



1
00:00:06,550 --> 00:00:04,390
hi welcome to mission control houston

2
00:00:09,509 --> 00:00:06,560
i'm kelly humphries and with me today is

3
00:00:12,150 --> 00:00:09,519
sandy fletcher she's the lead spacewalk

4
00:00:13,749 --> 00:00:12,160
systems expert for expedition 34 and

5
00:00:16,230 --> 00:00:13,759
that's the international space station

6
00:00:18,070 --> 00:00:16,240
crew that's on orbit right now and we're

7
00:00:20,070 --> 00:00:18,080
really happy to be joining the students

8
00:00:29,029 --> 00:00:20,080
at north town elementary in columbus

9
00:00:29,039 --> 00:00:33,110
what is it like to live in space

10
00:00:36,870 --> 00:00:35,110
well i'm actually a flight controller

11
00:00:40,790 --> 00:00:36,880
and trainer so i get to talk to the

12
00:00:42,549 --> 00:00:40,800
astronauts and what they tell me is

13
00:00:44,229 --> 00:00:42,559

it's a lot of fun because they get to

14

00:00:46,630 --> 00:00:44,239

float around the space station and

15

00:00:47,910 --> 00:00:46,640

pretend to fly like superman

16

00:00:50,950 --> 00:00:47,920

and they also get to play with their

17

00:00:52,389 --> 00:00:50,960

food which is not encouraged when you're

18

00:00:54,069 --> 00:00:52,399

on the ground but it's okay when you're

19

00:00:55,830 --> 00:00:54,079

an astronaut on board the international

20

00:00:58,150 --> 00:00:55,840

space station

21

00:01:00,549 --> 00:00:58,160

but they do a lot of experiments and

22

00:01:01,430 --> 00:01:00,559

they also have to do exercise two hours

23

00:01:03,430 --> 00:01:01,440

a day

24

00:01:05,270 --> 00:01:03,440

to make sure that their bones and their

25

00:01:06,870 --> 00:01:05,280

muscle mass is

26
00:01:15,670 --> 00:01:06,880
is still strong when they come back to

27
00:01:20,710 --> 00:01:18,789
what is to live in space

28
00:01:22,550 --> 00:01:20,720
um are astronauts still going into space

29
00:01:25,109 --> 00:01:22,560
is her question

30
00:01:27,190 --> 00:01:25,119
oh yes they certainly are

31
00:01:29,830 --> 00:01:27,200
some people believe that because the

32
00:01:31,830 --> 00:01:29,840
space shuttle system was retired last

33
00:01:33,350 --> 00:01:31,840
year that we aren't flying astronauts

34
00:01:35,749 --> 00:01:33,360
anymore

35
00:01:37,990 --> 00:01:35,759
but we actually have two nasa astronauts

36
00:01:39,429 --> 00:01:38,000
on board right now that's kevin ford and

37
00:01:41,830 --> 00:01:39,439
tom marshburn

38
00:01:43,590 --> 00:01:41,840

and canadian astronaut chris hadfield

39

00:01:45,990 --> 00:01:43,600

who will be the commander of the

40

00:01:46,789 --> 00:01:46,000

international space station

41

00:01:51,830 --> 00:01:46,799

in

42

00:01:53,830 --> 00:01:51,840

three russian crew members on board

43

00:01:56,389 --> 00:01:53,840

and we've had people on board space

44

00:01:58,870 --> 00:01:56,399

station for about 11 years now

45

00:02:03,030 --> 00:01:58,880

continuously on orbit which is quite an

46

00:02:15,430 --> 00:02:11,589

how can i join the space program

47

00:02:18,150 --> 00:02:15,440

mute

48

00:02:20,390 --> 00:02:18,160

so well there's quite a number of

49

00:02:22,150 --> 00:02:20,400

different ways actually

50

00:02:25,030 --> 00:02:22,160

the civil servant jobs and astronauts

51
00:02:27,110 --> 00:02:25,040
jobs are actually posted online

52
00:02:28,710 --> 00:02:27,120
through the various websites

53
00:02:30,790 --> 00:02:28,720
i work for a small

54
00:02:33,830 --> 00:02:30,800
company actually i don't work for nasa

55
00:02:35,110 --> 00:02:33,840
directly and they post their jobs online

56
00:02:36,949 --> 00:02:35,120
as well

57
00:02:42,790 --> 00:02:36,959
so there are a lot of different avenues

58
00:02:47,589 --> 00:02:44,470
what does it take to be a mission

59
00:02:49,830 --> 00:02:47,599
control specialist

60
00:02:52,229 --> 00:02:49,840
well i'm fairly unique in that i

61
00:02:53,910 --> 00:02:52,239
actually have a physics background most

62
00:02:56,309 --> 00:02:53,920
of the colleagues that are flight

63
00:02:58,229 --> 00:02:56,319

controllers and trainers along with me

64

00:02:59,990 --> 00:02:58,239

have various engineering backgrounds

65

00:03:02,550 --> 00:03:00,000

whether that's

66

00:03:04,710 --> 00:03:02,560

aeronautical engineering

67

00:03:08,550 --> 00:03:04,720

or mechanical engineering

68

00:03:10,390 --> 00:03:08,560

but nasa also employs people who are of

69

00:03:12,229 --> 00:03:10,400

different backgrounds as well there's

70

00:03:14,790 --> 00:03:12,239

actually a legal department so we have

71

00:03:16,869 --> 00:03:14,800

lawyers we have flight surgeons who make

72

00:03:19,430 --> 00:03:16,879

sure the astronauts stay healthy

73

00:03:21,990 --> 00:03:19,440

and so those are medical doctors we have

74

00:03:23,910 --> 00:03:22,000

people who are professional scuba divers

75

00:03:25,910 --> 00:03:23,920

they work out at our neutral buoyancy

76
00:03:28,710 --> 00:03:25,920
lab for when our crew members practice

77
00:03:30,149 --> 00:03:28,720
their space walks we have scuba divers

78
00:03:32,070 --> 00:03:30,159
in the pool with them to make sure

79
00:03:34,070 --> 00:03:32,080
they're safe and you also have people

80
00:03:35,589 --> 00:03:34,080
who like kelly humphries here who's

81
00:03:38,390 --> 00:03:35,599
actually a journalist

82
00:03:40,390 --> 00:03:38,400
so you might not think that

83
00:03:42,149 --> 00:03:40,400
you know journalists would necessarily

84
00:03:43,750 --> 00:03:42,159
be employed by the space program but

85
00:03:48,550 --> 00:03:43,760
there are very many different

86
00:03:53,670 --> 00:03:50,229
what should i focus on in school in

87
00:03:56,229 --> 00:03:55,429
that's a really good question and i

88
00:03:58,390 --> 00:03:56,239

think

89

00:04:00,149 --> 00:03:58,400

whatever you focus on

90

00:04:02,309 --> 00:04:00,159

the best thing to do is to make sure

91

00:04:03,910 --> 00:04:02,319

that you really really love it

92

00:04:06,070 --> 00:04:03,920

if you love it then you're going to work

93

00:04:06,869 --> 00:04:06,080

hard at it and you'll do well

94

00:04:09,030 --> 00:04:06,879

so

95

00:04:11,110 --> 00:04:09,040

while i happen to choose physics and

96

00:04:13,190 --> 00:04:11,120

i'll be honest my interest in physics

97

00:04:15,509 --> 00:04:13,200

was peaked when i noticed that the

98

00:04:16,789 --> 00:04:15,519

astronauts that nasa was hiring

99

00:04:17,590 --> 00:04:16,799

there were a bunch of physicists in

100

00:04:20,550 --> 00:04:17,600

there

101

00:04:22,069 --> 00:04:20,560

they also hire military pilots

102

00:04:23,350 --> 00:04:22,079

so i would say

103

00:04:25,510 --> 00:04:23,360

find something that you really love

104

00:04:26,390 --> 00:04:25,520

doing and then focus on doing that very

105

00:04:27,990 --> 00:04:26,400

well

106

00:04:29,670 --> 00:04:28,000

but also

107

00:04:32,150 --> 00:04:29,680

you know take good care of yourself

108

00:04:34,790 --> 00:04:32,160

physically and

109

00:04:37,110 --> 00:04:34,800

be interested in other people one of the

110

00:04:38,629 --> 00:04:37,120

surprising aspects of this job is

111

00:04:41,110 --> 00:04:38,639

working with other people and if you

112

00:04:42,710 --> 00:04:41,120

can't work with other people very well

113

00:04:45,110 --> 00:04:42,720

you're going to have a hard time in life

114

00:04:47,030 --> 00:04:45,120

so i've been very fortunate that i've

115

00:04:48,870 --> 00:04:47,040

had very good co-workers and

116

00:04:51,350 --> 00:04:48,880

we actually have a lot of fun

117

00:04:53,189 --> 00:04:51,360

well you know and even not just studies

118

00:04:55,030 --> 00:04:53,199

but but teamwork is something you can

119

00:04:57,590 --> 00:04:55,040

learn doing a lot of extracurricular

120

00:04:59,030 --> 00:04:57,600

activities and doing sports and things

121

00:05:01,749 --> 00:04:59,040

like that and

122

00:05:03,909 --> 00:05:01,759

this whole center here works on teamwork

123

00:05:06,629 --> 00:05:03,919

as does the international partnership

124

00:05:08,629 --> 00:05:06,639

that makes the space station work so it

125

00:05:11,270 --> 00:05:08,639

really helps to get that kind of

126

00:05:13,909 --> 00:05:11,280

a background and but the majority of

127

00:05:15,909 --> 00:05:13,919

folks here are in the science technology

128

00:05:19,110 --> 00:05:15,919

engineering and math fields

129

00:05:20,870 --> 00:05:19,120

from what they study but as sandy says

130

00:05:22,070 --> 00:05:20,880

do something that you really love doing

131

00:05:23,830 --> 00:05:22,080

and that means that you're going to

132

00:05:26,310 --> 00:05:23,840

ensure you do it well and that's going

133

00:05:28,150 --> 00:05:26,320

to put you in the best position to get a

134

00:05:33,270 --> 00:05:28,160

job at nasa or for that matter anywhere

135

00:05:33,280 --> 00:05:37,189

why did you choose to work at nasa

136

00:05:41,749 --> 00:05:40,150

well i grew up in rural new england um

137

00:05:44,710 --> 00:05:41,759

which we didn't have a lot of exposure

138

00:05:46,310 --> 00:05:44,720

to the space program at that point

139

00:05:48,390 --> 00:05:46,320

this was actually

140

00:05:50,070 --> 00:05:48,400

skylab was really the the first thing i

141

00:05:51,670 --> 00:05:50,080

really remember on

142

00:05:53,270 --> 00:05:51,680

and

143

00:05:55,110 --> 00:05:53,280

but what really got me interested in

144

00:05:55,990 --> 00:05:55,120

space was actually a movie called star

145

00:05:58,710 --> 00:05:56,000

wars

146

00:06:01,029 --> 00:05:58,720

i was about nine years old and i went to

147

00:06:02,710 --> 00:06:01,039

see star wars and i'll be honest i went

148

00:06:04,230 --> 00:06:02,720

to see it because my older sister wanted

149

00:06:06,070 --> 00:06:04,240

to go see it

150

00:06:08,870 --> 00:06:06,080

but i just fell in love with the whole

151
00:06:10,790 --> 00:06:08,880
concept of living and working in space

152
00:06:12,309 --> 00:06:10,800
and

153
00:06:13,990 --> 00:06:12,319
you know i'm one of those very lucky

154
00:06:16,469 --> 00:06:14,000
kids who wanted to be involved with the

155
00:06:17,909 --> 00:06:16,479
space program and uh

156
00:06:20,390 --> 00:06:17,919
ended up actually being involved with

157
00:06:22,790 --> 00:06:20,400
the space program so it can happen

158
00:06:25,350 --> 00:06:22,800
and i ended up getting to stay home from

159
00:06:27,670 --> 00:06:25,360
kindergarten to watch alan shepard

160
00:06:30,070 --> 00:06:27,680
launch my mom was a big space fan way

161
00:06:32,230 --> 00:06:30,080
back i'm a little older than sandy

162
00:06:33,830 --> 00:06:32,240
when we first started flying humans in

163
00:06:36,230 --> 00:06:33,840

space and alan shepard was the first

164

00:06:38,070 --> 00:06:36,240

american to get launched into space

165

00:06:39,590 --> 00:06:38,080

and i got to stay here from kindergarten

166

00:06:45,909 --> 00:06:39,600

to watch that and i've been a space fan

167

00:06:51,749 --> 00:06:47,909

what fun and interesting parts are there

168

00:06:57,110 --> 00:06:54,150

i'll be honest

169

00:06:59,029 --> 00:06:57,120

it is really cool to be involved with

170

00:06:59,990 --> 00:06:59,039

the space program

171

00:07:02,629 --> 00:07:00,000

people

172

00:07:04,469 --> 00:07:02,639

know what you're what you talk about

173

00:07:06,469 --> 00:07:04,479

when you say you work at nasa or you

174

00:07:08,309 --> 00:07:06,479

work on the space program most people

175

00:07:11,749 --> 00:07:08,319

have a general idea what that means and

176

00:07:13,510 --> 00:07:11,759

they're very enthusiastic about it

177

00:07:16,230 --> 00:07:13,520

kelly had mentioned earlier that it's a

178

00:07:17,990 --> 00:07:16,240

lot of teamwork and i really enjoy

179

00:07:20,710 --> 00:07:18,000

working not only with the astronauts and

180

00:07:22,550 --> 00:07:20,720

training them but i also work

181

00:07:24,469 --> 00:07:22,560

really well with the colleagues

182

00:07:27,270 --> 00:07:24,479

we all have the same goal you know we're

183

00:07:29,110 --> 00:07:27,280

from all over the united states and

184

00:07:31,110 --> 00:07:29,120

actually from different countries

185

00:07:33,270 --> 00:07:31,120

but we all share the same goal that's

186

00:07:35,510 --> 00:07:33,280

the space program is really important

187

00:07:37,350 --> 00:07:35,520

exploring other worlds is something

188

00:07:39,110 --> 00:07:37,360

that's exciting to us

189

00:07:41,029 --> 00:07:39,120

and

190

00:07:43,270 --> 00:07:41,039

it's an amazing experience to be part of

191

00:07:45,189 --> 00:07:43,280

a large team that all believes the same

192

00:07:46,790 --> 00:07:45,199

thing

193

00:07:49,430 --> 00:07:46,800

well and we got to admit it's pretty

194

00:07:51,990 --> 00:07:49,440

cool working in mission control uh where

195

00:07:53,990 --> 00:07:52,000

everything comes together

196

00:07:56,150 --> 00:07:54,000

and it's also really neat to be able to

197

00:07:57,189 --> 00:07:56,160

go out and see launches and things like

198

00:07:59,670 --> 00:07:57,199

that

199

00:08:02,070 --> 00:07:59,680

and to get out with our colleagues at

200

00:08:04,309 --> 00:08:02,080

the laboratories that help develop these

201
00:08:06,790 --> 00:08:04,319
systems and technology that we do you

202
00:08:09,110 --> 00:08:06,800
know we were talking earlier about how

203
00:08:11,430 --> 00:08:09,120
astronauts get to the space station and

204
00:08:13,189 --> 00:08:11,440
and right now we're all the americans uh

205
00:08:15,430 --> 00:08:13,199
and everybody for that matter is flying

206
00:08:17,189 --> 00:08:15,440
up on russian soyuz spacecraft and it's

207
00:08:19,270 --> 00:08:17,199
kind of interesting because we used to

208
00:08:21,430 --> 00:08:19,280
be in a cold war with uh what was then

209
00:08:23,670 --> 00:08:21,440
the soviet union and now it's the

210
00:08:25,830 --> 00:08:23,680
russian federal space agency that we

211
00:08:27,830 --> 00:08:25,840
work with and so that's how we get folks

212
00:08:30,230 --> 00:08:27,840
up and down to space right now but nasa

213
00:08:32,469 --> 00:08:30,240

also is working on new spacecraft we're

214

00:08:34,149 --> 00:08:32,479

working on the orion spacecraft

215

00:08:36,149 --> 00:08:34,159

which is designed to take us farther

216

00:08:39,110 --> 00:08:36,159

than we've ever gone in space way past

217

00:08:40,550 --> 00:08:39,120

the moon out to asteroids and mars and

218

00:08:42,070 --> 00:08:40,560

elsewhere and

219

00:08:43,750 --> 00:08:42,080

people in marshall space flight center

220

00:08:46,070 --> 00:08:43,760

in huntsville alabama are developing a

221

00:08:46,949 --> 00:08:46,080

new space launch system rocket that'll

222

00:08:49,350 --> 00:08:46,959

carry

223

00:08:50,389 --> 00:08:49,360

tons and tons of cargo into space at

224

00:08:52,310 --> 00:08:50,399

once

225

00:08:53,910 --> 00:08:52,320

and working together here with johnson

226
00:08:56,470 --> 00:08:53,920
space center with the folks developing

227
00:08:58,389 --> 00:08:56,480
the orion capsule so there's all kinds

228
00:08:59,990 --> 00:08:58,399
of things coming up in addition to what

229
00:09:02,310 --> 00:09:00,000
we're doing now on the international

230
00:09:05,190 --> 00:09:02,320
space station but the space station is

231
00:09:06,870 --> 00:09:05,200
kind of like the the uh the learning

232
00:09:09,990 --> 00:09:06,880
place where we are learning what it

233
00:09:11,829 --> 00:09:10,000
takes to live for a long time

234
00:09:14,710 --> 00:09:11,839
in the microgravity environment it has

235
00:09:17,350 --> 00:09:14,720
all kinds of effects on our bodies and

236
00:09:19,350 --> 00:09:17,360
on how physics work on how different

237
00:09:20,470 --> 00:09:19,360
mechanisms work and so it's really

238
00:09:22,630 --> 00:09:20,480

important for us to learn what we're

239

00:09:25,350 --> 00:09:22,640

doing now but the real goal is to go

240

00:09:26,949 --> 00:09:25,360

even farther out there so that we can

241

00:09:30,470 --> 00:09:26,959

help spread humanity throughout the

242

00:09:33,910 --> 00:09:32,230

and that's actually where you guys come

243

00:09:35,430 --> 00:09:33,920

in because

244

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

you know we're working on the space

245

00:09:39,430 --> 00:09:37,360

program right now

246

00:09:41,030 --> 00:09:39,440

we were handed off this space program by

247

00:09:43,590 --> 00:09:41,040

people who worked

248

00:09:46,470 --> 00:09:43,600

for mercury through gemini

249

00:09:48,150 --> 00:09:46,480

apollo and all these other programs that

250

00:09:50,470 --> 00:09:48,160

built the foundations of what we do not

251
00:09:52,790 --> 00:09:50,480
only in mission control but all of space

252
00:09:54,870 --> 00:09:52,800
exploration and so i feel like our

253
00:09:56,790 --> 00:09:54,880
generation right now is caretaking it

254
00:09:58,790 --> 00:09:56,800
for your generation

255
00:10:01,030 --> 00:09:58,800
and it's very important for you guys to

256
00:10:02,710 --> 00:10:01,040
be excited about space exploration too

257
00:10:04,630 --> 00:10:02,720
because someday you're going to be

258
00:10:06,550 --> 00:10:04,640
sitting up here and trying to encourage

259
00:10:09,190 --> 00:10:06,560
the next generation this is a very

260
00:10:12,069 --> 00:10:09,200
long-term project it's not going to be

261
00:10:14,310 --> 00:10:12,079
done by the time i retire you're still

262
00:10:16,949 --> 00:10:14,320
going to have plenty of opportunities

263
00:10:18,870 --> 00:10:16,959

and we know that ohio has a really rich

264

00:10:22,389 --> 00:10:18,880

space history with people like john

265

00:10:24,790 --> 00:10:22,399

glenn who made historic contributions to

266

00:10:27,269 --> 00:10:24,800

our space exploration effort and we're

267

00:10:29,590 --> 00:10:27,279

looking for you guys to be the next john

268

00:10:31,509 --> 00:10:29,600

glenn or the next gene kranz sitting

269

00:10:36,790 --> 00:10:31,519

here in mission control guiding the

270

00:10:36,800 --> 00:10:40,069

thank you that was our questions

271

00:10:43,350 --> 00:10:41,750

well thank you guys for being with us

272

00:10:45,509 --> 00:10:43,360

today we hope you learn a lot about

273

00:10:47,110 --> 00:10:45,519

space exploration your studies and that

274

00:10:49,590 --> 00:10:47,120

you go on to do great things whatever

275

00:10:51,269 --> 00:10:49,600

you choose to do

