
EXIT

1
00:00:13,110 --> 00:00:04,070
station houston

2
00:00:21,429 --> 00:00:14,230
houston station we're ready for the

3
00:00:25,429 --> 00:00:23,429
low intermediate school this is mission

4
00:00:29,349 --> 00:00:25,439
control houston please call station for

5
00:00:34,790 --> 00:00:32,630
station this is ac low junior at ac low

6
00:00:52,150 --> 00:00:34,800
general intermediate school how do you

7
00:00:52,160 --> 00:01:05,189
um

8
00:01:10,070 --> 00:01:06,870
station

9
00:01:29,109 --> 00:01:10,080
this is lisa elo jr at asa elo junior

10
00:01:54,550 --> 00:01:31,270
absolutely we're standing by whenever

11
00:02:00,550 --> 00:01:58,230
station this is ac low junior at asa elo

12
00:02:04,389 --> 00:02:00,560
junior intermediate school how do you

13
00:02:19,350 --> 00:02:05,990

we've got you loud and clear welcome

14
00:02:23,270 --> 00:02:22,070
commander dan this is ty this is tyler

15
00:02:24,630 --> 00:02:23,280
smithy

16
00:02:26,790 --> 00:02:24,640
what is your mission on the

17
00:02:28,309 --> 00:02:26,800
international space station and what

18
00:02:35,350 --> 00:02:28,319
activities

19
00:02:40,470 --> 00:02:38,070
hi tyler um actually our missions are

20
00:02:42,550 --> 00:02:40,480
very many on board space station um our

21
00:02:44,470 --> 00:02:42,560
primary mission right now is conducting

22
00:02:45,990 --> 00:02:44,480
science and for the time that we'll

23
00:02:48,070 --> 00:02:46,000
spend aboard space station which is

24
00:02:50,229 --> 00:02:48,080
about six months uh we've got a little

25
00:02:52,550 --> 00:02:50,239
over a hundred separate scientific

26
00:02:54,470 --> 00:02:52,560
investigations that we're working on so

27
00:02:55,990 --> 00:02:54,480
that's the big piece of it another part

28
00:02:58,070 --> 00:02:56,000
of our mission is just keeping space

29
00:02:59,430 --> 00:02:58,080
station working and functioning

30
00:03:03,030 --> 00:02:59,440
we have to be

31
00:03:04,630 --> 00:03:03,040
technicians

32
00:03:06,070 --> 00:03:04,640
we have to be able to do all the

33
00:03:08,550 --> 00:03:06,080
ordinary things that you'd have to do to

34
00:03:11,190 --> 00:03:08,560
maintain your house if if things break

35
00:03:12,630 --> 00:03:11,200
for example and we do all those things

36
00:03:13,910 --> 00:03:12,640
in addition to that we take care of

37
00:03:16,309 --> 00:03:13,920
ourselves and

38
00:03:18,630 --> 00:03:16,319

occasionally um we'll have visiting

39
00:03:20,869 --> 00:03:18,640
vehicles that'll bring up cargo

40
00:03:22,630 --> 00:03:20,879
occasionally we'll do robotic operations

41
00:03:24,229 --> 00:03:22,640
and sometimes we'll catch those visiting

42
00:03:26,229 --> 00:03:24,239
vehicles we expect to do that here in a

43
00:03:27,750 --> 00:03:26,239
couple of months and sometimes we'll go

44
00:03:32,149 --> 00:03:27,760
outside and do spacewalks but the

45
00:03:37,750 --> 00:03:35,190
hi mr don this is dijon taylor how do

46
00:03:47,270 --> 00:03:37,760
you deal with minor and major injuries

47
00:03:51,589 --> 00:03:49,589
uh so far we haven't had any major

48
00:03:54,229 --> 00:03:51,599
injuries in space so so we haven't had

49
00:03:55,750 --> 00:03:54,239
to deal with that minor injuries like uh

50
00:03:57,429 --> 00:03:55,760
you know if you could put a band-aid on

51
00:04:00,309 --> 00:03:57,439
it you just put a band-aid on just like

52
00:04:01,350 --> 00:04:00,319
you do on the ground

53
00:04:05,350 --> 00:04:01,360
we do

54
00:04:08,630 --> 00:04:05,360
happen if we

55
00:04:11,589 --> 00:04:08,640
were to have a major injury and we've

56
00:04:14,470 --> 00:04:11,599
got medical equipment up here sort of

57
00:04:15,589 --> 00:04:14,480
like what an emergency medical person

58
00:04:19,349 --> 00:04:15,599
would have

59
00:04:21,830 --> 00:04:19,359
that we could do any number of

60
00:04:24,310 --> 00:04:21,840
medical procedures

61
00:04:26,710 --> 00:04:24,320
with help from doctors on the ground

62
00:04:33,510 --> 00:04:26,720
that we have in communication with so we

63
00:04:37,909 --> 00:04:35,909

commander dan this is lauren knight how

64
00:04:39,590 --> 00:04:37,919
do you keep in contact with nasa and

65
00:04:45,270 --> 00:04:39,600
family members and have you ever lost

66
00:04:48,310 --> 00:04:46,790
okay great question it's really

67
00:04:50,230 --> 00:04:48,320
important for us to be able to talk to

68
00:04:52,550 --> 00:04:50,240
the people that that help us fly the

69
00:04:55,510 --> 00:04:52,560
international space station so we've got

70
00:04:57,430 --> 00:04:55,520
controllers that work at nasa in uh in

71
00:04:59,270 --> 00:04:57,440
the united states but we've got uh

72
00:05:00,629 --> 00:04:59,280
controllers that also work all over the

73
00:05:03,430 --> 00:05:00,639
world in various control centers

74
00:05:05,430 --> 00:05:03,440
including in europe including in russia

75
00:05:07,110 --> 00:05:05,440
japan and we've got other support

76
00:05:08,870 --> 00:05:07,120
centers all around including in canada

77
00:05:10,550 --> 00:05:08,880
as well and we've got great

78
00:05:13,590 --> 00:05:10,560
communications channels with them we can

79
00:05:15,270 --> 00:05:13,600
talk to them almost 95 of the time

80
00:05:17,510 --> 00:05:15,280
pretty much any time we'd like and we do

81
00:05:19,510 --> 00:05:17,520
that using satellites that are much

82
00:05:22,870 --> 00:05:19,520
higher than uh than international space

83
00:05:24,790 --> 00:05:22,880
station and we we basically ricochet our

84
00:05:26,230 --> 00:05:24,800
signal from space station to those

85
00:05:27,590 --> 00:05:26,240
satellites and then down to the ground

86
00:05:28,550 --> 00:05:27,600
and then to networks all around the

87
00:05:31,110 --> 00:05:28,560
world

88
00:05:33,350 --> 00:05:31,120

we talk to our families

89
00:05:35,430 --> 00:05:33,360
sometimes as as many times as a couple

90
00:05:36,310 --> 00:05:35,440
times a day and we do it much like you

91
00:05:38,150 --> 00:05:36,320
would

92
00:05:40,469 --> 00:05:38,160
at home almost like a cell phone but we

93
00:05:42,310 --> 00:05:40,479
do that across a computer screen

94
00:05:43,830 --> 00:05:42,320
basically and that's how we do that but

95
00:05:47,510 --> 00:05:43,840
we've got really good communication

96
00:05:52,150 --> 00:05:50,310
mr dunn this is diamond spencer how is

97
00:05:54,629 --> 00:05:52,160
the international space station

98
00:06:01,670 --> 00:05:54,639
protected from space debris and can you

99
00:06:07,830 --> 00:06:04,469
space station has what we call micro

100
00:06:09,909 --> 00:06:07,840
meteorite shielding on it and this is

101
00:06:13,510 --> 00:06:09,919
shielding that will protect it from

102
00:06:15,830 --> 00:06:13,520
something maybe as big as a p

103
00:06:17,830 --> 00:06:15,840
but if it gets any bigger than that we

104
00:06:19,749 --> 00:06:17,840
don't have any kind of shielding capable

105
00:06:21,670 --> 00:06:19,759
of protecting space station from larger

106
00:06:24,309 --> 00:06:21,680
objects like that so

107
00:06:28,309 --> 00:06:24,319
so small stuff we're okay

108
00:06:34,070 --> 00:06:28,319
the big stuff will uh we just are taking

109
00:06:38,629 --> 00:06:36,150
commander dan this is melanie

110
00:06:40,309 --> 00:06:38,639
castellanos what is your most and least

111
00:06:48,070 --> 00:06:40,319
favorite part of the

112
00:06:51,510 --> 00:06:49,670
probably my most favorite thing about

113
00:06:53,270 --> 00:06:51,520

being on the international space station

114
00:06:55,670 --> 00:06:53,280
is getting just getting a chance to live

115
00:06:56,950 --> 00:06:55,680
and work in space and uh and to do all

116
00:06:58,870 --> 00:06:56,960
the different things that we do and

117
00:07:00,309 --> 00:06:58,880
working with a lot of really smart

118
00:07:02,550 --> 00:07:00,319
really talented people all over the

119
00:07:04,629 --> 00:07:02,560
world that help us make that possible

120
00:07:06,390 --> 00:07:04,639
and every day is different the variety

121
00:07:07,909 --> 00:07:06,400
of the things we do whether it's science

122
00:07:09,510 --> 00:07:07,919
whether it's maintaining space station

123
00:07:11,670 --> 00:07:09,520
whether it's doing

124
00:07:13,510 --> 00:07:11,680
observations of planet earth from here

125
00:07:15,830 --> 00:07:13,520
or whether it's doing space walks things

126
00:07:17,510 --> 00:07:15,840
like that all the things we do every

127
00:07:19,670 --> 00:07:17,520
single day is different every single day

128
00:07:22,070 --> 00:07:19,680
is exciting that's my most favorite

129
00:07:23,510 --> 00:07:22,080
aspect of being here probably my least

130
00:07:25,110 --> 00:07:23,520
favorite aspect is the fact that you

131
00:07:27,430 --> 00:07:25,120
have to be away from your family for as

132
00:07:29,110 --> 00:07:27,440
long as you do um but thankfully we get

133
00:07:31,270 --> 00:07:29,120
to talk to them we get to actually see

134
00:07:33,589 --> 00:07:31,280
them on a computer screen at least once

135
00:07:36,070 --> 00:07:33,599
a week in addition to talking to them

136
00:07:37,830 --> 00:07:36,080
whenever we can so you feel like you're

137
00:07:40,150 --> 00:07:37,840
a lot more connected to your family than

138
00:07:41,350 --> 00:07:40,160

you otherwise would be and you feel like

139
00:07:42,469 --> 00:07:41,360
you're a lot more connected to your

140
00:07:45,270 --> 00:07:42,479
family than

141
00:07:47,350 --> 00:07:45,280
many many um years ago than astronauts

142
00:07:48,950 --> 00:07:47,360
and cosmonauts used to be so

143
00:07:50,550 --> 00:07:48,960
that part of it helps but that's still

144
00:07:54,390 --> 00:07:50,560
the toughest part i think about being

145
00:07:59,270 --> 00:07:57,270
mr don this is alexis fukundo can you

146
00:08:05,909 --> 00:07:59,280
take personal items or electronics into

147
00:08:09,749 --> 00:08:07,749
you you can

148
00:08:12,629 --> 00:08:09,759
you can take personal items into space

149
00:08:15,110 --> 00:08:12,639
we're allowed a small bag maybe about

150
00:08:17,029 --> 00:08:15,120
the size of a grocery shopping bag of

151
00:08:18,309 --> 00:08:17,039
personal items that we could take into

152
00:08:21,110 --> 00:08:18,319
space

153
00:08:24,629 --> 00:08:21,120
and some things are prohibited we can't

154
00:08:25,350 --> 00:08:24,639
take electronic items into space

155
00:08:27,830 --> 00:08:25,360
but

156
00:08:30,070 --> 00:08:27,840
uh and and all the items that we do take

157
00:08:32,230 --> 00:08:30,080
have to go through a safety review

158
00:08:35,110 --> 00:08:32,240
for myself i took

159
00:08:38,149 --> 00:08:35,120
uh a number of of little things that i

160
00:08:39,829 --> 00:08:38,159
could use for science demonstrations and

161
00:08:42,310 --> 00:08:39,839
for example i brought some knitting

162
00:08:44,389 --> 00:08:42,320
needles with me and it's not because i

163
00:08:47,030 --> 00:08:44,399

like to knit i i don't even know how to

164
00:08:49,430 --> 00:08:47,040
knit but the knitting needles have some

165
00:08:51,430 --> 00:08:49,440
really neat uh characteristics if you

166
00:08:53,509 --> 00:08:51,440
rub them if you rub them with a piece of

167
00:08:57,110 --> 00:08:53,519
cloth you can develop a small static

168
00:09:00,470 --> 00:08:57,120
charge and you can do some uh static

169
00:09:01,829 --> 00:09:00,480
electric uh science demonstrations so so

170
00:09:06,150 --> 00:09:01,839
that's an example of something that i

171
00:09:11,030 --> 00:09:08,949
commander dan this is andrew davies did

172
00:09:13,030 --> 00:09:11,040
you always want to be an astronaut and

173
00:09:19,030 --> 00:09:13,040
what kind of training did you have to do

174
00:09:22,470 --> 00:09:21,269
yeah andrew i can't say honestly that i

175
00:09:24,310 --> 00:09:22,480
always wanted to be an astronaut and

176
00:09:26,150 --> 00:09:24,320
that's because when i was young when i

177
00:09:28,389 --> 00:09:26,160
was your age it never occurred to me

178
00:09:30,389 --> 00:09:28,399
that this was something that i could do

179
00:09:32,150 --> 00:09:30,399
and i was always interested in the space

180
00:09:33,750 --> 00:09:32,160
program and always read as much as i

181
00:09:35,670 --> 00:09:33,760
could about it ever since i was a kid

182
00:09:37,750 --> 00:09:35,680
all the way up until my adult life and

183
00:09:39,670 --> 00:09:37,760
it wasn't until i was

184
00:09:42,389 --> 00:09:39,680
a pilot and an engineer in the coast

185
00:09:45,110 --> 00:09:42,399
guard that i thought about applying to

186
00:09:47,030 --> 00:09:45,120
nasa to become an astronaut

187
00:09:48,630 --> 00:09:47,040
and the things that you do to the things

188
00:09:51,990 --> 00:09:48,640

that you learn that you train on to

189
00:09:53,750 --> 00:09:52,000
become an astronaut are are really cool

190
00:09:55,350 --> 00:09:53,760
all of us come from very different

191
00:09:57,509 --> 00:09:55,360
backgrounds we've got pilots we've got

192
00:09:59,670 --> 00:09:57,519
engineers we've got physicians we even

193
00:10:01,269 --> 00:09:59,680
have veterinarians we have teachers we

194
00:10:03,910 --> 00:10:01,279
have people from all different kinds of

195
00:10:06,150 --> 00:10:03,920
backgrounds but all of us have one

196
00:10:07,750 --> 00:10:06,160
common aspect and that is we're all

197
00:10:10,389 --> 00:10:07,760
explorers at heart

198
00:10:12,389 --> 00:10:10,399
now with that said we still all have to

199
00:10:14,630 --> 00:10:12,399
learn all the basic skills that you need

200
00:10:16,230 --> 00:10:14,640
to have to be able to do the the

201
00:10:18,870 --> 00:10:16,240
very different kind of strange sort of

202
00:10:20,949 --> 00:10:18,880
things you do on a space flight so one

203
00:10:23,269 --> 00:10:20,959
of the first things we do when we go to

204
00:10:25,350 --> 00:10:23,279
nasa is we learn how to fly airplanes we

205
00:10:27,030 --> 00:10:25,360
learn about meteorology geology

206
00:10:28,949 --> 00:10:27,040
oceanography

207
00:10:30,710 --> 00:10:28,959
we learn about physics we learn about

208
00:10:32,230 --> 00:10:30,720
astronomy we learn about a whole host of

209
00:10:33,910 --> 00:10:32,240
different things that many of us might

210
00:10:36,230 --> 00:10:33,920
have been experts in before we came to

211
00:10:39,030 --> 00:10:36,240
nasa but none of us know all those

212
00:10:40,310 --> 00:10:39,040
things so it basically gives us a good

213
00:10:41,750 --> 00:10:40,320

background in all the kind of science

214
00:10:43,269 --> 00:10:41,760
that we do onboard space station and we

215
00:10:45,350 --> 00:10:43,279
learn how to be engineers we learn how

216
00:10:47,190 --> 00:10:45,360
to be medical officers too don was

217
00:10:48,630 --> 00:10:47,200
talking about what would we do if we had

218
00:10:50,069 --> 00:10:48,640
a medical problem on station we all

219
00:10:53,110 --> 00:10:50,079
learned a little bit about how to take

220
00:10:55,269 --> 00:10:53,120
care of each other and uh we we spent a

221
00:10:57,430 --> 00:10:55,279
lot of time in a great big pool

222
00:10:59,110 --> 00:10:57,440
practicing space walks at the johnson

223
00:11:01,030 --> 00:10:59,120
space center one of my favorite places i

224
00:11:02,550 --> 00:11:01,040
think all of us love that and it's the

225
00:11:04,790 --> 00:11:02,560
one place the unique place that we can

226
00:11:06,550 --> 00:11:04,800
go and experience what it's like to be

227
00:11:08,310 --> 00:11:06,560
weightless in space and we wear

228
00:11:10,790 --> 00:11:08,320
spacesuits just like we'd wear outside a

229
00:11:16,949 --> 00:11:10,800
space station underwater and we practice

230
00:11:21,990 --> 00:11:19,829
mr don this is william jones how many

231
00:11:27,110 --> 00:11:22,000
times can astronaut go into space and

232
00:11:32,550 --> 00:11:29,829
well uh currently our missions are

233
00:11:34,470 --> 00:11:32,560
planned for about six months and maybe

234
00:11:37,509 --> 00:11:34,480
it'll be a month longer maybe it'll be a

235
00:11:39,990 --> 00:11:37,519
month shorter but six months is the the

236
00:11:42,710 --> 00:11:40,000
normal mission duration for space

237
00:11:44,470 --> 00:11:42,720
station at this point in time how many

238
00:11:47,269 --> 00:11:44,480

times can you do this

239
00:11:51,110 --> 00:11:47,279
well from a radiation point of view you

240
00:11:52,550 --> 00:11:51,120
get about 10 percent of your allowed

241
00:11:56,150 --> 00:11:52,560
radiation

242
00:11:58,389 --> 00:11:56,160
limit for each space station mission so

243
00:12:00,629 --> 00:11:58,399
this is my second mission so in concept

244
00:12:04,629 --> 00:12:00,639
i could do this eight more times

245
00:12:07,110 --> 00:12:04,639
however if you fly once every six to ten

246
00:12:08,790 --> 00:12:07,120
years uh you're gonna be

247
00:12:10,870 --> 00:12:08,800
you're gonna be close to a hundred years

248
00:12:12,470 --> 00:12:10,880
old by the time you get done flying your

249
00:12:14,949 --> 00:12:12,480
10 missions so

250
00:12:15,910 --> 00:12:14,959
so uh

251
00:12:21,030 --> 00:12:15,920
the

252
00:12:26,069 --> 00:12:21,040
typically depends on how long you have a

253
00:12:30,790 --> 00:12:28,790
commander dan this is sarah hale what

254
00:12:36,829 --> 00:12:30,800
challenges do you face when completing

255
00:12:40,629 --> 00:12:39,110
instance yeah that's another thing you

256
00:12:43,350 --> 00:12:40,639
have to do so in addition to being

257
00:12:45,190 --> 00:12:43,360
scientists engineer and spacewalker and

258
00:12:47,190 --> 00:12:45,200
and all these other things you got to be

259
00:12:49,269 --> 00:12:47,200
able to cut hair and

260
00:12:51,190 --> 00:12:49,279
i think all of us in theory might have

261
00:12:53,110 --> 00:12:51,200
practiced that before we came here but

262
00:12:54,629 --> 00:12:53,120
none of us ever did it until we actually

263
00:12:58,150 --> 00:12:54,639

got here we were faced with one of our

264
00:12:59,910 --> 00:12:58,160
crewmates who needed a haircut and so we

265
00:13:01,350 --> 00:12:59,920
basically will start we'll start cutting

266
00:13:02,629 --> 00:13:01,360
each other's hair and if we make a

267
00:13:03,910 --> 00:13:02,639
mistake the hair will get a little

268
00:13:06,470 --> 00:13:03,920
shorter and a little shorter and

269
00:13:08,949 --> 00:13:06,480
eventually it'll be relatively even

270
00:13:10,710 --> 00:13:08,959
a lot of the things that we do are just

271
00:13:12,389 --> 00:13:10,720
basic kinds of things that everybody has

272
00:13:14,870 --> 00:13:12,399
to do

273
00:13:16,470 --> 00:13:14,880
living on planet earth and cleaning

274
00:13:18,150 --> 00:13:16,480
space station for example is a very

275
00:13:20,310 --> 00:13:18,160
challenging thing if you have to clean

276
00:13:22,310 --> 00:13:20,320
your room the things that are laying

277
00:13:24,069 --> 00:13:22,320
about literally are laying on the floor

278
00:13:25,590 --> 00:13:24,079
so they're all in generally in one place

279
00:13:28,150 --> 00:13:25,600
it may look like a mess but it's a lot

280
00:13:30,470 --> 00:13:28,160
easier to clean that than it is to clean

281
00:13:33,110 --> 00:13:30,480
a place where all of those things could

282
00:13:35,590 --> 00:13:33,120
end up on the floor the walls the

283
00:13:38,150 --> 00:13:35,600
ceiling in any corner you could imagine

284
00:13:39,829 --> 00:13:38,160
so we get very creative and

285
00:13:44,470 --> 00:13:39,839
about how we take care of all the

286
00:13:48,550 --> 00:13:46,470
mr dawn this is cody tuckerman do you

287
00:13:56,230 --> 00:13:48,560
have a procedure in place in case you

288
00:14:00,470 --> 00:13:59,110

nobody is really anticipating finding

289
00:14:03,350 --> 00:14:00,480
other forms of life like

290
00:14:05,030 --> 00:14:03,360
extraterrestrial forms of life in space

291
00:14:07,030 --> 00:14:05,040
at this point in time

292
00:14:09,269 --> 00:14:07,040
we're still debating whether or not

293
00:14:12,230 --> 00:14:09,279
we've found any such

294
00:14:14,829 --> 00:14:12,240
fossil forms in meteorites that we have

295
00:14:17,590 --> 00:14:14,839
confirmed that come from mars

296
00:14:20,790 --> 00:14:17,600
now whether there are other forms of

297
00:14:23,750 --> 00:14:20,800
microbial life uh that's something that

298
00:14:26,230 --> 00:14:23,760
that maybe your generation will discover

299
00:14:28,389 --> 00:14:26,240
but what we do have in place now

300
00:14:30,790 --> 00:14:28,399
are how we deal with

301
00:14:33,110 --> 00:14:30,800
microbial forms of life that come from

302
00:14:35,110 --> 00:14:33,120
planet earth we've

303
00:14:38,870 --> 00:14:35,120
we have

304
00:14:41,750 --> 00:14:38,880
involve

305
00:14:43,350 --> 00:14:41,760
bacteria and virus and we have to make

306
00:14:45,509 --> 00:14:43,360
sure that they are double or triple

307
00:14:47,750 --> 00:14:45,519
contained so that they won't

308
00:14:49,509 --> 00:14:47,760
spill out of their petri dishes

309
00:14:51,670 --> 00:14:49,519
and then there are other unwanted forms

310
00:14:53,829 --> 00:14:51,680
of life that we have to keep in control

311
00:14:55,670 --> 00:14:53,839
for example mold and mildew just like it

312
00:14:58,069 --> 00:14:55,680
could grow in your bathroom walls it

313
00:15:00,310 --> 00:14:58,079

could grow up here and so we have to

314
00:15:02,470 --> 00:15:00,320
clean and disinfect areas of space

315
00:15:04,470 --> 00:15:02,480
station to keep unwanted things like

316
00:15:07,269 --> 00:15:04,480
that from happening and then when we

317
00:15:09,030 --> 00:15:07,279
have our food wrappers and things uh

318
00:15:11,910 --> 00:15:09,040
pouches that

319
00:15:13,350 --> 00:15:11,920
our food was rehydrated in and then you

320
00:15:15,350 --> 00:15:13,360
eat the food but there's always a little

321
00:15:18,470 --> 00:15:15,360
bit of residue that can turn into a

322
00:15:22,310 --> 00:15:18,480
biological experiment itself and so we

323
00:15:24,389 --> 00:15:22,320
have ways to deal with our our wet food

324
00:15:26,710 --> 00:15:24,399
wrapper waste

325
00:15:29,030 --> 00:15:26,720
so most of the things we have

326
00:15:31,990 --> 00:15:29,040
on space station right now in terms of

327
00:15:39,430 --> 00:15:32,000
microbial life forms are how do we deal

328
00:15:43,269 --> 00:15:41,509
commander dan this is caleb hernandez

329
00:15:45,749 --> 00:15:43,279
how hard is it to maintain a good

330
00:15:51,670 --> 00:15:45,759
relationship with each other in such a

331
00:15:56,069 --> 00:15:53,749
that's an interesting question i i think

332
00:15:57,590 --> 00:15:56,079
in my experience and maybe it's the

333
00:15:58,710 --> 00:15:57,600
thing that i said earlier the fact that

334
00:16:01,350 --> 00:15:58,720
all of us even though we come from

335
00:16:02,870 --> 00:16:01,360
different backgrounds all at heart

336
00:16:04,069 --> 00:16:02,880
love what we're doing all at hard

337
00:16:06,069 --> 00:16:04,079
believe in

338
00:16:09,030 --> 00:16:06,079

in the necessity for human beings to

339
00:16:11,269 --> 00:16:09,040
explore and so all of us are very happy

340
00:16:13,990 --> 00:16:11,279
um all of us really get along well

341
00:16:15,829 --> 00:16:14,000
incredibly well and we were all

342
00:16:17,269 --> 00:16:15,839
great friends long before we climbed

343
00:16:19,030 --> 00:16:17,279
aboard rockets and headed up to the

344
00:16:20,310 --> 00:16:19,040
international space station and i think

345
00:16:22,629 --> 00:16:20,320
in general that's pretty much been the

346
00:16:24,389 --> 00:16:22,639
experience throughout the space program

347
00:16:26,389 --> 00:16:24,399
but it is a challenge i think if you

348
00:16:27,990 --> 00:16:26,399
look at doing deep space missions where

349
00:16:29,990 --> 00:16:28,000
you were to go perhaps to mars for

350
00:16:31,910 --> 00:16:30,000
example for a couple of years and be in

351
00:16:33,590 --> 00:16:31,920
very close quarters it's really really

352
00:16:35,829 --> 00:16:33,600
important for people that do those kinds

353
00:16:37,670 --> 00:16:35,839
of missions to be very empathetic

354
00:16:39,350 --> 00:16:37,680
sympathetic to be able to really

355
00:16:40,790 --> 00:16:39,360
genuinely care about the folks around

356
00:16:42,550 --> 00:16:40,800
them and

357
00:16:44,550 --> 00:16:42,560
be willing to give each other the amount

358
00:16:46,949 --> 00:16:44,560
of space that you need but

359
00:16:48,870 --> 00:16:46,959
this is a teamwork flying in space

360
00:16:50,629 --> 00:16:48,880
is a team sport and it can be a

361
00:16:52,069 --> 00:16:50,639
dangerous team sport and i think it's

362
00:16:55,509 --> 00:16:52,079
important to really really care about

363
00:17:00,310 --> 00:16:57,990

mr dawn this is medina bearcats do you

364
00:17:05,110 --> 00:17:00,320
celebrate holidays in space and if yes

365
00:17:10,710 --> 00:17:08,230
do we celebrate holidays in space

366
00:17:12,549 --> 00:17:10,720
of course we celebrate holidays in space

367
00:17:14,069 --> 00:17:12,559
anytime you're away from home for long

368
00:17:17,990 --> 00:17:14,079
periods of time particularly in a

369
00:17:19,990 --> 00:17:18,000
frontier human beings celebrate holidays

370
00:17:22,150 --> 00:17:20,000
we did this when america was being

371
00:17:25,909 --> 00:17:22,160
settled we do it as scientists in

372
00:17:27,909 --> 00:17:25,919
antarctica we also do it in space and

373
00:17:30,789 --> 00:17:27,919
and since it's an international space

374
00:17:32,549 --> 00:17:30,799
station we get to celebrate not only the

375
00:17:35,590 --> 00:17:32,559
american holidays but we get to

376
00:17:40,310 --> 00:17:35,600
celebrate key international holidays as

377
00:17:49,590 --> 00:17:42,470
commander dan this is lauren young can

378
00:17:52,950 --> 00:17:51,190
well i guess you really can't use cell

379
00:17:54,950 --> 00:17:52,960
phones cell phones rely on radio towers

380
00:17:57,350 --> 00:17:54,960
that are on planet earth and and at any

381
00:17:59,029 --> 00:17:57,360
given time from the space station we can

382
00:18:00,950 --> 00:17:59,039
see

383
00:18:02,549 --> 00:18:00,960
an area of planet earth that covers

384
00:18:04,070 --> 00:18:02,559
thousands and thousands of miles from

385
00:18:06,549 --> 00:18:04,080
horizon the horizon you could probably

386
00:18:09,750 --> 00:18:06,559
see a thousand maybe ten thousand cell

387
00:18:11,830 --> 00:18:09,760
towers in that area um so for a lot of

388
00:18:13,590 --> 00:18:11,840

technical reasons we don't use cell

389
00:18:15,029 --> 00:18:13,600
phones the communication systems we have

390
00:18:18,310 --> 00:18:15,039
on board station are specifically

391
00:18:20,549 --> 00:18:18,320
designed for station and use satellites

392
00:18:23,510 --> 00:18:20,559
and relay links that connect to ground

393
00:18:25,510 --> 00:18:23,520
stations and the communications for us

394
00:18:27,190 --> 00:18:25,520
would be almost like it would feel a

395
00:18:28,950 --> 00:18:27,200
little bit like using cell phones you

396
00:18:31,029 --> 00:18:28,960
can call friends and family

397
00:18:32,710 --> 00:18:31,039
when you have the time and you can do

398
00:18:34,310 --> 00:18:32,720
that through your laptop computer and

399
00:18:39,110 --> 00:18:34,320
it's very similar to using cell phones

400
00:18:43,350 --> 00:18:41,669
mister dawn this is jocelyn coleman why

401
00:18:55,110 --> 00:18:43,360
is going into space necessary and what

402
00:18:58,230 --> 00:18:56,390
we're doing

403
00:19:00,070 --> 00:18:58,240
a number of different science

404
00:19:02,549 --> 00:19:00,080
experiments right now

405
00:19:04,470 --> 00:19:02,559
some are biological experiments on

406
00:19:06,150 --> 00:19:04,480
ourselves where we're guinea pigs and

407
00:19:08,150 --> 00:19:06,160
then we do a number of physical science

408
00:19:11,190 --> 00:19:08,160
experiments combustion

409
00:19:12,310 --> 00:19:11,200
uh crystallization things like that

410
00:19:17,830 --> 00:19:12,320
and

411
00:19:18,870 --> 00:19:17,840
to see a a major breakthrough

412
00:19:20,630 --> 00:19:18,880
takes

413
00:19:22,710 --> 00:19:20,640

quite a few years

414
00:19:24,070 --> 00:19:22,720
and it's something that's slow in coming

415
00:19:25,350 --> 00:19:24,080
and it's something that that lots of

416
00:19:27,270 --> 00:19:25,360
people on the ground have to sit and

417
00:19:29,190 --> 00:19:27,280
think about what the results are before

418
00:19:30,390 --> 00:19:29,200
everyone decides that wow this is really

419
00:19:31,190 --> 00:19:30,400
significant

420
00:19:32,870 --> 00:19:31,200
so

421
00:19:38,070 --> 00:19:32,880
for

422
00:19:43,669 --> 00:19:38,080
we will have to wait and see what comes

423
00:19:49,029 --> 00:19:46,789
commander dan this is emma tran how will

424
00:19:51,669 --> 00:19:49,039
equipment and supplies be lifted to the

425
00:19:57,350 --> 00:19:51,679
iss now that the shuttle program has

426
00:20:01,270 --> 00:19:59,750
now great question um we have cargo

427
00:20:03,190 --> 00:20:01,280
ships that come up from russia in fact

428
00:20:06,230 --> 00:20:03,200
we just four days ago received one on

429
00:20:08,149 --> 00:20:06,240
board space station and that's been a a

430
00:20:09,590 --> 00:20:08,159
a steady means for us to get cargo for a

431
00:20:10,950 --> 00:20:09,600
long time since the space station

432
00:20:13,190 --> 00:20:10,960
started in addition to the space

433
00:20:15,190 --> 00:20:13,200
shuttles the space shuttle

434
00:20:16,950 --> 00:20:15,200
up up mass capability that is the

435
00:20:18,950 --> 00:20:16,960
ability to lift cargo from earth to

436
00:20:20,710 --> 00:20:18,960
bring it to station is being replaced by

437
00:20:22,390 --> 00:20:20,720
commercial vehicles and the very first

438
00:20:24,710 --> 00:20:22,400

of those is going to come

439
00:20:26,549 --> 00:20:24,720
in a couple of months to space station

440
00:20:28,870 --> 00:20:26,559
so we've got a number of those that'll

441
00:20:30,789 --> 00:20:28,880
come the the europeans have an automated

442
00:20:32,230 --> 00:20:30,799
transfer vehicle which is a large cargo

443
00:20:33,990 --> 00:20:32,240
vehicle that also has been to space

444
00:20:36,630 --> 00:20:34,000
station and we'll also in a couple of

445
00:20:38,070 --> 00:20:36,640
months be coming back and the japanese

446
00:20:41,110 --> 00:20:38,080
have one as well

447
00:20:43,270 --> 00:20:41,120
the the htv or hope transfer vehicle so

448
00:20:45,029 --> 00:20:43,280
we've got lots of ways to get cargo to

449
00:20:47,510 --> 00:20:45,039
station we don't have very many ways to

450
00:20:48,710 --> 00:20:47,520
get cargo from space station right now

451
00:20:50,950 --> 00:20:48,720
if we want to bring something back to

452
00:20:53,270 --> 00:20:50,960
planet earth we're limited to this the

453
00:20:55,190 --> 00:20:53,280
relatively small volume we have in the

454
00:20:57,270 --> 00:20:55,200
capsule the spacecraft that we're going

455
00:20:59,990 --> 00:20:57,280
to ourselves ride back to planet earth

456
00:21:01,669 --> 00:21:00,000
when it's time to return and we very

457
00:21:04,070 --> 00:21:01,679
much need i think we very much would

458
00:21:05,990 --> 00:21:04,080
like to have a capability of of soft

459
00:21:07,830 --> 00:21:06,000
landing large amounts of cargo and the

460
00:21:09,669 --> 00:21:07,840
cargo could be equipment that we want to

461
00:21:11,190 --> 00:21:09,679
repair but it could also be a lot of the

462
00:21:13,430 --> 00:21:11,200
science samples that we have onboard

463
00:21:14,470 --> 00:21:13,440

space station and the vehicle that's

464
00:21:16,149 --> 00:21:14,480
going to come up here in a couple of

465
00:21:18,230 --> 00:21:16,159
months from space exploration

466
00:21:20,390 --> 00:21:18,240
technologies that vehicle should have

467
00:21:23,110 --> 00:21:20,400
the capability of returning cargo from

468
00:21:25,270 --> 00:21:23,120
space station something that the shuttle

469
00:21:29,990 --> 00:21:25,280
up till now has been exclusively capable

470
00:21:38,789 --> 00:21:32,470
hi mr dawn this is patrick wickstrom do

471
00:21:43,750 --> 00:21:41,990
do we sweat in space of course we sweat

472
00:21:46,149 --> 00:21:43,760
in space

473
00:21:49,190 --> 00:21:46,159
when we do our exercise particularly our

474
00:21:50,549 --> 00:21:49,200
cardiovascular exercise you get covered

475
00:21:53,510 --> 00:21:50,559
in sweat

476
00:21:55,669 --> 00:21:53,520
and and on your head the the sweat

477
00:21:58,070 --> 00:21:55,679
doesn't run down like it does in earth

478
00:22:00,230 --> 00:21:58,080
it just kind of beads up in little sweat

479
00:22:02,549 --> 00:22:00,240
balls stuck in your

480
00:22:04,470 --> 00:22:02,559
forehead and on your on your hair and

481
00:22:06,630 --> 00:22:04,480
then if you move your head quickly like

482
00:22:09,190 --> 00:22:06,640
that all these little sweat balls just

483
00:22:11,590 --> 00:22:09,200
fly off of your head and go scattering

484
00:22:13,909 --> 00:22:11,600
everywhere around where you happen to be

485
00:22:15,590 --> 00:22:13,919
and so you learn

486
00:22:16,870 --> 00:22:15,600
after a while

487
00:22:19,750 --> 00:22:16,880
uh when you're all covered with these

488
00:22:22,870 --> 00:22:19,760

sweat balls not to shake your head

489
00:22:23,830 --> 00:22:22,880
quickly and you get a towel or something

490
00:22:25,669 --> 00:22:23,840
and yeah

491
00:22:55,990 --> 00:22:25,679
you dry yourself off a little bit before

492
00:23:00,710 --> 00:22:58,310
thank you international space station

493
00:23:05,350 --> 00:23:00,720
thank you so much

494
00:23:09,750 --> 00:23:07,669
and ac low schools thanks very much for

495
00:23:11,110 --> 00:23:09,760
being with us today it was great to talk

496
00:23:13,830 --> 00:23:11,120
with you there were great questions the

497
00:23:16,630 --> 00:23:13,840
kids had and we look very we look

498
00:23:18,710 --> 00:23:16,640
forward very much to them um pursuing

499
00:23:19,990 --> 00:23:18,720
careers in science and technology

500
00:23:21,830 --> 00:23:20,000
engineering and math if that's what

501
00:23:23,430 --> 00:23:21,840
they'd like to do not down the road we

502
00:23:25,430 --> 00:23:23,440
very much need their energy and their

503
00:23:36,549 --> 00:23:25,440
ideas in the space program of the future

504
00:23:41,590 --> 00:23:38,470
station this is houston acr that

505
00:23:43,750 --> 00:23:41,600
concludes the event thank you

506
00:23:45,750 --> 00:23:43,760
thank you ace low intermediate school