



1  
00:00:06,710 --> 00:00:04,070  
good morning and welcome to johnson

2  
00:00:08,629 --> 00:00:06,720  
space center and a special facebook live

3  
00:00:10,390 --> 00:00:08,639  
event i'm brandi dean from the public

4  
00:00:12,230 --> 00:00:10,400  
affairs office and joining me today we

5  
00:00:13,910 --> 00:00:12,240  
have kirk shireman the program manager

6  
00:00:15,270 --> 00:00:13,920  
of the space station program

7  
00:00:16,870 --> 00:00:15,280  
thank you it's great to be here i'm

8  
00:00:18,310 --> 00:00:16,880  
excited to be part of this event well we

9  
00:00:20,630 --> 00:00:18,320  
have an exciting event we're going to be

10  
00:00:24,630 --> 00:00:20,640  
talking soon with uh

11  
00:00:26,230 --> 00:00:24,640  
astronauts joe acaba and paolo nespoli

12  
00:00:28,550 --> 00:00:26,240  
and they are going to be helping us kick

13  
00:00:30,710 --> 00:00:28,560

off the year of education on the space

14

00:00:32,790 --> 00:00:30,720

station as you may know joe is a former

15

00:00:33,990 --> 00:00:32,800

teacher who taught in middle school uh

16

00:00:35,590 --> 00:00:34,000

in and

17

00:00:37,510 --> 00:00:35,600

math and science in florida for several

18

00:00:39,190 --> 00:00:37,520

years before coming to nasa and then

19

00:00:41,990 --> 00:00:39,200

later this year one of his astronaut

20

00:00:43,430 --> 00:00:42,000

classmates ricky arnold will also be

21

00:00:46,389 --> 00:00:43,440

going to the international space station

22

00:00:47,910 --> 00:00:46,399

he also has quite a bit of extensive

23

00:00:49,750 --> 00:00:47,920

classroom experience

24

00:00:51,510 --> 00:00:49,760

so in recognition of their

25

00:00:53,590 --> 00:00:51,520

special background as educators this

26  
00:00:54,869 --> 00:00:53,600  
school year nasa and the cruise aboard

27  
00:00:56,790 --> 00:00:54,879  
space station are going to be using that

28  
00:00:59,750 --> 00:00:56,800  
special platform of the station to

29  
00:01:02,150 --> 00:00:59,760  
really uh push hard to inspire teachers

30  
00:01:03,189 --> 00:01:02,160  
and students here on the ground

31  
00:01:05,109 --> 00:01:03,199  
kurt maybe you can tell us a little bit

32  
00:01:06,469 --> 00:01:05,119  
about why that seemed like a good idea

33  
00:01:09,429 --> 00:01:06,479  
for the space station program sure well

34  
00:01:13,350 --> 00:01:09,439  
we had a unique opportunity uh this year

35  
00:01:15,270 --> 00:01:13,360  
to uh to expand the u.s uh crew members

36  
00:01:17,749 --> 00:01:15,280  
uh from three to four

37  
00:01:19,749 --> 00:01:17,759  
and uh and then in the in the selection

38  
00:01:21,830 --> 00:01:19,759

of the crew members to go fly those we

39

00:01:24,630 --> 00:01:21,840

we ended up with uh with joe acaba and

40

00:01:26,870 --> 00:01:24,640

ricky arnold and of course uh i would

41

00:01:28,310 --> 00:01:26,880

say it was not chosen that way but but

42

00:01:30,789 --> 00:01:28,320

since they were both had educational

43

00:01:32,630 --> 00:01:30,799

background uh both educators

44

00:01:34,870 --> 00:01:32,640

uh it just seemed like a great fit what

45

00:01:37,590 --> 00:01:34,880

a what a great opportunity for us to go

46

00:01:40,230 --> 00:01:37,600

put a renewed and perhaps a much larger

47

00:01:41,910 --> 00:01:40,240

emphasis on education on board the

48

00:01:44,950 --> 00:01:41,920

international space station so it really

49

00:01:47,030 --> 00:01:44,960

was a a a unique opportunity and unique

50

00:01:48,950 --> 00:01:47,040

crew members said hey let's go do this

51  
00:01:51,190 --> 00:01:48,960  
so i'm really excited about the

52  
00:01:53,190 --> 00:01:51,200  
opportunity this year and and i really

53  
00:01:55,270 --> 00:01:53,200  
hope that we'll take full advantage and

54  
00:01:58,069 --> 00:01:55,280  
and have the chance to touch many many

55  
00:02:00,149 --> 00:01:58,079  
kids and and educators across the nation

56  
00:02:01,270 --> 00:02:00,159  
absolutely i think the way we're going

57  
00:02:02,789 --> 00:02:01,280  
to do that or a few of the ways we're

58  
00:02:04,950 --> 00:02:02,799  
going to be doing that is giving some

59  
00:02:06,630 --> 00:02:04,960  
extra time to the crews to talk with

60  
00:02:07,670 --> 00:02:06,640  
students here on the ground maybe even

61  
00:02:09,669 --> 00:02:07,680  
doubling

62  
00:02:11,589 --> 00:02:09,679  
what we normally do and then also asking

63  
00:02:12,869 --> 00:02:11,599

them to do some special

64

00:02:16,070 --> 00:02:12,879

demonstrations that we're calling

65

00:02:17,830 --> 00:02:16,080

demonstrations for uh stem the science

66

00:02:19,670 --> 00:02:17,840

technology education

67

00:02:21,190 --> 00:02:19,680

engineering and mathematics

68

00:02:22,710 --> 00:02:21,200

giving them a chance to show what some

69

00:02:23,990 --> 00:02:22,720

of the science experiments that we might

70

00:02:26,309 --> 00:02:24,000

want to do here on the ground look like

71

00:02:28,070 --> 00:02:26,319

in space sure we you know iss is a

72

00:02:30,949 --> 00:02:28,080

fantastic laboratory it's a laboratory

73

00:02:31,750 --> 00:02:30,959

like like no other

74

00:02:35,509 --> 00:02:31,760

and

75

00:02:38,229 --> 00:02:35,519

national labs across the united states

76

00:02:40,309 --> 00:02:38,239

that do very unique things but

77

00:02:42,390 --> 00:02:40,319

but this one in particular does things

78

00:02:43,990 --> 00:02:42,400

that are so out of the ordinary for all

79

00:02:45,589 --> 00:02:44,000

of us it's just

80

00:02:47,270 --> 00:02:45,599

the kid in all of us i think comes out

81

00:02:49,670 --> 00:02:47,280

when you get to see what goes on the

82

00:02:51,990 --> 00:02:49,680

international space station so we grab

83

00:02:53,990 --> 00:02:52,000

people's attention because it's in space

84

00:02:55,990 --> 00:02:54,000

and then we can use that to really touch

85

00:02:57,910 --> 00:02:56,000

and inspire people to go

86

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

uh work on their education so i think we

87

00:03:01,990 --> 00:02:59,840

have a really unique opportunity with

88

00:03:03,910 --> 00:03:02,000

this national laboratory and with these

89

00:03:05,589 --> 00:03:03,920

educators this year so we'll uh we'll

90

00:03:07,430 --> 00:03:05,599

see how it goes i think that's got to be

91

00:03:09,350 --> 00:03:07,440

one of the best opportunities that we

92

00:03:11,350 --> 00:03:09,360

have to inspire students i know i would

93

00:03:12,630 --> 00:03:11,360

have been amazed to have an opportunity

94

00:03:14,390 --> 00:03:12,640

like this when i was in school

95

00:03:15,509 --> 00:03:14,400

absolutely you know of course when i was

96

00:03:17,110 --> 00:03:15,519

in school

97

00:03:18,550 --> 00:03:17,120

we didn't have people living and working

98

00:03:20,710 --> 00:03:18,560

in space

99

00:03:22,470 --> 00:03:20,720

but but today

100

00:03:24,229 --> 00:03:22,480

we've had we've had people living and

101  
00:03:27,110 --> 00:03:24,239  
working in space

102  
00:03:30,390 --> 00:03:27,120  
for uh for 16 years coming up on

103  
00:03:32,470 --> 00:03:30,400  
actually coming up on 17 years and so

104  
00:03:34,149 --> 00:03:32,480  
there's there's people who are

105  
00:03:35,830 --> 00:03:34,159  
seniors in high school who've never

106  
00:03:38,070 --> 00:03:35,840  
known a time when humans weren't living

107  
00:03:40,149 --> 00:03:38,080  
and working in space and we want to we

108  
00:03:42,149 --> 00:03:40,159  
want to make sure that people

109  
00:03:43,670 --> 00:03:42,159  
know about that and are inspired by that

110  
00:03:46,309 --> 00:03:43,680  
so this is again it's a great

111  
00:03:47,910 --> 00:03:46,319  
opportunity um and and we have the

112  
00:03:50,070 --> 00:03:47,920  
ability we have the people who have

113  
00:03:51,750 --> 00:03:50,080

those skills on board and uh and we're

114

00:03:53,670 --> 00:03:51,760

going to take advantage of it

115

00:03:56,470 --> 00:03:53,680

and how long have you been with nasa

116

00:03:58,789 --> 00:03:56,480

i've been with nasa since 1985 may 20th

117

00:04:00,710 --> 00:03:58,799

1985. so you've seen a lot of changes

118

00:04:02,869 --> 00:04:00,720

over the years and i'm sure the stations

119

00:04:05,509 --> 00:04:02,879

involve evolved a lot under under your

120

00:04:07,270 --> 00:04:05,519

leadership as well um anything that you

121

00:04:08,149 --> 00:04:07,280

think that would truly amaze students

122

00:04:09,030 --> 00:04:08,159

that you're hoping they'll get out of

123

00:04:10,949 --> 00:04:09,040

this

124

00:04:13,429 --> 00:04:10,959

uh you know the the thing that's always

125

00:04:14,390 --> 00:04:13,439

amazing to me anyway is

126  
00:04:17,030 --> 00:04:14,400  
the the

127  
00:04:19,349 --> 00:04:17,040  
you think things work a certain way and

128  
00:04:21,189 --> 00:04:19,359  
it turns out that they don't and so

129  
00:04:23,030 --> 00:04:21,199  
space is a great opportunity to see it

130  
00:04:25,510 --> 00:04:23,040  
certainly you can see very quickly that

131  
00:04:27,189 --> 00:04:25,520  
that they work differently um up there

132  
00:04:29,510 --> 00:04:27,199  
than they do here but even the ones you

133  
00:04:31,189 --> 00:04:29,520  
can imagine how they work and it turns

134  
00:04:34,070 --> 00:04:31,199  
out that they don't work that way that's

135  
00:04:35,510 --> 00:04:34,080  
that's the really cool thing so uh i i

136  
00:04:37,430 --> 00:04:35,520  
hope that we'll see that and then the

137  
00:04:39,350 --> 00:04:37,440  
next question is well why does it work

138  
00:04:41,030 --> 00:04:39,360

differently than i expected and that's

139

00:04:43,270 --> 00:04:41,040

where it really ties into education what

140

00:04:44,629 --> 00:04:43,280

is the physics behind what's going on

141

00:04:46,070 --> 00:04:44,639

and how does that physics or that

142

00:04:47,909 --> 00:04:46,080

knowledge of the physics didn't allow

143

00:04:50,070 --> 00:04:47,919

apply to to problems whether they're in

144

00:04:52,310 --> 00:04:50,080

space or on the ground and allow us to

145

00:04:54,469 --> 00:04:52,320

build a better world for all of us all

146

00:04:56,390 --> 00:04:54,479

right well we should be hearing from the

147

00:04:57,909 --> 00:04:56,400

capcom commit calling up to

148

00:04:59,749 --> 00:04:57,919

the crew onboard the station to start us

149

00:05:01,189 --> 00:04:59,759

off in just a second now so we'll we'll

150

00:05:02,469 --> 00:05:01,199

stand by for that

151  
00:05:12,230 --> 00:05:02,479  
station

152  
00:05:18,150 --> 00:05:15,110  
jsc pao this is mission control houston

153  
00:05:19,990 --> 00:05:18,160  
please call station for a voice check

154  
00:05:21,430 --> 00:05:20,000  
this is brandy dean from johnson space

155  
00:05:26,469 --> 00:05:21,440  
center public affairs office how do you

156  
00:05:31,110 --> 00:05:28,070  
and this is the international space

157  
00:05:32,950 --> 00:05:31,120  
station we have you loud and clear

158  
00:05:34,390 --> 00:05:32,960  
great it is fantastic to be talking to

159  
00:05:36,230 --> 00:05:34,400  
you thank you so much for joining this

160  
00:05:37,990 --> 00:05:36,240  
morning and uh just so you know i'm also

161  
00:05:39,510 --> 00:05:38,000  
here with kirk shireman so we're both

162  
00:05:41,749 --> 00:05:39,520  
excited to be kicking off the year of

163  
00:05:43,749 --> 00:05:41,759

education in space with you guys

164

00:05:44,870 --> 00:05:43,759

we have a lot of people on facebook live

165

00:05:46,710 --> 00:05:44,880

getting ready to send us in some

166

00:05:48,469 --> 00:05:46,720

questions and we'll be taking those uh

167

00:05:50,310 --> 00:05:48,479

and sending them up to you

168

00:05:52,390 --> 00:05:50,320

but first i thought i'd give kirk a

169

00:05:54,390 --> 00:05:52,400

chance to say hi

170

00:05:55,990 --> 00:05:54,400

yeah good afternoon it's great to see

171

00:06:00,710 --> 00:05:56,000

you on board the iss today how are you

172

00:06:00,720 --> 00:06:05,430

how you doing kirk we are doing great

173

00:06:09,029 --> 00:06:07,189

it's uh you know really an honor and a

174

00:06:10,390 --> 00:06:09,039

privilege to be up here working on the

175

00:06:11,590 --> 00:06:10,400

space station we're getting a lot of

176

00:06:17,189 --> 00:06:11,600

science done

177

00:06:21,830 --> 00:06:18,870

excellent well uh thank you for being

178

00:06:23,670 --> 00:06:21,840

part of this you know joe uh and paulo

179

00:06:25,430 --> 00:06:23,680

part of the the emphasis this year on

180

00:06:28,710 --> 00:06:25,440

education is really because we have the

181

00:06:30,710 --> 00:06:28,720

expanded usos crew um and uh and

182

00:06:33,510 --> 00:06:30,720

certainly because of your skills and and

183

00:06:35,670 --> 00:06:33,520

uh your unique skills and that fantastic

184

00:06:36,950 --> 00:06:35,680

laboratory that you have up there so

185

00:06:38,390 --> 00:06:36,960

we're really excited about the

186

00:06:46,230 --> 00:06:38,400

opportunity this year and

187

00:06:49,510 --> 00:06:47,430

yes kirk

188

00:06:52,070 --> 00:06:49,520

as you know because you you manage it uh

189

00:06:55,029 --> 00:06:52,080

this laboratory is an incredible

190

00:06:56,870 --> 00:06:55,039

place outside the earth for the earth

191

00:06:58,790 --> 00:06:56,880

and here we can do a lot of science a

192

00:07:00,950 --> 00:06:58,800

lot of technology but a lot of education

193

00:07:05,670 --> 00:07:00,960

and it's very good that uh

194

00:07:08,950 --> 00:07:07,430

okay we will jump right into the

195

00:07:10,870 --> 00:07:08,960

questions we've got one that's

196

00:07:12,950 --> 00:07:10,880

appropriate for the year of education

197

00:07:14,710 --> 00:07:12,960

kickoff it's coming from pre-service

198

00:07:16,629 --> 00:07:14,720

teachers and faculty at the university

199

00:07:17,350 --> 00:07:16,639

of houston downtown and they want to

200

00:07:19,189 --> 00:07:17,360

know

201  
00:07:20,629 --> 00:07:19,199  
as teachers and scientists how can

202  
00:07:22,950 --> 00:07:20,639  
classroom teachers help their students

203  
00:07:24,950 --> 00:07:22,960  
get a better understanding of the nature

204  
00:07:29,670 --> 00:07:24,960  
of science and to do real science in the

205  
00:07:32,710 --> 00:07:30,950  
well that's pretty cool we're working

206  
00:07:34,790 --> 00:07:32,720  
with the uh the pre-service teachers

207  
00:07:37,430 --> 00:07:34,800  
especially having those that are uh

208  
00:07:38,629 --> 00:07:37,440  
close to home there in houston

209  
00:07:39,749 --> 00:07:38,639  
and

210  
00:07:41,670 --> 00:07:39,759  
you know i think one of the most

211  
00:07:44,230 --> 00:07:41,680  
important things that we can do as

212  
00:07:45,990 --> 00:07:44,240  
educators when we're in the classroom is

213  
00:07:48,070 --> 00:07:46,000

to try to make things

214

00:07:50,469 --> 00:07:48,080

uh important to the students but also

215

00:07:52,309 --> 00:07:50,479

tangible and so i'm hoping that the work

216

00:07:54,150 --> 00:07:52,319

we can do together will be

217

00:07:55,749 --> 00:07:54,160

these pre-service teachers coming up

218

00:07:58,230 --> 00:07:55,759

with great ideas of things they might

219

00:08:00,710 --> 00:07:58,240

want to use to inspire their students

220

00:08:03,749 --> 00:08:00,720

coming up with those ideas sharing those

221

00:08:05,350 --> 00:08:03,759

with us and then letting us help you

222

00:08:07,270 --> 00:08:05,360

back in the classroom

223

00:08:09,909 --> 00:08:07,280

we have this here where we have some

224

00:08:12,150 --> 00:08:09,919

candies inside of a little plastic kind

225

00:08:13,670 --> 00:08:12,160

of a globe and there's lots of amazing

226

00:08:15,189 --> 00:08:13,680

things that you can do

227

00:08:16,950 --> 00:08:15,199

with something as simple as this so

228

00:08:19,189 --> 00:08:16,960

we're hoping that we can take advantage

229

00:08:22,469 --> 00:08:19,199

of the space station and your great

230

00:08:23,749 --> 00:08:22,479

ideas to help inspire those students

231

00:08:25,990 --> 00:08:23,759

all right well we've got some questions

232

00:08:27,830 --> 00:08:26,000

coming in from students as well this

233

00:08:29,990 --> 00:08:27,840

one's from

234

00:08:32,389 --> 00:08:30,000

jamil cream and they want to know how

235

00:08:40,630 --> 00:08:32,399

frequently you observe auroras and are

236

00:08:45,269 --> 00:08:43,269

well uh auroras are very interesting

237

00:08:46,870 --> 00:08:45,279

this is my second long duration mission

238

00:08:49,509 --> 00:08:46,880

and in the previous mission i was up

239

00:08:50,470 --> 00:08:49,519

here for about six months i think i saw

240

00:08:52,630 --> 00:08:50,480

twi

241

00:08:55,430 --> 00:08:52,640

two auroras just a little bit faint in

242

00:08:58,550 --> 00:08:55,440

the horizon but this mission here is

243

00:09:01,430 --> 00:08:58,560

just incredible we had some incredible

244

00:09:03,430 --> 00:09:01,440

auroras lighting up the whole sky sky at

245

00:09:04,470 --> 00:09:03,440

night so from my point of view they're a

246

00:09:06,949 --> 00:09:04,480

little bit

247

00:09:08,949 --> 00:09:06,959

unpredictable in fact they are a direct

248

00:09:10,710 --> 00:09:08,959

function of the activity of the sun and

249

00:09:13,110 --> 00:09:10,720

what happened between the interaction of

250

00:09:14,389 --> 00:09:13,120

the sun and the magnetic earth

251

00:09:16,470 --> 00:09:14,399

the magnetic

252

00:09:18,470 --> 00:09:16,480

field of the earth and

253

00:09:20,949 --> 00:09:18,480

we saw them we saw many many many of

254

00:09:22,710 --> 00:09:20,959

them and even today a little bit fainter

255

00:09:26,550 --> 00:09:22,720

if we go outside in the evening almost

256

00:09:29,590 --> 00:09:28,230

and have you all seen auroras from the

257

00:09:34,829 --> 00:09:29,600

ground if so

258

00:09:39,910 --> 00:09:38,070

view so you know i'm a kid from social

259

00:09:42,150 --> 00:09:39,920

and so we don't get too many auroras

260

00:09:43,910 --> 00:09:42,160

down there so it is uh you know one of

261

00:09:44,710 --> 00:09:43,920

my goals to go somewhere where i can see

262

00:09:47,030 --> 00:09:44,720

it but

263

00:09:48,070 --> 00:09:47,040

one a pretty neat story is we were going

264

00:09:52,389 --> 00:09:48,080

to

265

00:09:53,990 --> 00:09:52,399

and while we were flying we could

266

00:09:55,350 --> 00:09:54,000

actually see the auroras so that was

267

00:09:57,670 --> 00:09:55,360

pretty neat so i haven't seen it while

268

00:09:59,350 --> 00:09:57,680

i'm on earth i've seen it in a plane and

269

00:10:02,230 --> 00:09:59,360

i've seen it from here so one of my

270

00:10:04,870 --> 00:10:02,240

goals how about you

271

00:10:08,069 --> 00:10:04,880

yeah i will say that i saw one uh in

272

00:10:11,750 --> 00:10:08,079

sweden uh uh i had the occasion to be

273

00:10:12,790 --> 00:10:11,760

there and uh and and it was very

274

00:10:14,550 --> 00:10:12,800

peaceful

275

00:10:17,110 --> 00:10:14,560

to me watching this aurora from the

276

00:10:19,030 --> 00:10:17,120

earth up here in space to me it's a

277

00:10:20,949 --> 00:10:19,040

completely different feeling we are

278

00:10:23,990 --> 00:10:20,959

spinning so fast and the aurora is

279

00:10:26,389 --> 00:10:24,000

moving so fast it changes completely and

280

00:10:29,030 --> 00:10:26,399

it gives me a sense of of something that

281

00:10:33,110 --> 00:10:29,040

is really active and a little bit less

282

00:10:36,550 --> 00:10:33,120

peaceful to be to be honest

283

00:10:40,550 --> 00:10:38,550

i can only imagine one of one of the

284

00:10:43,110 --> 00:10:40,560

things i think is interesting in uh in

285

00:10:45,990 --> 00:10:43,120

that is uh in the past i know some of uh

286

00:10:47,750 --> 00:10:46,000

your crewmates have taken videos of this

287

00:10:50,230 --> 00:10:47,760

and they put it to music and that's one

288

00:10:52,389 --> 00:10:50,240

of the things i i find fascinating is is

289

00:10:53,269 --> 00:10:52,399

it's really uh as you pointed out paulo

290

00:10:54,790 --> 00:10:53,279

it's a

291

00:10:56,550 --> 00:10:54,800

phenomena

292

00:10:57,990 --> 00:10:56,560

caused by the sun which you have to see

293

00:11:00,389 --> 00:10:58,000

in the darkness

294

00:11:02,630 --> 00:11:00,399

and yet people see art in that

295

00:11:07,509 --> 00:11:02,640

in that form as well so it really kind

296

00:11:12,069 --> 00:11:09,750

absolutely kirk it's uh it's they're

297

00:11:14,790 --> 00:11:12,079

incredible the colors the shape the

298

00:11:17,110 --> 00:11:14,800

forms the way they go around the earth

299

00:11:19,110 --> 00:11:17,120

the way they spike up from earth it's

300

00:11:22,470 --> 00:11:19,120

absolutely incredible we took

301  
00:11:25,110 --> 00:11:22,480  
a time lapses so we put a camera on on a

302  
00:11:27,590 --> 00:11:25,120  
window and then we let it take a picture

303  
00:11:30,870 --> 00:11:27,600  
every second and we can combine in this

304  
00:11:33,110 --> 00:11:30,880  
way thousand pictures and in in a minute

305  
00:11:35,670 --> 00:11:33,120  
or in a couple of minutes show what the

306  
00:11:37,910 --> 00:11:35,680  
camera captures in in about 15 minutes

307  
00:11:40,550 --> 00:11:37,920  
and it's absolutely astonishing it's

308  
00:11:44,790 --> 00:11:42,550  
and if i can just uh add one more thing

309  
00:11:46,389 --> 00:11:44,800  
from this conversation is that for those

310  
00:11:48,389 --> 00:11:46,399  
teachers that are out there and those

311  
00:11:50,389 --> 00:11:48,399  
students that are out there you know we

312  
00:11:52,230 --> 00:11:50,399  
talk about art and a lot of times we

313  
00:11:55,030 --> 00:11:52,240

think art is separate from these

314

00:11:56,310 --> 00:11:55,040

sciences and really they're not so for

315

00:11:58,389 --> 00:11:56,320

those people that you know feel like

316

00:11:59,990 --> 00:11:58,399

they're more on the artistic side you

317

00:12:01,829 --> 00:12:00,000

know don't be afraid of the sciences

318

00:12:03,110 --> 00:12:01,839

because it is an art and so it's neat

319

00:12:05,990 --> 00:12:03,120

when you can bring those two things

320

00:12:09,110 --> 00:12:07,509

um i don't know that it would quite

321

00:12:11,110 --> 00:12:09,120

count as art but it looks like y'all did

322

00:12:12,550 --> 00:12:11,120

an experiment recently that i think is

323

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

going to capture a lot of school student

324

00:12:17,110 --> 00:12:14,959

attention and sent down some some video

325

00:12:18,870 --> 00:12:17,120

maybe over the weekend but we've got a

326

00:12:20,790 --> 00:12:18,880

question about how does a fidget spinner

327

00:12:29,110 --> 00:12:20,800

work in space so that that may be

328

00:12:32,949 --> 00:12:31,110

so great question and i'm glad we just

329

00:12:35,430 --> 00:12:32,959

we picked one up and

330

00:12:36,310 --> 00:12:35,440

a video just went out on friday so you

331

00:12:38,710 --> 00:12:36,320

can

332

00:12:40,150 --> 00:12:38,720

see the space spinner that is out there

333

00:12:42,230 --> 00:12:40,160

and what's really neat is of course is

334

00:12:45,110 --> 00:12:42,240

we're in this micro gravity environment

335

00:12:47,750 --> 00:12:45,120

you can get a really cool spin going and

336

00:12:49,829 --> 00:12:47,760

you can release it so you can see it'll

337

00:12:51,590 --> 00:12:49,839

pretty much stay there

338

00:12:54,230 --> 00:12:51,600

and then if paulo imparts any little bit

339

00:12:55,750 --> 00:12:54,240

of force on it it will follow the vector

340

00:12:58,230 --> 00:12:55,760

of the force that he's put on that so

341

00:13:00,870 --> 00:12:58,240

you can do all kinds of things

342

00:13:03,190 --> 00:13:00,880

and this is just a good example of what

343

00:13:04,550 --> 00:13:03,200

the teachers can ask us to do to help

344

00:13:06,310 --> 00:13:04,560

explain some of the concepts that

345

00:13:09,750 --> 00:13:06,320

they're going to teach in the classroom

346

00:13:11,190 --> 00:13:09,760

and the the little spinner it's fun and

347

00:13:13,030 --> 00:13:11,200

we have a good time with it and if you

348

00:13:16,150 --> 00:13:13,040

haven't seen the video yet it's pretty

349

00:13:20,069 --> 00:13:17,990

uh well kind of reversing it a little

350

00:13:21,829 --> 00:13:20,079

bit we have a teacher joe that wants to

351

00:13:23,110 --> 00:13:21,839

know what things you learned as a

352

00:13:28,790 --> 00:13:23,120

teacher that prepared you for being

353

00:13:34,870 --> 00:13:32,310

well i think being a school teacher is

354

00:13:35,990 --> 00:13:34,880

it's an awesome job but it prepares you

355

00:13:37,990 --> 00:13:36,000

very well

356

00:13:39,829 --> 00:13:38,000

maybe more than any other profession for

357

00:13:41,910 --> 00:13:39,839

being an astronaut as all of you

358

00:13:43,990 --> 00:13:41,920

teachers know you go when you start the

359

00:13:45,110 --> 00:13:44,000

day and you have a plan in place you

360

00:13:47,590 --> 00:13:45,120

think you know what you're going to do

361

00:13:49,910 --> 00:13:47,600

every minute up here we start the day

362

00:13:51,990 --> 00:13:49,920

and we have a plan in place so it's very

363

00:13:54,069 --> 00:13:52,000

similar but then as soon as those kids

364

00:13:56,629 --> 00:13:54,079

walk in the door and they do something

365

00:13:58,710 --> 00:13:56,639

or ask a question there goes your plan

366

00:14:00,629 --> 00:13:58,720

and so you have to be very flexible you

367

00:14:02,790 --> 00:14:00,639

have to be able to think on your feet

368

00:14:04,710 --> 00:14:02,800

and up here it's the same way where we

369

00:14:06,790 --> 00:14:04,720

think we have a plan and if it doesn't

370

00:14:10,629 --> 00:14:06,800

go quite right you have to learn how to

371

00:14:13,430 --> 00:14:10,639

fix it you have to work as a team and so

372

00:14:15,509 --> 00:14:13,440

you know being a teacher is

373

00:14:16,870 --> 00:14:15,519

i think i can say it might be harder

374

00:14:18,870 --> 00:14:16,880

than this job because we have all of

375

00:14:20,230 --> 00:14:18,880

mission control helping us and you

376

00:14:22,550 --> 00:14:20,240

teachers are in your classroom by

377

00:14:23,750 --> 00:14:22,560

yourselves and now you've got to fix the

378

00:14:25,350 --> 00:14:23,760

problem so

379

00:14:28,949 --> 00:14:25,360

i think being a teacher really prepared

380

00:14:34,389 --> 00:14:31,030

emma i am an engineer

381

00:14:36,629 --> 00:14:34,399

and i just look at joe and i admire his

382

00:14:38,550 --> 00:14:36,639

patients because he has

383

00:14:39,910 --> 00:14:38,560

an enormous amount of patience with

384

00:14:42,870 --> 00:14:39,920

everything that happens and the

385

00:14:44,710 --> 00:14:42,880

capability of cope with almost anything

386

00:14:47,829 --> 00:14:44,720

and that's uh i think that comes from

387

00:14:50,629 --> 00:14:47,839

the dealing every day with the situation

388

00:14:52,230 --> 00:14:50,639

with student with people that of course

389

00:14:53,990 --> 00:14:52,240

each one of them pushes you in every

390

00:14:56,870 --> 00:14:54,000

direction and if you're not flexible and

391

00:14:57,750 --> 00:14:56,880

patient you're not going anywhere

392

00:14:59,269 --> 00:14:57,760

joe

393

00:15:00,949 --> 00:14:59,279

and paula it seems like one of the one

394

00:15:03,350 --> 00:15:00,959

of the traits too is to

395

00:15:04,629 --> 00:15:03,360

is to see to see some phenomena not

396

00:15:07,269 --> 00:15:04,639

through your own eyes but through the

397

00:15:10,230 --> 00:15:07,279

eyes of a student and and then figure

398

00:15:11,829 --> 00:15:10,240

out how to uh explain it so that they

399

00:15:13,030 --> 00:15:11,839

understand it from from their

400

00:15:14,949 --> 00:15:13,040

perspective

401  
00:15:17,030 --> 00:15:14,959  
and and again i think that ties into

402  
00:15:19,110 --> 00:15:17,040  
your your life every day right the rest

403  
00:15:20,470 --> 00:15:19,120  
of the world is down here on the planet

404  
00:15:23,030 --> 00:15:20,480  
when you're doing an experiment even

405  
00:15:25,829 --> 00:15:23,040  
with the the principal investigator you

406  
00:15:27,670 --> 00:15:25,839  
have to explain what it means from from

407  
00:15:28,949 --> 00:15:27,680  
their perspective as opposed from from

408  
00:15:34,790 --> 00:15:28,959  
your own and

409  
00:15:38,870 --> 00:15:37,509  
yeah it's really interesting uh you know

410  
00:15:40,790 --> 00:15:38,880  
as a teacher

411  
00:15:43,189 --> 00:15:40,800  
you know i think i was a terrible math

412  
00:15:45,189 --> 00:15:43,199  
teacher for quite a few years because

413  
00:15:47,110 --> 00:15:45,199

you know math came easy to me as a you

414

00:15:48,629 --> 00:15:47,120

know as a kid i liked math

415

00:15:50,870 --> 00:15:48,639

and you know it was pretty easy so i

416

00:15:52,389 --> 00:15:50,880

would i taught the kids the way i

417

00:15:54,470 --> 00:15:52,399

learned in the way i thought was simple

418

00:15:55,749 --> 00:15:54,480

to learn and it didn't work well for

419

00:15:57,590 --> 00:15:55,759

everybody so

420

00:15:58,710 --> 00:15:57,600

you really do have to look at who you're

421

00:16:01,670 --> 00:15:58,720

talking to

422

00:16:03,910 --> 00:16:01,680

and saying it five times over again

423

00:16:06,629 --> 00:16:03,920

doesn't make it any clearer so we do

424

00:16:08,310 --> 00:16:06,639

have to find different ways to express

425

00:16:10,949 --> 00:16:08,320

what we're trying to say and how to get

426

00:16:12,629 --> 00:16:10,959

that uh concept across

427

00:16:13,749 --> 00:16:12,639

one other thing about that too it seems

428

00:16:15,910 --> 00:16:13,759

like uh

429

00:16:17,829 --> 00:16:15,920

uh at least for me as a student the

430

00:16:18,870 --> 00:16:17,839

applicability in other words what so

431

00:16:20,550 --> 00:16:18,880

you're learning something you're

432

00:16:22,470 --> 00:16:20,560

learning math or you're learning for me

433

00:16:24,150 --> 00:16:22,480

it was it was uh algebra

434

00:16:27,030 --> 00:16:24,160

uh you know what's the point what what

435

00:16:28,629 --> 00:16:27,040

are we doing this for and and again i

436

00:16:30,870 --> 00:16:28,639

think the space station and you guys up

437

00:16:32,629 --> 00:16:30,880

there can really help say hey this this

438

00:16:35,110 --> 00:16:32,639

is why you're learning it this is why

439

00:16:36,470 --> 00:16:35,120

it's important it really does be able to

440

00:16:38,550 --> 00:16:36,480

describe the

441

00:16:40,629 --> 00:16:38,560

the motion of things or

442

00:16:42,470 --> 00:16:40,639

or the biological phenomena all these

443

00:16:44,389 --> 00:16:42,480

things apply and here's why so it's

444

00:16:48,949 --> 00:16:44,399

really the application of the knowledge

445

00:16:52,150 --> 00:16:50,629

yeah kirk that's exactly right and

446

00:16:54,470 --> 00:16:52,160

that's why we want to get the teachers

447

00:16:56,790 --> 00:16:54,480

involved so they can tell us what they

448

00:16:59,590 --> 00:16:56,800

need and we are happy to to help them do

449

00:17:01,829 --> 00:16:59,600

that and being astronauts we are

450

00:17:03,910 --> 00:17:01,839

we are students we spend years in

451

00:17:05,429 --> 00:17:03,920

training to get up here and it's funny

452

00:17:07,189 --> 00:17:05,439

that you say that where sometimes we're

453

00:17:09,189 --> 00:17:07,199

taught things and we want to step back

454

00:17:11,510 --> 00:17:09,199

and say okay now why do i need to know

455

00:17:16,309 --> 00:17:11,520

this so even as adults i think it's

456

00:17:19,110 --> 00:17:17,750

all right well given the students a

457

00:17:21,909 --> 00:17:19,120

little bit of taste of what it's like in

458

00:17:24,470 --> 00:17:21,919

space we have a few questions uh on kind

459

00:17:27,029 --> 00:17:24,480

of space flight 101 and uh the mullen

460

00:17:34,150 --> 00:17:27,039

fee school wants to know what type of

461

00:17:38,310 --> 00:17:36,630

well i wish we would have a

462

00:17:40,549 --> 00:17:38,320

beautiful kitchen here where we can

463

00:17:42,789 --> 00:17:40,559

prepare all sorts of things i crave from

464

00:17:44,630 --> 00:17:42,799

a from a pizza actually i like to have a

465

00:17:46,390 --> 00:17:44,640

pizza kirk can we have a pizza up here

466

00:17:48,150 --> 00:17:46,400

please but

467

00:17:51,270 --> 00:17:48,160

but the truth is that it's very very

468

00:17:53,590 --> 00:17:51,280

difficult to cook and to handle fluids

469

00:17:55,590 --> 00:17:53,600

especially hot fluids in in this kind of

470

00:17:58,150 --> 00:17:55,600

environment i would not say impossible

471

00:17:59,750 --> 00:17:58,160

but very very difficult and and

472

00:18:02,070 --> 00:17:59,760

therefore the food that we have is

473

00:18:05,510 --> 00:18:02,080

something that can be managed a little

474

00:18:08,070 --> 00:18:05,520

bit like the the food that uh we use in

475

00:18:10,150 --> 00:18:08,080

the in the military those uh a meal

476

00:18:12,310 --> 00:18:10,160

ready to eat food already prepared all

477

00:18:14,549 --> 00:18:12,320

right tv what is it called

478

00:18:17,350 --> 00:18:14,559

a tv dinner something like that so we

479

00:18:18,310 --> 00:18:17,360

have uh thermo stabilized food food we

480

00:18:19,669 --> 00:18:18,320

have

481

00:18:23,029 --> 00:18:19,679

um

482

00:18:25,669 --> 00:18:23,039

regrettable food we have irradiated food

483

00:18:29,110 --> 00:18:25,679

mostly meat and uh

484

00:18:31,830 --> 00:18:29,120

and what else whatever juices and coffee

485

00:18:33,909 --> 00:18:31,840

but everything is contained in a bag so

486

00:18:35,990 --> 00:18:33,919

it's uh either you have to cut the bag

487

00:18:38,150 --> 00:18:36,000

open to get to it sometimes you suck out

488

00:18:39,350 --> 00:18:38,160

of the bag and it's uh it's a little bit

489

00:18:42,630 --> 00:18:39,360

different we're looking forward to that

490

00:18:45,350 --> 00:18:42,640

pizza it's a picnic for uh six months uh

491

00:18:47,750 --> 00:18:45,360

essentially uh but at the end we have

492

00:18:50,789 --> 00:18:47,760

enough variety here so each one of us

493

00:18:52,070 --> 00:18:50,799

can pick his own preferred food and

494

00:18:54,070 --> 00:18:52,080

and it's actually pretty good to tell

495

00:18:57,350 --> 00:18:54,080

you the truth at the end i thought it

496

00:18:59,590 --> 00:18:57,360

would be worse but it's actually not bad

497

00:19:01,029 --> 00:18:59,600

and i would say tortillas are our

498

00:19:03,350 --> 00:19:01,039

friends up here we don't have a lot of

499

00:19:05,510 --> 00:19:03,360

bread because of the crumbs that they

500

00:19:07,669 --> 00:19:05,520

they create but you'd be surprised at

501

00:19:08,830 --> 00:19:07,679

what you can put on a tortilla so try

502

00:19:11,029 --> 00:19:08,840

that at

503

00:19:13,190 --> 00:19:11,039

home you've been playing with your food

504

00:19:15,029 --> 00:19:13,200

a little bit if the i think that the

505

00:19:20,390 --> 00:19:15,039

ball of candy in the background is any

506

00:19:24,070 --> 00:19:21,830

yeah we're astronauts and we're

507

00:19:26,470 --> 00:19:24,080

professionals but we're big kids as well

508

00:19:28,310 --> 00:19:26,480

and we like to have fun

509

00:19:32,230 --> 00:19:28,320

speaking of fun and we play with food

510

00:19:35,830 --> 00:19:34,310

sorry about that speaking of fun

511

00:19:37,270 --> 00:19:35,840

hillary uh

512

00:19:39,190 --> 00:19:37,280

or her sixth grade students want to know

513

00:19:46,789 --> 00:19:39,200

how gravity works differently in space

514

00:19:50,070 --> 00:19:48,070

well

515

00:19:52,310 --> 00:19:50,080

there is gravity here in space but

516

00:19:54,070 --> 00:19:52,320

because we are falling falling down

517

00:19:56,150 --> 00:19:54,080

towards the earth and nothing is

518

00:19:58,230 --> 00:19:56,160

stopping us so the spacecraft is falling

519

00:20:01,110 --> 00:19:58,240

we are falling i am falling everybody is

520

00:20:04,470 --> 00:20:01,120

falling the result is that essentially

521

00:20:06,470 --> 00:20:04,480

you don't feel the effect of gravity and

522

00:20:08,230 --> 00:20:06,480

and you can do a lot of things it's it's

523

00:20:10,230 --> 00:20:08,240

actually incredible what happens when

524

00:20:12,710 --> 00:20:10,240

you go up here in space because you come

525

00:20:16,149 --> 00:20:12,720

up here like a terrestrial person so

526

00:20:18,230 --> 00:20:16,159

with gravity in your mind and you start

527

00:20:21,029 --> 00:20:18,240

trying to walk but how can you walk in

528

00:20:23,510 --> 00:20:21,039

these conditions so so you you have to

529

00:20:24,950 --> 00:20:23,520

to learn to walk with your hands and

530

00:20:27,590 --> 00:20:24,960

then when you go somewhere and you want

531

00:20:30,149 --> 00:20:27,600

to stay stable you cannot use your hands

532

00:20:33,190 --> 00:20:30,159

because otherwise you cannot work so you

533

00:20:35,190 --> 00:20:33,200

have to use your feet and and so it's

534

00:20:37,510 --> 00:20:35,200

kind of strange you walk with your hands

535

00:20:40,870 --> 00:20:37,520

and stay still with your feet and not

536

00:20:42,870 --> 00:20:40,880

only that you tend to walk uh

537

00:20:44,710 --> 00:20:42,880

with your feet towards what we call the

538

00:20:48,070 --> 00:20:44,720

floor but there is no floor and you have

539

00:20:51,190 --> 00:20:48,080

to learn to move and to adapt and put

540

00:20:53,510 --> 00:20:51,200

yourself in a way that you can actually

541

00:20:56,070 --> 00:20:53,520

work effectively efficiently so you have

542

00:20:58,549 --> 00:20:56,080

to become spiderman superman you have to

543

00:21:00,070 --> 00:20:58,559

become an extraterrestrial person and

544

00:21:02,390 --> 00:21:00,080

it's actually fun it's one of the

545

00:21:04,549 --> 00:21:02,400

discovery of space it takes few weeks i

546

00:21:09,270 --> 00:21:04,559

have to say but once you manage this

547

00:21:12,789 --> 00:21:10,789

yeah paula one of the things i find

548

00:21:14,710 --> 00:21:12,799

really interesting too uh and just

549

00:21:17,110 --> 00:21:14,720

watching you guys here in this this

550

00:21:18,470 --> 00:21:17,120

event is uh you know this

551

00:21:20,070 --> 00:21:18,480

one of newton's laws when you put

552

00:21:22,230 --> 00:21:20,080

something in a body in motion will tend

553

00:21:24,070 --> 00:21:22,240

to stay in motion and

554

00:21:25,590 --> 00:21:24,080

you know we know that from school but

555

00:21:27,510 --> 00:21:25,600

you guys even just holding that

556

00:21:29,669 --> 00:21:27,520

microphone and trying to leave the

557

00:21:31,510 --> 00:21:29,679

microphone sitting in one place you know

558

00:21:34,070 --> 00:21:31,520

any little tiny motion you leave on that

559

00:21:35,590 --> 00:21:34,080

microphone before you let go it stays

560

00:21:37,590 --> 00:21:35,600

and just drifts off

561

00:21:40,549 --> 00:21:37,600

drifts off and like the globe a minute

562

00:21:42,230 --> 00:21:40,559

ago drifted off into another module so

563

00:21:43,669 --> 00:21:42,240

all these really fundamental laws of

564

00:21:47,990 --> 00:21:43,679

physics you guys

565

00:21:51,430 --> 00:21:49,590

yeah and there are unintended

566

00:21:53,909 --> 00:21:51,440

consequences because you learn very

567

00:21:56,070 --> 00:21:53,919

quickly that you just push yourself and

568

00:21:58,149 --> 00:21:56,080

you're going where you want to go the

569

00:22:00,070 --> 00:21:58,159

fact that you forget that you have to

570

00:22:01,830 --> 00:22:00,080

stop and so

571

00:22:04,710 --> 00:22:01,840

at the beginning you don't realize that

572

00:22:06,310 --> 00:22:04,720

and when you hit the wall uh pretty fast

573

00:22:09,110 --> 00:22:06,320

and you start hurting yourself you

574

00:22:11,110 --> 00:22:09,120

figure out that ah newton laws it's very

575

00:22:14,710 --> 00:22:11,120

important here you better pay attention

576

00:22:18,070 --> 00:22:16,390

all right we're getting close to the end

577

00:22:20,149 --> 00:22:18,080

of our time but one other question that

578

00:22:21,510 --> 00:22:20,159

did come in that we wanted to ask is

579

00:22:23,029 --> 00:22:21,520

anything you can tell us about your

580

00:22:29,669 --> 00:22:23,039

favorite teachers and subjects when you

581

00:22:34,630 --> 00:22:31,669

well i um you know i did like the

582

00:22:38,470 --> 00:22:34,640

sciences so that was always fun

583

00:22:40,950 --> 00:22:38,480

chemistry physics but my favorite class

584

00:22:41,750 --> 00:22:40,960

was actually my metal shop class in high

585

00:22:43,830 --> 00:22:41,760

school

586

00:22:46,310 --> 00:22:43,840

and so we could take electives and so i

587

00:22:48,789 --> 00:22:46,320

actually took four years of metal shop

588

00:22:50,870 --> 00:22:48,799

where we learned how to weld uh worked

589

00:22:53,350 --> 00:22:50,880

on a lathe we were

590

00:22:56,149 --> 00:22:53,360

making molds we were you know just you

591

00:22:58,789 --> 00:22:56,159

name it we got to do it and to do that

592

00:23:01,029 --> 00:22:58,799

as a high school student it was great it

593

00:23:01,990 --> 00:23:01,039

prepared me for the different jobs that

594

00:23:04,789 --> 00:23:02,000

i've had

595

00:23:08,149 --> 00:23:04,799

and as a teacher i reflect back on that

596

00:23:11,510 --> 00:23:08,159

and i wonder how mr walters handled 30

597

00:23:14,230 --> 00:23:11,520

high school kids with high-powered tools

598

00:23:15,590 --> 00:23:14,240

with you know welding flames and things

599

00:23:16,630 --> 00:23:15,600

like that and

600

00:23:19,029 --> 00:23:16,640

you know he gave us a lot of

601  
00:23:21,270 --> 00:23:19,039  
responsibility as students and

602  
00:23:24,070 --> 00:23:21,280  
we love that and we ran with it so it

603  
00:23:26,070 --> 00:23:24,080  
was a it was great as a student and as a

604  
00:23:27,590 --> 00:23:26,080  
teacher it was really neat to see

605  
00:23:32,870 --> 00:23:27,600  
to look back and see how he managed the

606  
00:23:41,430 --> 00:23:34,390  
and do you think you had any teachers

607  
00:23:43,909 --> 00:23:42,549  
i think

608  
00:23:45,669 --> 00:23:43,919  
mr walters would have been a great

609  
00:23:48,149 --> 00:23:45,679  
astronaut when you look at what we do up

610  
00:23:51,110 --> 00:23:48,159  
here every day you know a lot of it is

611  
00:23:52,470 --> 00:23:51,120  
doing repairs and it takes someone who

612  
00:23:54,310 --> 00:23:52,480  
can you know who can work with their

613  
00:23:57,190 --> 00:23:54,320

hands who can understand a problem and

614

00:23:58,390 --> 00:23:57,200

find a way to to fix it but he might

615

00:24:00,390 --> 00:23:58,400

have been too good where he might have

616

00:24:01,750 --> 00:24:00,400

redone the whole space station so it's

617

00:24:04,149 --> 00:24:01,760

probably better that we kept them on

618

00:24:05,350 --> 00:24:04,159

earth

619

00:24:07,350 --> 00:24:05,360

good advice

620

00:24:08,630 --> 00:24:07,360

well last thing any uh anything you want

621

00:24:15,750 --> 00:24:08,640

to say or any advice you have for the

622

00:24:19,750 --> 00:24:17,830

well if if you're watching we want to

623

00:24:21,990 --> 00:24:19,760

thank you for coming on board

624

00:24:24,710 --> 00:24:22,000

and we hope that we can share our

625

00:24:27,430 --> 00:24:24,720

experience and and show you how science

626

00:24:29,750 --> 00:24:27,440

is real how science is fun

627

00:24:32,230 --> 00:24:29,760

and i would just tell any student out

628

00:24:34,470 --> 00:24:32,240

there you know find that subject those

629

00:24:36,549 --> 00:24:34,480

subjects that you really love and run

630

00:24:38,070 --> 00:24:36,559

with them whether it's science or not

631

00:24:39,830 --> 00:24:38,080

you know all of us that are up here we

632

00:24:42,630 --> 00:24:39,840

have different backgrounds but we all

633

00:24:44,630 --> 00:24:42,640

really enjoyed our careers before we got

634

00:24:47,990 --> 00:24:44,640

here and when you find something that

635

00:24:51,510 --> 00:24:48,000

you love it's it's more enjoyable to do

636

00:24:52,950 --> 00:24:51,520

it doesn't actually seem like work

637

00:24:54,549 --> 00:24:52,960

you get paid

638

00:24:56,630 --> 00:24:54,559

and you know you may not always be the

639

00:24:58,710 --> 00:24:56,640

smartest person out there like someone

640

00:25:00,390 --> 00:24:58,720

has told me many times but you can

641

00:25:02,950 --> 00:25:00,400

always be the one that works the hardest

642

00:25:06,310 --> 00:25:02,960

so don't be afraid to work hard and try

643

00:25:11,990 --> 00:25:09,269

i would i would tell kids that you know

644

00:25:13,990 --> 00:25:12,000

math science research these are not

645

00:25:16,789 --> 00:25:14,000

things for crazy people well some of the

646

00:25:20,470 --> 00:25:16,799

people are crazy but but not people out

647

00:25:23,190 --> 00:25:20,480

of the world we are not you know

648

00:25:25,669 --> 00:25:23,200

nobel prize winner or geniuses or

649

00:25:28,390 --> 00:25:25,679

anything we're just regular people that

650

00:25:30,470 --> 00:25:28,400

that have had the strength to

651  
00:25:33,190 --> 00:25:30,480  
to have a dream and pursue it and

652  
00:25:35,350 --> 00:25:33,200  
eventually be up here and if i made it

653  
00:25:37,909 --> 00:25:35,360  
if joe made it it means it's possible

654  
00:25:38,870 --> 00:25:37,919  
everybody can do it so just just have a

655  
00:25:43,830 --> 00:25:38,880  
dream

656  
00:25:45,990 --> 00:25:43,840  
just go at it because you can actually

657  
00:25:47,430 --> 00:25:46,000  
do it

658  
00:25:48,789 --> 00:25:47,440  
all right well thank you so much for

659  
00:25:50,470 --> 00:25:48,799  
sharing your dream with us we look

660  
00:25:52,630 --> 00:25:50,480  
forward to seeing a lot more as we go

661  
00:25:55,110 --> 00:25:52,640  
through this great year of education on

662  
00:25:59,190 --> 00:25:55,120  
the station thank you so much yeah thank

663  
00:25:59,200 --> 00:26:04,310

thanks for joining us

664

00:26:15,909 --> 00:26:06,470

station this is houston acr that

665

00:26:34,230 --> 00:26:18,789

station we are now resuming operational

666

00:26:37,669 --> 00:26:36,390

it's it's without borders

667

00:26:39,830 --> 00:26:37,679

and certainly what we're trying to do on

668

00:26:42,149 --> 00:26:39,840

international space station is is like

669

00:26:44,310 --> 00:26:42,159

that while we were talking to these guys

670

00:26:47,110 --> 00:26:44,320

they actually orbited about one-third of

671

00:26:49,110 --> 00:26:47,120

the planet so uh so uh

672

00:26:51,430 --> 00:26:49,120

anyway it's just amazing to me

673

00:26:53,430 --> 00:26:51,440

that uh that they're seeing a third of

674

00:26:56,070 --> 00:26:53,440

the planet in these few minutes that we

675

00:26:57,510 --> 00:26:56,080

were we were talking to them and and

676  
00:26:59,990 --> 00:26:57,520  
they could impact

677  
00:27:01,909 --> 00:27:00,000  
a third of the planet or more absolutely

678  
00:27:03,269 --> 00:27:01,919  
yeah it's amazing and amazing that they

679  
00:27:05,269 --> 00:27:03,279  
are able to take some time out for this

680  
00:27:07,590 --> 00:27:05,279  
knowing what all the well what else

681  
00:27:09,190 --> 00:27:07,600  
they've got going on sure you know joe's

682  
00:27:10,789 --> 00:27:09,200  
getting ready for a spacewalk that's

683  
00:27:13,190 --> 00:27:10,799  
right friday we're going to go outside

684  
00:27:14,789 --> 00:27:13,200  
and uh and do some more work outside

685  
00:27:16,789 --> 00:27:14,799  
it'll be the third of our

686  
00:27:19,029 --> 00:27:16,799  
of our spaceworks uh the last one really

687  
00:27:21,750 --> 00:27:19,039  
that we have planned until uh until next

688  
00:27:23,669 --> 00:27:21,760

year so we're looking forward to uh to

689

00:27:25,909 --> 00:27:23,679

to joe acaba and uh

690

00:27:27,029 --> 00:27:25,919

and randy bresnik going outside uh on

691

00:27:28,230 --> 00:27:27,039

friday

692

00:27:29,510 --> 00:27:28,240

and i know you've also probably got a

693

00:27:31,590 --> 00:27:29,520

lot of work to get back to but one more

694

00:27:32,870 --> 00:27:31,600

question for you um these guys get asked

695

00:27:34,870 --> 00:27:32,880

all the time you know how they became an

696

00:27:36,389 --> 00:27:34,880

astronaut but how how did you become a

697

00:27:38,070 --> 00:27:36,399

space station program manager was that

698

00:27:39,990 --> 00:27:38,080

something that you had any idea about

699

00:27:41,750 --> 00:27:40,000

when you were young yes uh absolutely

700

00:27:44,950 --> 00:27:41,760

not of course when i was a kid i was

701  
00:27:47,269 --> 00:27:44,960  
born i was born in 1962. so uh people

702  
00:27:49,269 --> 00:27:47,279  
were flying in space by then

703  
00:27:51,430 --> 00:27:49,279  
as a little kid i got to see

704  
00:27:53,909 --> 00:27:51,440  
the first steps on the on the moon which

705  
00:27:55,510 --> 00:27:53,919  
was really exciting although

706  
00:27:58,070 --> 00:27:55,520  
you know it wasn't that that said hey i

707  
00:28:00,149 --> 00:27:58,080  
need to go work for nasa my in my case i

708  
00:28:02,710 --> 00:28:00,159  
was fascinated by airplanes i loved

709  
00:28:04,310 --> 00:28:02,720  
airplanes from a small as a small child

710  
00:28:07,350 --> 00:28:04,320  
even i can remember five years old

711  
00:28:09,110 --> 00:28:07,360  
building little balsa wood airplanes and

712  
00:28:11,110 --> 00:28:09,120  
i wanted to build and fly airplanes

713  
00:28:12,549 --> 00:28:11,120

that's what i wanted to do and so i went

714

00:28:14,870 --> 00:28:12,559

to school to be an engineer so i could

715

00:28:16,149 --> 00:28:14,880

build and fly airplanes

716

00:28:17,590 --> 00:28:16,159

and i had the opportunity to go work on

717

00:28:19,669 --> 00:28:17,600

the space shuttle and so you know what

718

00:28:21,350 --> 00:28:19,679

better airplane than one that flies in

719

00:28:23,190 --> 00:28:21,360

space and on the ground and then from

720

00:28:25,269 --> 00:28:23,200

the space shuttle i came to the space

721

00:28:27,990 --> 00:28:25,279

station so it just one thing led to

722

00:28:30,950 --> 00:28:28,000

another but it's just this i would say

723

00:28:33,269 --> 00:28:30,960

lifelong interest in flying in in

724

00:28:35,430 --> 00:28:33,279

machines that that took humans faster

725

00:28:37,909 --> 00:28:35,440

and higher than they've ever gone before

726

00:28:40,470 --> 00:28:37,919

uh it was my passion it was my interest

727

00:28:42,149 --> 00:28:40,480

and i'm i'm like like joe and paulo said

728

00:28:43,110 --> 00:28:42,159

i guess it was really paulo said hey

729

00:28:45,510 --> 00:28:43,120

just find something that you're

730

00:28:47,750 --> 00:28:45,520

passionate about and and uh and wake up

731

00:28:50,630 --> 00:28:47,760

every day and pursue that passion and

732

00:28:51,909 --> 00:28:50,640

and really anything is possible yeah as

733

00:28:53,590 --> 00:28:51,919

it's clear just watching you and

734

00:28:55,110 --> 00:28:53,600

watching these guys

735

00:28:56,310 --> 00:28:55,120

all right well we are going to wrap up

736

00:28:59,029 --> 00:28:56,320

now but of course you're going to want

737

00:29:00,789 --> 00:28:59,039

to keep up as the we go out as we go on

738

00:29:02,549 --> 00:29:00,799

with this year of education on station a

739

00:29:04,149 --> 00:29:02,559

few ways that you can do that is by

740

00:29:07,029 --> 00:29:04,159

following us on facebook you can look

741

00:29:09,029 --> 00:29:07,039

for nasa jsc education and then on

742

00:29:10,710 --> 00:29:09,039

twitter right now with the with the crew

743

00:29:12,710 --> 00:29:10,720

we've got on board several of them are

744

00:29:14,549 --> 00:29:12,720

on twitter you can look for them at

745

00:29:17,430 --> 00:29:14,559

astro acaba and that's joe acaba's

746

00:29:19,110 --> 00:29:17,440

account or astro underscore paulo for

747

00:29:21,190 --> 00:29:19,120

palo nespoli

748

00:29:23,269 --> 00:29:21,200

an astro underscore ricky who will be

749

00:29:24,549 --> 00:29:23,279

coming up to join with join the space

750

00:29:27,669 --> 00:29:24,559

station crew

751

00:29:28,710 --> 00:29:27,679

next year and again with a spacewalk

752

00:29:32,310 --> 00:29:28,720

coming up you're going to want to tune

753

00:29:33,909 --> 00:29:32,320

back into nasa tv for that we'll be uh

754

00:29:37,350 --> 00:29:33,919

beginning that spacewalk probably around

755

00:29:39,149 --> 00:29:37,360

805 a.m eastern time on friday

756

00:29:40,950 --> 00:29:39,159

and you can watch that live on nasa

757

00:29:41,909 --> 00:29:40,960

tv.gov

758

00:29:42,950 --> 00:29:41,919

live

759

00:29:44,310 --> 00:29:42,960

and

760

00:29:45,830 --> 00:29:44,320

as always you can keep up with what's

761

00:29:47,990 --> 00:29:45,840

going on at the space station at