:01,360

a mission to mars ah okay

518

00:22:05,750 --> 00:22:03,600

so going to mars would be different with

519

00:22:07,350 --> 00:22:05,760

respect to communications right now we

520

00:22:10,149 --> 00:22:07,360

can call the crew

521

00:22:12,390 --> 00:22:10,159

at pretty much any time any day we have

522

00:22:14,149 --> 00:22:12,400

great communications coverage

523

00:22:15,830 --> 00:22:14,159

and that's because they are you know

524

00:22:17,750 --> 00:22:15,840

right above us

525

00:22:19,110 --> 00:22:17,760

but when you go to mars

526

00:22:21,029 --> 00:22:19,120

we won't always have a direct

527

00:22:23,510 --> 00:22:21,039

communication link to them so they need

528

00:22:25,750 --> 00:22:23,520

to be as autonomous as we can possibly

529

00:22:29,750 --> 00:22:25,760

make them and we need to be here to kind

530

00:22:31,990 --> 00:22:29,760

of support only for things that um are

531

00:22:35,110 --> 00:22:32,000

are operating out of

532

00:22:37,190 --> 00:22:35,120

the nominal plan or um

533

00:22:38,710 --> 00:22:37,200

or have failed in ways differently than

534

00:22:40,950 --> 00:22:38,720

we had anticipated because we will

535

00:22:42,789 --> 00:22:40,960

provide them with procedures to keep the

536

00:22:44,630 --> 00:22:42,799

systems running and then we'll provide

537

00:22:46,470 --> 00:22:44,640

them with another set of procedures in

538

00:22:48,950 --> 00:22:46,480

case this fails or that fails but there

539

00:22:50,470 --> 00:22:48,960

could be things that we didn't think of

540

00:22:52,950 --> 00:22:50,480

so we're looking at different

541

00:22:54,390 --> 00:22:52,960

communications

542

00:22:56,710 --> 00:22:54,400

links that we can have with them either

543

00:22:58,710 --> 00:22:56,720

by voice or a text message that they can

544

00:23:00,549 --> 00:22:58,720

send that might get the information back

545

00:23:03,270 --> 00:23:00,559

and forth quicker but ultimately we will

546

00:23:05,909 --> 00:23:03,280

be they'll be pretty much primary and we

547

00:23:07,510 --> 00:23:05,919

will be here to help guide them along

548

00:23:08,630 --> 00:23:07,520

i think that's it so we want to thank

549

00:23:10,230 --> 00:23:08,640

you guys very much for your time it's

550

00:23:12,789 --> 00:23:10,240

been fun i hope you guys have a good day

