



1
00:00:07,349 --> 00:00:02,950
station this is houston are you ready

2
00:00:07,359 --> 00:00:11,830
houston station i'm ready for the event

3
00:00:15,190 --> 00:00:12,950
krg

4
00:00:22,230 --> 00:00:15,200
tv this is mission control houston

5
00:00:27,670 --> 00:00:23,830
go ahead

6
00:00:32,470 --> 00:00:27,680
houston this is krgbtv i am ready do you

7
00:00:40,470 --> 00:00:35,110
krg this is mike fossum on the space

8
00:00:49,350 --> 00:00:42,709
good morning commander fossum it is so

9
00:00:49,360 --> 00:00:54,229
it's great to talk to you today too dina

10
00:01:04,549 --> 00:00:56,549
all right so much to talk about uh tell

11
00:01:09,109 --> 00:01:06,710
i i'd prefer to think of it as my latest

12
00:01:11,109 --> 00:01:09,119
mission in space this this one's a

13
00:01:13,910 --> 00:01:11,119

really big adventure you know i started

14

00:01:15,590 --> 00:01:13,920

off uh well first two space shuttle

15

00:01:18,390 --> 00:01:15,600

missions each about two weeks in

16

00:01:20,550 --> 00:01:18,400

duration helping build the space station

17

00:01:22,950 --> 00:01:20,560

and now i'm living on the space station

18

00:01:24,310 --> 00:01:22,960

for almost six months and i am currently

19

00:01:26,149 --> 00:01:24,320

serving as the commander of the

20

00:01:28,149 --> 00:01:26,159

international space station it's an

21

00:01:32,149 --> 00:01:28,159

awesome responsibility but it's really a

22

00:01:38,830 --> 00:01:34,390

what's it been like for you these last

23

00:01:43,990 --> 00:01:41,510

months you know in a lot of ways it's

24

00:01:46,310 --> 00:01:44,000

learning to to adapt to not just

25

00:01:48,149 --> 00:01:46,320

visiting space but to living up here and

26
00:01:49,670 --> 00:01:48,159
there's a lot of adaptation because our

27
00:01:51,990 --> 00:01:49,680
bodies were meant

28
00:01:53,670 --> 00:01:52,000
you know first for a 1g for living on

29
00:01:55,670 --> 00:01:53,680
the ground to help keep our bones and

30
00:01:58,149 --> 00:01:55,680
our muscles healthy our cardiovascular

31
00:02:00,630 --> 00:01:58,159
system healthy and all of our habits on

32
00:02:02,709 --> 00:02:00,640
how we work and do things depends on

33
00:02:05,429 --> 00:02:02,719
your ability to take a tool set it on

34
00:02:07,350 --> 00:02:05,439
the workbench and it stays there and

35
00:02:08,869 --> 00:02:07,360
here of course that's not true and so

36
00:02:11,110 --> 00:02:08,879
you have to adapt you have to learn how

37
00:02:12,710 --> 00:02:11,120
to hold everything down

38
00:02:13,670 --> 00:02:12,720

all the spare parts all the nuts and

39

00:02:15,190 --> 00:02:13,680

bolts

40

00:02:16,869 --> 00:02:15,200

as you're working on things or they

41

00:02:18,630 --> 00:02:16,879

won't just fall to the floor because

42

00:02:20,949 --> 00:02:18,640

there's no falling to the floor they

43

00:02:22,390 --> 00:02:20,959

will go in all different directions and

44

00:02:27,110 --> 00:02:22,400

then you'll be chasing them down to the

45

00:02:30,790 --> 00:02:29,670

i saw you not too long ago at hess tech

46

00:02:33,270 --> 00:02:30,800

talking to

47

00:02:34,869 --> 00:02:33,280

hundreds of students from the valley and

48

00:02:37,509 --> 00:02:34,879

you showed them some really cool tricks

49

00:02:38,630 --> 00:02:37,519

out there you showed them what it's like

50

00:02:40,150 --> 00:02:38,640

to be

51
00:02:44,550 --> 00:02:40,160
in zero gravity

52
00:02:49,830 --> 00:02:47,750
oh absolutely absolutely

53
00:02:51,750 --> 00:02:49,840
it was great talking to the to all the

54
00:02:53,430 --> 00:02:51,760
kids at heztech hestech's a wonderful

55
00:02:54,949 --> 00:02:53,440
program i've been there to speak to it

56
00:02:57,110 --> 00:02:54,959
in person

57
00:03:00,149 --> 00:02:57,120
and uh it's it's a great opportunity for

58
00:03:02,070 --> 00:03:00,159
people to come in and for them the the

59
00:03:04,390 --> 00:03:02,080
the children to be exposed to different

60
00:03:07,509 --> 00:03:04,400
parts of science technology engineering

61
00:03:10,070 --> 00:03:07,519
mathematics and see that it really is

62
00:03:11,830 --> 00:03:10,080
these are exciting fields of study they

63
00:03:15,190 --> 00:03:11,840

explain through the science and

64

00:03:17,910 --> 00:03:15,200

technology it it explains how our world

65

00:03:19,589 --> 00:03:17,920

works and so any any kid that's looked

66

00:03:21,910 --> 00:03:19,599

up in the sky and wondered why is it

67

00:03:24,710 --> 00:03:21,920

doing that or looked at a plant or

68

00:03:26,710 --> 00:03:24,720

looked at the the tides and and science

69

00:03:28,550 --> 00:03:26,720

helps explain those things and i hope

70

00:03:31,589 --> 00:03:28,560

that it helps put the some of the

71

00:03:33,030 --> 00:03:31,599

understanding behind the wonder in in a

72

00:03:38,070 --> 00:03:33,040

kid's eyes as they're looking at the

73

00:03:42,070 --> 00:03:40,149

i know you spend so many hours working

74

00:03:47,110 --> 00:03:42,080

throughout the day but what do you do

75

00:03:51,110 --> 00:03:49,190

i think during a downtime a favorite

76

00:03:53,270 --> 00:03:51,120

thing to do is absolutely look out the

77

00:03:54,949 --> 00:03:53,280

windows we have a little cluster of

78

00:03:57,110 --> 00:03:54,959

windows on the bottom of the space

79

00:03:59,509 --> 00:03:57,120

station that's oriented for a perfect

80

00:04:01,830 --> 00:03:59,519

viewing of earth as we go by we go over

81

00:04:04,470 --> 00:04:01,840

the earth at over 17 000 miles an hour

82

00:04:06,710 --> 00:04:04,480

it's about five miles a second so we go

83

00:04:09,589 --> 00:04:06,720

around the whole globe in just 90

84

00:04:11,750 --> 00:04:09,599

minutes we see a sunrise and a sunset in

85

00:04:13,830 --> 00:04:11,760

90 minutes and there's always something

86

00:04:16,469 --> 00:04:13,840

to see looking out of the windows the

87

00:04:18,310 --> 00:04:16,479

beautiful oceans the continents with the

88

00:04:20,229 --> 00:04:18,320

mountain ranges and the deserts and the

89

00:04:21,270 --> 00:04:20,239

rainforests

90

00:04:23,590 --> 00:04:21,280

the uh

91

00:04:25,749 --> 00:04:23,600

there's and then when it's night you

92

00:04:27,510 --> 00:04:25,759

really see where people live where the

93

00:04:29,590 --> 00:04:27,520

cities are located with all of the

94

00:04:31,270 --> 00:04:29,600

lights and it's so fascinating to see

95

00:04:33,830 --> 00:04:31,280

the patterns of lights going across the

96

00:04:35,189 --> 00:04:33,840

united states and how that changes in

97

00:04:36,870 --> 00:04:35,199

different parts of the world because

98

00:04:38,710 --> 00:04:36,880

they have different ways of of

99

00:04:39,990 --> 00:04:38,720

distributing power

100

00:04:41,030 --> 00:04:40,000

or using

101
00:04:42,550 --> 00:04:41,040
energy

102
00:04:44,070 --> 00:04:42,560
so it's there's always something

103
00:04:45,590 --> 00:04:44,080
fascinating to see out the windows

104
00:04:48,310 --> 00:04:45,600
that's definitely the favorite thing to

105
00:04:53,030 --> 00:04:51,110
i bet it is an awesome sight

106
00:04:55,270 --> 00:04:53,040
now this must be a bittersweet moment

107
00:05:00,629 --> 00:04:55,280
for you with the ending of the space

108
00:05:05,749 --> 00:05:03,350
well what we saw i was here for the last

109
00:05:07,590 --> 00:05:05,759
space shuttle mission and the space

110
00:05:10,150 --> 00:05:07,600
shuttle program was wonderfully

111
00:05:11,189 --> 00:05:10,160
successful for 30 years we've been

112
00:05:13,270 --> 00:05:11,199
flying

113
00:05:16,070 --> 00:05:13,280

americans and international partners to

114

00:05:17,990 --> 00:05:16,080

space on a fairly routine basis

115

00:05:18,870 --> 00:05:18,000

indeed it's hard for most americans to

116

00:05:21,430 --> 00:05:18,880

even

117

00:05:23,510 --> 00:05:21,440

remember a time when we weren't flying

118

00:05:25,670 --> 00:05:23,520

the space shuttle itself

119

00:05:27,189 --> 00:05:25,680

fairly regularly and so it's it's a hard

120

00:05:29,670 --> 00:05:27,199

thing right now as the space shuttles

121

00:05:32,390 --> 00:05:29,680

are are being prepared for their final

122

00:05:34,469 --> 00:05:32,400

trip to museums around the country and

123

00:05:36,150 --> 00:05:34,479

it is a bittersweet time it is sad in

124

00:05:37,590 --> 00:05:36,160

ways but that it's not the end of our

125

00:05:40,629 --> 00:05:37,600

space program

126

00:05:42,390 --> 00:05:40,639

i'm up here now and there's there's more

127

00:05:45,029 --> 00:05:42,400

another american due to come up in about

128

00:05:47,270 --> 00:05:45,039

a month to eventually take my place up

129

00:05:48,790 --> 00:05:47,280

here and so we're our program has

130

00:05:51,110 --> 00:05:48,800

changed it won't involve flying the

131

00:05:52,550 --> 00:05:51,120

space shuttle to and from space right

132

00:05:54,390 --> 00:05:52,560

now we're

133

00:05:57,189 --> 00:05:54,400

we're i flew up on a russian rocket

134

00:05:59,270 --> 00:05:57,199

which uh for me it was an amazing

135

00:06:01,189 --> 00:05:59,280

experience to to go through all of that

136

00:06:03,590 --> 00:06:01,199

training in russia launching out of

137

00:06:06,629 --> 00:06:03,600

baikonur kazakhstan a baikonur

138

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

cosmodrome in kazakhstan to live and

139

00:06:10,870 --> 00:06:08,639

work up here we'll be landing in a in

140

00:06:13,270 --> 00:06:10,880

the same russian uh

141

00:06:14,870 --> 00:06:13,280

capsule spacecraft in the middle of

142

00:06:17,350 --> 00:06:14,880

november i should be home just in time

143

00:06:19,909 --> 00:06:17,360

for thanksgiving but we're continuing

144

00:06:21,510 --> 00:06:19,919

with space we're not giving up on space

145

00:06:23,510 --> 00:06:21,520

there's a number of different programs

146

00:06:25,430 --> 00:06:23,520

right now a lot of private contractors

147

00:06:27,590 --> 00:06:25,440

are working to come up with the ability

148

00:06:30,790 --> 00:06:27,600

to deliver cargo to space which will

149

00:06:32,309 --> 00:06:30,800

replace a very uh very useful function

150

00:06:34,550 --> 00:06:32,319

necessary function that the space

151

00:06:36,790 --> 00:06:34,560

shuttle did very well

152

00:06:39,430 --> 00:06:36,800

and they're also working on derivatives

153

00:06:42,469 --> 00:06:39,440

or or modifications or new spacecraft to

154

00:06:44,950 --> 00:06:42,479

launch americans into space on an

155

00:06:46,230 --> 00:06:44,960

american rocket again and i'm excited

156

00:06:49,510 --> 00:06:46,240

about it there's a lot there's still

157

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

questions on exactly where that's going

158

00:06:53,510 --> 00:06:52,080

to go and when but it's going to happen

159

00:06:58,230 --> 00:06:53,520

we're going to continue to reach out

160

00:07:04,710 --> 00:06:59,830

how much are you looking forward to

161

00:07:08,469 --> 00:07:06,870

well i i love what i'm doing up here

162

00:07:11,189 --> 00:07:08,479

it's it's been the

163

00:07:13,189 --> 00:07:11,199

challenge of a career and a great

164

00:07:15,029 --> 00:07:13,199

opportunity for me but i am looking

165

00:07:17,350 --> 00:07:15,039

forward to being home i've actually left

166

00:07:19,670 --> 00:07:17,360

home about seven months ago to go to

167

00:07:22,230 --> 00:07:19,680

russia to finish the final preparations

168

00:07:24,230 --> 00:07:22,240

for my launch so it's a it's a long road

169

00:07:26,070 --> 00:07:24,240

a space shuttle mission is about a year

170

00:07:27,430 --> 00:07:26,080

from the time you're assigned you go

171

00:07:29,110 --> 00:07:27,440

through your training you go through the

172

00:07:31,029 --> 00:07:29,120

flight and then you're home

173

00:07:33,270 --> 00:07:31,039

this one's a long one a lot of my

174

00:07:36,550 --> 00:07:33,280

training about about fifty percent of my

175

00:07:40,070 --> 00:07:36,560

training was out of the united states uh

176

00:07:41,830 --> 00:07:40,080

germany russia japan canada

177

00:07:43,589 --> 00:07:41,840

i've been actually globe trotting for

178

00:07:45,670 --> 00:07:43,599

the last three years traveling and

179

00:07:47,430 --> 00:07:45,680

training around the globe so i'm looking

180

00:07:49,909 --> 00:07:47,440

forward to being at home staying put for

181

00:07:53,189 --> 00:07:49,919

a little while and enjoying coffee out

182

00:07:58,629 --> 00:07:53,199

of a big coffee mug instead of

183

00:08:03,589 --> 00:08:00,790

okay commander fossum we only have about

184

00:08:06,550 --> 00:08:03,599

a minute so you have a quick message for

185

00:08:07,990 --> 00:08:06,560

your mom who's still here for students

186

00:08:09,589 --> 00:08:08,000

in the valley

187

00:08:11,029 --> 00:08:09,599

also here

188

00:08:12,309 --> 00:08:11,039

and um

189

00:08:16,390 --> 00:08:12,319

you know what would you like them to

190

00:08:20,629 --> 00:08:17,990

i'd like to say that the valley is a

191

00:08:23,270 --> 00:08:20,639

great place to use for your launch pad

192

00:08:25,670 --> 00:08:23,280

to whatever you dream about doing i grew

193

00:08:27,510 --> 00:08:25,680

up in the valley and i remember vividly

194

00:08:30,070 --> 00:08:27,520

i was about 12 years old camping with

195

00:08:32,070 --> 00:08:30,080

boy scouts on the shores of falcon lake

196

00:08:33,670 --> 00:08:32,080

and looking up at the stars way away

197

00:08:34,469 --> 00:08:33,680

from the city lights

198

00:08:35,670 --> 00:08:34,479

and

199

00:08:37,269 --> 00:08:35,680

feeling like the stars were

200

00:08:39,029 --> 00:08:37,279

three-dimensional that we were really in

201
00:08:40,709 --> 00:08:39,039
the middle of them and of course we

202
00:08:42,709 --> 00:08:40,719
really are in the middle of them and

203
00:08:44,870 --> 00:08:42,719
that ignited a dream in me that that

204
00:08:46,550 --> 00:08:44,880
that stayed with me all the way through

205
00:08:48,470 --> 00:08:46,560
school and through my professional

206
00:08:50,230 --> 00:08:48,480
career after that dreaming about maybe

207
00:08:52,550 --> 00:08:50,240
someday reaching out to those stars and

208
00:08:54,070 --> 00:08:52,560
being a little closer to them so i could

209
00:08:56,310 --> 00:08:54,080
feel like i'm really touching them and

210
00:08:58,470 --> 00:08:56,320
look out at them that was my dream but

211
00:08:59,509 --> 00:08:58,480
it doesn't matter what their dream might

212
00:09:08,389 --> 00:08:59,519
be

213
00:09:10,630 --> 00:09:08,399

little bit in the direction that you

214

00:09:13,670 --> 00:09:10,640

want to go every day because there is

215

00:09:17,670 --> 00:09:13,680

nothing impossible for any kid from the

216

00:09:24,870 --> 00:09:19,269

all right thank you so much commander

217

00:09:24,880 --> 00:09:28,630

thank you very much

218

00:09:33,910 --> 00:09:30,949

station this is houston acr that

219

00:09:36,230 --> 00:09:33,920

concludes the krg v tv portion of the

220

00:09:38,949 --> 00:09:36,240

event please stand by for a voice check

221

00:09:42,070 --> 00:09:38,959

from kveo tv

222

00:09:45,990 --> 00:09:42,080

station this is kveo tv how do you hear

223

00:09:50,150 --> 00:09:48,710

kveo tv this is mike fossum on the

224

00:09:51,590 --> 00:09:50,160

international space station i hear you

225

00:09:54,630 --> 00:09:51,600

loud and clear

226

00:09:56,550 --> 00:09:54,640

commander fossum hi from mcallen where

227

00:09:59,110 --> 00:09:56,560

i'm not now we just wanted to ask you

228

00:10:04,710 --> 00:09:59,120

first off tell us how the south texas

229

00:10:08,630 --> 00:10:06,710

you know actually in a lot of ways it

230

00:10:11,269 --> 00:10:08,640

shaped me for exactly what i'm doing now

231

00:10:12,870 --> 00:10:11,279

because i'm living on it you know living

232

00:10:15,030 --> 00:10:12,880

and working on the international space

233

00:10:17,030 --> 00:10:15,040

station with an international crew and

234

00:10:18,630 --> 00:10:17,040

growing up in the valley you get a sense

235

00:10:20,389 --> 00:10:18,640

of what it's like to live in an

236

00:10:22,630 --> 00:10:20,399

international environment with a lot of

237

00:10:24,150 --> 00:10:22,640

people with from different backgrounds

238

00:10:26,150 --> 00:10:24,160

you hear that you know you're used to

239

00:10:28,470 --> 00:10:26,160

hearing the different languages around

240

00:10:30,310 --> 00:10:28,480

you and you still listening to them and

241

00:10:32,470 --> 00:10:30,320

beginning to learn some of them

242

00:10:34,710 --> 00:10:32,480

it's been critical for me i wish that

243

00:10:36,710 --> 00:10:34,720

our our partners spoke spanish i'd be in

244

00:10:38,389 --> 00:10:36,720

a lot better shape but it helped me

245

00:10:39,590 --> 00:10:38,399

definitely in learning russian because

246

00:10:41,509 --> 00:10:39,600

i'm used to

247

00:10:43,590 --> 00:10:41,519

hearing and communicating in another

248

00:10:45,509 --> 00:10:43,600

language and working with people from a

249

00:10:47,350 --> 00:10:45,519

different culture and stuff and so that

250

00:10:48,710 --> 00:10:47,360

that became part of it and i think part

251
00:10:50,630 --> 00:10:48,720
of it too in the valley you have a

252
00:10:54,150 --> 00:10:50,640
little bit of a frontier mentality down

253
00:10:56,069 --> 00:10:54,160
there and of pushing the boundaries

254
00:10:58,230 --> 00:10:56,079
in a lot of different ways and i think

255
00:11:00,470 --> 00:10:58,240
that that is certainly true for what we

256
00:11:02,870 --> 00:11:00,480
do up here

257
00:11:04,790 --> 00:11:02,880
now i know as a child you are highly

258
00:11:06,710 --> 00:11:04,800
active in boy scouts down here in the

259
00:11:09,269 --> 00:11:06,720
valley now that's an organization that

260
00:11:11,670 --> 00:11:09,279
promotes curiosity ingenuity how much

261
00:11:17,030 --> 00:11:11,680
did that childhood experience push you

262
00:11:21,269 --> 00:11:19,430
i cannot personally say enough about the

263
00:11:22,870 --> 00:11:21,279

value of the boy scouting program it

264

00:11:23,590 --> 00:11:22,880

changed my life there's no doubt about

265

00:11:28,949 --> 00:11:23,600

it

266

00:11:30,710 --> 00:11:28,959

self-reliance learning how to take care

267

00:11:32,949 --> 00:11:30,720

of yourself and be comfortable and we

268

00:11:35,110 --> 00:11:32,959

teach that in the in the arena of the

269

00:11:38,150 --> 00:11:35,120

outdoors but it really applies to all of

270

00:11:40,150 --> 00:11:38,160

life it's about citizenship it's about

271

00:11:42,069 --> 00:11:40,160

first aid it's about taking care of

272

00:11:44,790 --> 00:11:42,079

yourself taking care of your friends

273

00:11:46,310 --> 00:11:44,800

being ready to respond in an emergency

274

00:11:48,870 --> 00:11:46,320

but really it's the confidence that

275

00:11:50,949 --> 00:11:48,880

comes from knowing i can handle this and

276

00:11:52,629 --> 00:11:50,959

a lot of things that i faced through my

277

00:11:54,949 --> 00:11:52,639

you know education and professional

278

00:11:57,110 --> 00:11:54,959

career i thought back on the days and

279

00:11:59,829 --> 00:11:57,120

and as a scout when i was tackling a

280

00:12:01,670 --> 00:11:59,839

mountain that was impossibly high for me

281

00:12:03,430 --> 00:12:01,680

over 12 000 feet

282

00:12:05,110 --> 00:12:03,440

high you know for a kid growing up in

283

00:12:06,870 --> 00:12:05,120

the valley that's that's an impossible

284

00:12:08,710 --> 00:12:06,880

kind of mountain and i didn't think i'd

285

00:12:10,470 --> 00:12:08,720

ever get to the top but you keep pushing

286

00:12:12,389 --> 00:12:10,480

and you help each other along and you

287

00:12:14,550 --> 00:12:12,399

find out you can do amazing things that

288

00:12:16,870 --> 00:12:14,560

you didn't dream about

289

00:12:18,870 --> 00:12:16,880

now it's a risky job being in space but

290

00:12:21,269 --> 00:12:18,880

i know the information and the science

291

00:12:23,350 --> 00:12:21,279

you bring back is tremendous can you

292

00:12:29,829 --> 00:12:23,360

talk about the risk you know in learning

293

00:12:33,670 --> 00:12:32,069

there is some risk associated with with

294

00:12:35,110 --> 00:12:33,680

traveling in space there's a big risk

295

00:12:36,870 --> 00:12:35,120

associated with a launch when you're

296

00:12:39,430 --> 00:12:36,880

harnessing you know millions of pounds

297

00:12:41,509 --> 00:12:39,440

of thrust to push you off the planet and

298

00:12:42,310 --> 00:12:41,519

take you from sitting still on a launch

299

00:12:43,430 --> 00:12:42,320

pad

300

00:12:44,949 --> 00:12:43,440

to

301

00:12:46,870 --> 00:12:44,959

nine minutes later

302

00:12:49,350 --> 00:12:46,880

being in orbit literally nine minutes

303

00:12:51,829 --> 00:12:49,360

later you're going over 17 000 miles an

304

00:12:53,990 --> 00:12:51,839

hour that's one heck of a lot of energy

305

00:12:56,629 --> 00:12:54,000

and there's a you know you're a little

306

00:12:58,629 --> 00:12:56,639

concerned that this great big explosion

307

00:13:00,629 --> 00:12:58,639

is going on behind you that's shoving

308

00:13:02,069 --> 00:13:00,639

you off of the planet living up here

309

00:13:04,150 --> 00:13:02,079

there's risks associated with being up

310

00:13:06,150 --> 00:13:04,160

here too there's there's radiation risk

311

00:13:08,230 --> 00:13:06,160

there's micro meteorite or orbital

312

00:13:10,150 --> 00:13:08,240

debris hitting the space station is one

313

00:13:11,990 --> 00:13:10,160

of the risks we train for there's the

314

00:13:15,190 --> 00:13:12,000

technical risks inside

315

00:13:17,590 --> 00:13:15,200

fires toxic spills we train train train

316

00:13:19,670 --> 00:13:17,600

we're always working to on those things

317

00:13:21,910 --> 00:13:19,680

and to to minimize the risk

318

00:13:23,910 --> 00:13:21,920

in the design and then to be ready to

319

00:13:25,829 --> 00:13:23,920

respond if we need to

320

00:13:27,829 --> 00:13:25,839

why why do we do all this it's because

321

00:13:29,670 --> 00:13:27,839

it's part of exploration the space

322

00:13:32,230 --> 00:13:29,680

station is the world's premier

323

00:13:34,790 --> 00:13:32,240

laboratory we can investigate things

324

00:13:36,470 --> 00:13:34,800

here that cannot be investigated in the

325

00:13:39,509 --> 00:13:36,480

presence of the gravity field sitting

326

00:13:40,710 --> 00:13:39,519

still on earth the the solidification of

327

00:13:43,829 --> 00:13:40,720

materials

328

00:13:46,069 --> 00:13:43,839

exotic metals and and as they are melted

329

00:13:48,870 --> 00:13:46,079

in furnaces and then cooled in certain

330

00:13:51,430 --> 00:13:48,880

ways and on the ground there's currents

331

00:13:52,710 --> 00:13:51,440

that arise in the molten metal or

332

00:13:55,110 --> 00:13:52,720

materials

333

00:13:57,990 --> 00:13:55,120

just from the gravity where the the the

334

00:13:59,910 --> 00:13:58,000

hotter stuff rises to the top

335

00:14:02,949 --> 00:13:59,920

and that causes a mixing here you get

336

00:14:05,750 --> 00:14:02,959

pure very pure crystals out of those

337

00:14:07,750 --> 00:14:05,760

kinds of experiments we're doing flame

338

00:14:09,910 --> 00:14:07,760

combustion experiments where you don't

339

00:14:12,949 --> 00:14:09,920

have the the the presence of the

340

00:14:13,990 --> 00:14:12,959

convective forces on earth when the

341

00:14:17,269 --> 00:14:14,000

the

342

00:14:19,990 --> 00:14:17,279

air around a flame heats up it rises

343

00:14:23,269 --> 00:14:20,000

that's what pulls the camera or the the

344

00:14:25,269 --> 00:14:23,279

candle uh flame into a taper

345

00:14:27,110 --> 00:14:25,279

up here flames are round and they tend

346

00:14:28,629 --> 00:14:27,120

to be a little dim and orange because

347

00:14:31,269 --> 00:14:28,639

you're not getting that infusion of

348

00:14:33,430 --> 00:14:31,279

oxygen and you can study the physics of

349

00:14:34,870 --> 00:14:33,440

combustion in a way that you can't do on

350

00:14:37,350 --> 00:14:34,880

the ground and if we could figure out

351

00:14:40,790 --> 00:14:37,360

how to make a combustion process a

352

00:14:42,870 --> 00:14:40,800

burner a heater just half a percent more

353

00:14:45,990 --> 00:14:42,880

effective we would be saving billions of

354

00:14:48,949 --> 00:14:46,000

dollars in energy costs around the globe

355

00:14:51,030 --> 00:14:48,959

that's the kind of things that drive us

356

00:14:52,790 --> 00:14:51,040

that's great now you're not up there

357

00:14:56,150 --> 00:14:52,800

alone you're up there with uh sergey

358

00:14:57,910 --> 00:14:56,160

volkov and uh sawatashi furukawa talk to

359

00:15:03,750 --> 00:14:57,920

me be honest you know how is it up there

360

00:15:08,629 --> 00:15:05,990

oh we all we all bring our own funny

361

00:15:11,509 --> 00:15:08,639

living habits because you know to uh to

362

00:15:12,470 --> 00:15:11,519

a china or to a japanese guy and a

363

00:15:15,350 --> 00:15:12,480

russian

364

00:15:18,069 --> 00:15:15,360

the you know americans seem funny and

365

00:15:20,870 --> 00:15:18,079

you know vice versa and so we're really

366

00:15:22,470 --> 00:15:20,880

we're we're like brothers from around

367

00:15:25,350 --> 00:15:22,480

the globe from different corners of the

368

00:15:27,269 --> 00:15:25,360

globe i really enjoy sitting on them and

369

00:15:28,949 --> 00:15:27,279

and we sit in the evening we we're

370

00:15:31,269 --> 00:15:28,959

pretty busy most of the day we usually

371

00:15:33,670 --> 00:15:31,279

get together for a quick lunch and then

372

00:15:35,749 --> 00:15:33,680

in the evening it we we spend an hour or

373

00:15:38,069 --> 00:15:35,759

so over dinner and we talk about things

374

00:15:40,069 --> 00:15:38,079

we talk about our university uh you know

375

00:15:42,550 --> 00:15:40,079

our growing up experiences our college

376

00:15:43,910 --> 00:15:42,560

experiences our military experiences and

377

00:15:46,389 --> 00:15:43,920

those kind of things and it's just

378

00:15:48,870 --> 00:15:46,399

fascinating to learn from each other and

379

00:15:50,550 --> 00:15:48,880

really uh to become you know bonded

380

00:15:51,829 --> 00:15:50,560

together because our lives depend on

381

00:15:53,509 --> 00:15:51,839

each other so we're more than just

382

00:15:55,189 --> 00:15:53,519

crewmates we're friends

383

00:15:57,269 --> 00:15:55,199

right and you know with the ending of

384

00:15:59,110 --> 00:15:57,279

the space program tell me a little bit

385

00:16:03,670 --> 00:15:59,120

about you know what are the future plans

386

00:16:08,230 --> 00:16:05,670

well nasa's plans for the immediate

387

00:16:09,829 --> 00:16:08,240

future for the next 10 years are to

388

00:16:10,629 --> 00:16:09,839

continue

389

00:16:12,629 --> 00:16:10,639

to

390

00:16:13,910 --> 00:16:12,639

staff and maintain the international

391

00:16:15,430 --> 00:16:13,920

space station

392

00:16:17,269 --> 00:16:15,440

it's kind of a

393

00:16:19,590 --> 00:16:17,279

misnomer that the space program has

394

00:16:21,749 --> 00:16:19,600

ended the space shuttle program has

395

00:16:24,069 --> 00:16:21,759

ended that's just one program out of

396

00:16:26,389 --> 00:16:24,079

several we've had through the years

397

00:16:27,749 --> 00:16:26,399

it's it's a little hard to just wrap our

398

00:16:31,030 --> 00:16:27,759

brains around right now because the

399

00:16:33,670 --> 00:16:31,040

shuttle program was flying for 30 years

400

00:16:36,150 --> 00:16:33,680

so most of america knows

401
00:16:38,470 --> 00:16:36,160
our country as a space faring nation and

402
00:16:40,710 --> 00:16:38,480
that means the space shuttle the space

403
00:16:42,629 --> 00:16:40,720
shuttle's program is done its mission is

404
00:16:45,110 --> 00:16:42,639
complete and now they're being prepared

405
00:16:46,870 --> 00:16:45,120
to go to museums around the country

406
00:16:49,670 --> 00:16:46,880
there's a number of different programs

407
00:16:52,150 --> 00:16:49,680
in work right now to develop commercial

408
00:16:53,670 --> 00:16:52,160
vehicles first for cargo because the

409
00:16:56,710 --> 00:16:53,680
space shuttle brought a tremendous

410
00:16:58,790 --> 00:16:56,720
amount of cargo up with each flight

411
00:17:01,430 --> 00:16:58,800
so the commercial vehicles trying to

412
00:17:04,150 --> 00:17:01,440
get a cargo capability for the space

413
00:17:05,110 --> 00:17:04,160

station and they're working very quickly

414

00:17:07,510 --> 00:17:05,120

to uh

415

00:17:09,829 --> 00:17:07,520

go beyond that to carrying humans so

416

00:17:12,230 --> 00:17:09,839

we're going to continue

417

00:17:14,390 --> 00:17:12,240

in one of these arenas to continue

418

00:17:16,710 --> 00:17:14,400

flying americans to space right now i

419

00:17:18,710 --> 00:17:16,720

flew up on a russian rocket four months

420

00:17:21,669 --> 00:17:18,720

ago and i'll be returning on the russian

421

00:17:23,110 --> 00:17:21,679

spacecraft uh just before thanksgiving

422

00:17:25,350 --> 00:17:23,120

and that's what we'll be using for the

423

00:17:27,429 --> 00:17:25,360

next uh the next few years but it won't

424

00:17:29,110 --> 00:17:27,439

be long i believe until we have an amer

425

00:17:31,590 --> 00:17:29,120

another american rocket capable of

426
00:17:33,750 --> 00:17:31,600
carrying humans to and from space first

427
00:17:36,150 --> 00:17:33,760
to the space station we're talking about

428
00:17:38,789 --> 00:17:36,160
sending humans to an asteroid i have no

429
00:17:41,270 --> 00:17:38,799
doubt there'll be human footprints on

430
00:17:43,350 --> 00:17:41,280
back on the moon again and on mars

431
00:17:45,510 --> 00:17:43,360
within our lifetimes and i can't wait to

432
00:17:47,590 --> 00:17:45,520
see it well that's interesting to hear

433
00:17:49,990 --> 00:17:47,600
and i know you like you said are coming

434
00:17:51,750 --> 00:17:50,000
back on november 22nd you'll be

435
00:17:57,270 --> 00:17:51,760
returning home what are your thoughts on

436
00:18:01,909 --> 00:17:59,110
i am looking forward to being home i've

437
00:18:03,750 --> 00:18:01,919
been gone for four months up here and a

438
00:18:05,669 --> 00:18:03,760

couple of months before that for final

439

00:18:08,070 --> 00:18:05,679

training and preparation in russia

440

00:18:09,510 --> 00:18:08,080

before uh launching i'm definitely

441

00:18:11,350 --> 00:18:09,520

looking forward to being home i've been

442

00:18:14,150 --> 00:18:11,360

training in russia for the last two

443

00:18:15,990 --> 00:18:14,160

thanksgivings in a row so i'm i look

444

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

forward to being home with my whole

445

00:18:20,710 --> 00:18:18,480

family at thanksgiving time at the same

446

00:18:22,950 --> 00:18:20,720

time at the same time this has been an

447

00:18:24,950 --> 00:18:22,960

awesome experience i don't feel like

448

00:18:26,470 --> 00:18:24,960

today i'm not ready to go i have a lot

449

00:18:28,470 --> 00:18:26,480

of work yet to do

450

00:18:30,950 --> 00:18:28,480

and a lot of things i want to see and

451
00:18:33,590 --> 00:18:30,960
accomplish yet up here but in six weeks

452
00:18:34,789 --> 00:18:33,600
when it's time to go home i'll be ready

453
00:18:36,549 --> 00:18:34,799
you know you're definitely a man that

454
00:18:38,470 --> 00:18:36,559
goes after his dreams you know many

455
00:18:40,390 --> 00:18:38,480
times kids start that process but they

456
00:18:43,029 --> 00:18:40,400
don't follow through and continue that

457
00:18:44,630 --> 00:18:43,039
pursuit what advice can you give valley

458
00:18:46,950 --> 00:18:44,640
youth and the young adults here in the

459
00:18:51,750 --> 00:18:46,960
valley about following their following

460
00:18:54,710 --> 00:18:53,110
absolutely

461
00:18:57,510 --> 00:18:54,720
it's critical to believe that your

462
00:18:59,909 --> 00:18:57,520
dreams can come true

463
00:19:02,070 --> 00:18:59,919

and and they can i grew up in the early

464

00:19:04,150 --> 00:19:02,080

days of the space program watching our

465

00:19:06,870 --> 00:19:04,160

steps as we moved toward the moon and

466

00:19:08,310 --> 00:19:06,880

and remembered the first moon landing

467

00:19:10,150 --> 00:19:08,320

it was a

468

00:19:11,990 --> 00:19:10,160

few months after that with boy scouts i

469

00:19:14,630 --> 00:19:12,000

was camping at falcon lake i remember

470

00:19:16,310 --> 00:19:14,640

this night vividly out away from you

471

00:19:19,270 --> 00:19:16,320

know most of the lights it's a very dark

472

00:19:21,270 --> 00:19:19,280

part of the the valley and sitting on a

473

00:19:23,029 --> 00:19:21,280

hillside out there

474

00:19:24,870 --> 00:19:23,039

after the evening campfire just looking

475

00:19:26,710 --> 00:19:24,880

up into the sky until you feel like

476

00:19:29,190 --> 00:19:26,720

you're in the middle of the stars and i

477

00:19:30,870 --> 00:19:29,200

really did feel like that and indeed the

478

00:19:32,789 --> 00:19:30,880

earth is in the middle of the stars

479

00:19:34,390 --> 00:19:32,799

because the milky way becomes bright you

480

00:19:35,990 --> 00:19:34,400

can see all these things

481

00:19:37,750 --> 00:19:36,000

and i just dreamed about you know what

482

00:19:39,270 --> 00:19:37,760

if could i really go out there could

483

00:19:40,870 --> 00:19:39,280

this be possible

484

00:19:42,630 --> 00:19:40,880

and you know part of me didn't believe

485

00:19:44,150 --> 00:19:42,640

that it was even possible and a lot of

486

00:19:45,830 --> 00:19:44,160

people didn't believe that these kind of

487

00:19:47,350 --> 00:19:45,840

things could really happen to some you

488

00:19:49,750 --> 00:19:47,360

know boy from the valley but i'll tell

489

00:19:51,750 --> 00:19:49,760

you what those dreams can come true you

490

00:19:53,669 --> 00:19:51,760

have to believe and then work at it

491

00:19:55,590 --> 00:19:53,679

don't just dream because dreaming is

492

00:19:56,630 --> 00:19:55,600

easy the hard part comes when you're

493

00:20:00,230 --> 00:19:56,640

putting the

494

00:20:02,230 --> 00:20:00,240

your shoulder into it and you're pushing

495

00:20:03,990 --> 00:20:02,240

working in school working in the jobs

496

00:20:04,710 --> 00:20:04,000

beyond that to be the best that you can

497

00:20:07,029 --> 00:20:04,720

be

498

00:20:08,789 --> 00:20:07,039

and it was it was not a sure thing that

499

00:20:11,190 --> 00:20:08,799

i was going to get here this was a long

500

00:20:12,710 --> 00:20:11,200

road and i i had a lot of adventures

501
00:20:14,390 --> 00:20:12,720
along the way i had disappointments

502
00:20:16,870 --> 00:20:14,400
along the way it wasn't a direct path

503
00:20:19,669 --> 00:20:16,880
for me but i believed and i kept working

504
00:20:20,710 --> 00:20:19,679
in that direction and i enjoyed the ride

505
00:20:23,270 --> 00:20:20,720
too

506
00:20:24,070 --> 00:20:23,280
all of the journey was a great adventure

507
00:20:30,230 --> 00:20:24,080
of

508
00:20:32,630 --> 00:20:30,240
you know moves and opportunities

509
00:20:34,230 --> 00:20:32,640
along the way and i'm really blessed

510
00:20:36,070 --> 00:20:34,240
with the family that has supported me

511
00:20:37,590 --> 00:20:36,080
through all of this and so it's been a

512
00:20:38,950 --> 00:20:37,600
it's been a real blessing and answer to

513
00:20:41,510 --> 00:20:38,960

a lot of prayers and i'm definitely

514

00:20:43,110 --> 00:20:41,520

living my dream now and if i can do it

515

00:20:45,669 --> 00:20:43,120

again i grew up right there in the

516

00:20:47,990 --> 00:20:45,679

valley just like everybody else my first

517

00:20:50,789 --> 00:20:48,000

paying job was on literally on an orange

518

00:20:53,110 --> 00:20:50,799

picking crew for 25 cents a bushel

519

00:20:54,710 --> 00:20:53,120

if i can move up from orange picken

520

00:20:56,710 --> 00:20:54,720

to the be the commander of the

521

00:20:58,549 --> 00:20:56,720

international space station

522

00:21:00,230 --> 00:20:58,559

anybody can do it

523

00:21:01,990 --> 00:21:00,240

well mike i have to say your story is

524

00:21:03,750 --> 00:21:02,000

incredible i hope you know the valley

525

00:21:05,270 --> 00:21:03,760

supports you i could see it in the eyes

526

00:21:07,430 --> 00:21:05,280

of the teenagers at the hez tech

527

00:21:08,789 --> 00:21:07,440

convention two weeks ago and let's face

528

00:21:10,310 --> 00:21:08,799

it if you can capture the love and

529

00:21:12,549 --> 00:21:10,320

interest of teenagers you can do

530

00:21:14,789 --> 00:21:12,559

anything right so on that note thanks

531

00:21:21,669 --> 00:21:14,799

again good luck and safe travels from

532

00:21:29,110 --> 00:21:24,549

kveo newscenter 23 thanks a bunch it's

533

00:21:34,789 --> 00:21:31,909

station this is houston acr thank you

534

00:21:38,950 --> 00:21:34,799

that concludes the event