



1
00:00:10,549 --> 00:00:04,950
station this is houston on two are you

2
00:00:16,189 --> 00:00:11,910
station at space to ground to we are

3
00:00:21,029 --> 00:00:18,550
jscpao this is houston please call

4
00:00:23,670 --> 00:00:21,039
station for a voice check

5
00:00:27,029 --> 00:00:23,680
station this is jscpao how do you hear

6
00:00:31,109 --> 00:00:29,429
we've got you loud and clear

7
00:00:32,630 --> 00:00:31,119
all right sounds great we'll start with

8
00:00:38,310 --> 00:00:32,640
some questions from reporters here at

9
00:00:42,549 --> 00:00:40,150
uh thank you good morning this is uh

10
00:00:44,150 --> 00:00:42,559
mark caro for aviation week and space

11
00:00:47,670 --> 00:00:44,160
technology

12
00:00:49,110 --> 00:00:47,680
i have a question for don pettit

13
00:00:50,790 --> 00:00:49,120

right now it looks like there'll be

14

00:00:52,790 --> 00:00:50,800

three of you on the

15

00:00:54,950 --> 00:00:52,800

space station for the track and capture

16

00:00:57,110 --> 00:00:54,960

of dragon if the launch

17

00:00:59,349 --> 00:00:57,120

unfolds as planned

18

00:01:03,349 --> 00:00:59,359

i wonder if you could sort of describe

19

00:01:05,910 --> 00:01:03,359

the preparations that you're making um

20

00:01:07,510 --> 00:01:05,920

for that and whether you were the lead

21

00:01:11,429 --> 00:01:07,520

for the track and capture as you

22

00:01:14,710 --> 00:01:12,469

uh

23

00:01:18,390 --> 00:01:14,720

for track and capture we're just now

24

00:01:20,870 --> 00:01:18,400

starting to get uh up to speed on uh

25

00:01:23,510 --> 00:01:20,880

training for this event and

26

00:01:26,950 --> 00:01:23,520

we have a two primary means of training

27

00:01:29,749 --> 00:01:26,960

we fly the actual arm which is the

28

00:01:33,830 --> 00:01:29,759

world's best trainer for flying the arm

29

00:01:35,270 --> 00:01:33,840

and then right here we've got uh two

30

00:01:38,310 --> 00:01:35,280

two uh

31

00:01:42,870 --> 00:01:38,320

space station computers which uh double

32

00:01:45,910 --> 00:01:42,880

as a arm simulator and and we have a

33

00:01:47,670 --> 00:01:45,920

full set of uh actual arm hand

34

00:01:48,870 --> 00:01:47,680

controllers here

35

00:01:51,749 --> 00:01:48,880

and

36

00:01:54,630 --> 00:01:51,759

with this setup we call it robot

37

00:01:55,749 --> 00:01:54,640

and it allows us to

38

00:01:58,149 --> 00:01:55,759

fly

39

00:01:59,429 --> 00:01:58,159

uh track and capture trajectories just

40

00:02:01,510 --> 00:01:59,439

like we would if we were in the

41

00:02:04,310 --> 00:02:01,520

simulators back in houston so it's a

42

00:02:06,550 --> 00:02:04,320

really neat capability and and i have it

43

00:02:08,309 --> 00:02:06,560

set up now all the time and so i'll wake

44

00:02:11,510 --> 00:02:08,319

up in the morning and have a bag of

45

00:02:13,990 --> 00:02:11,520

coffee and i'll be uh flying a dragon

46

00:02:16,790 --> 00:02:14,000

track and captures uh with a bag of

47

00:02:19,430 --> 00:02:16,800

coffee in my mouth and and uh

48

00:02:22,630 --> 00:02:19,440

uh cinnamon scone in one hand and uh the

49

00:02:23,830 --> 00:02:22,640

hand controllers uh and it's uh it's

50

00:02:26,309 --> 00:02:23,840

it's good to have this kind of

51

00:02:28,949 --> 00:02:26,319

capability

52

00:02:30,790 --> 00:02:28,959

for the actual event will you be uh in

53

00:02:33,350 --> 00:02:30,800

the cupola or

54

00:02:35,350 --> 00:02:33,360

in the destiny lab i'm not quite sure

55

00:02:39,670 --> 00:02:35,360

and could you sort of explain andre's

56

00:02:45,350 --> 00:02:42,869

sure initially it was going to be

57

00:02:47,270 --> 00:02:45,360

dan burbank is prime arm our operator

58

00:02:50,630 --> 00:02:47,280

and i would be what we call second arm

59

00:02:53,030 --> 00:02:50,640

operator and andre would be visiting

60

00:02:54,869 --> 00:02:53,040

vehicle officer and we each have

61

00:02:57,270 --> 00:02:54,879

different roles and the three of us were

62

00:02:59,830 --> 00:02:57,280

going to be doing the

63

00:03:01,589 --> 00:02:59,840

track and capture for dragon

64

00:03:05,030 --> 00:03:01,599

now that the the dragon launch was

65

00:03:07,350 --> 00:03:05,040

delayed uh dan's going to be gone and

66

00:03:10,869 --> 00:03:07,360

only be three of us up here and it will

67

00:03:14,070 --> 00:03:10,879

just be andre and myself doing uh

68

00:03:14,949 --> 00:03:14,080

all the things that uh dan andre and me

69

00:03:16,630 --> 00:03:14,959

were

70

00:03:19,350 --> 00:03:16,640

originally trained to do

71

00:03:22,550 --> 00:03:19,360

and we will be in the cupola

72

00:03:25,910 --> 00:03:22,560

and i will be a prime mom operator and

73

00:03:27,750 --> 00:03:25,920

andre will be second arm operator and we

74

00:03:30,390 --> 00:03:27,760

will have the robotics workstation in

75

00:03:32,710 --> 00:03:30,400

the lab set up and ready to go as what

76

00:03:35,430 --> 00:03:32,720

we refer to as a hot backup

77

00:03:37,830 --> 00:03:35,440

for contingencies that may lock up the

78

00:03:38,869 --> 00:03:37,840

controls for flying the arm

79

00:03:41,750 --> 00:03:38,879

right when you're in the middle of a

80

00:03:45,350 --> 00:03:41,760

dragon capture so we've got training and

81

00:03:48,390 --> 00:03:45,360

procedures for quickly flying to the lab

82

00:03:50,390 --> 00:03:48,400

and activating the robotics workstation

83

00:03:55,030 --> 00:03:50,400

and taking over the flying from the lab

84

00:03:58,229 --> 00:03:56,869

okay well next i believe we have some

85

00:04:00,229 --> 00:03:58,239

questions coming in from the phone

86

00:04:04,229 --> 00:04:00,239

bridge first up we'll have jill told

87

00:04:08,869 --> 00:04:06,869

yes this is jill polk representing the

88

00:04:11,589 --> 00:04:08,879

registered newspaper in yarmouth port

89

00:04:13,350 --> 00:04:11,599

massachusetts so dan you well know this

90

00:04:16,310 --> 00:04:13,360

question will be for you

91

00:04:18,310 --> 00:04:16,320

in february i got to visit some towns on

92

00:04:21,030 --> 00:04:18,320

the south shore of boston and i stayed

93

00:04:23,990 --> 00:04:21,040

only 15 miles from plymouth the pilgrims

94

00:04:27,189 --> 00:04:24,000

first stepping stone into the new world

95

00:04:29,430 --> 00:04:27,199

on that note during the past few months

96

00:04:31,510 --> 00:04:29,440

what new massachusetts anecdotes have

97

00:04:33,270 --> 00:04:31,520

you collected and what thoughts or

98

00:04:35,110 --> 00:04:33,280

feelings would you like to share with

99

00:04:41,350 --> 00:04:35,120

the residents of your adopted hometown

100

00:04:44,550 --> 00:04:43,110

jill it's great to talk to you and uh

101
00:04:47,270 --> 00:04:44,560
and welcome aboard the international

102
00:04:49,670 --> 00:04:47,280
space station or at least virtually um i

103
00:04:51,749 --> 00:04:49,680
think i i think for us on board here

104
00:04:54,310 --> 00:04:51,759
it's uh it's a

105
00:04:55,830 --> 00:04:54,320
a kind of a a very good metaphor which

106
00:04:58,710 --> 00:04:55,840
you just mentioned you know in the way

107
00:05:01,990 --> 00:04:58,720
that uh plymouth uh in plymouth rock uh

108
00:05:03,270 --> 00:05:02,000
represented uh the founding um of of the

109
00:05:05,029 --> 00:05:03,280
new world from

110
00:05:07,749 --> 00:05:05,039
from the perspective of european

111
00:05:09,990 --> 00:05:07,759
settlers in in a very real way i think

112
00:05:11,830 --> 00:05:10,000
the international space station with the

113
00:05:13,110 --> 00:05:11,840

international partnership that makes all

114

00:05:15,270 --> 00:05:13,120

this possible

115

00:05:17,270 --> 00:05:15,280

is in a sense

116

00:05:19,029 --> 00:05:17,280

the first major stepping stone that will

117

00:05:21,350 --> 00:05:19,039

help us leave

118

00:05:23,430 --> 00:05:21,360

planet earth and ultimately leave low

119

00:05:25,590 --> 00:05:23,440

earth orbit and go to the moon asteroids

120

00:05:26,629 --> 00:05:25,600

and mars and the kind of science we're

121

00:05:28,870 --> 00:05:26,639

doing up here i think is really

122

00:05:31,590 --> 00:05:28,880

important to that um regarding

123

00:05:33,909 --> 00:05:31,600

massachusetts and new england uh my my

124

00:05:36,390 --> 00:05:33,919

uh my home if you will

125

00:05:38,310 --> 00:05:36,400

we feel uh very connected i think in a

126

00:05:40,710 --> 00:05:38,320

lot of ways to all the different places

127

00:05:43,110 --> 00:05:40,720

that that that all of us have touched or

128

00:05:45,430 --> 00:05:43,120

have touched us around the world and you

129

00:05:47,110 --> 00:05:45,440

get to see it in a very very personal

130

00:05:49,430 --> 00:05:47,120

way looking out uh the windows in the

131

00:05:50,870 --> 00:05:49,440

cupola or the uh the great windows in

132

00:05:52,870 --> 00:05:50,880

the service module or here in the

133

00:05:55,430 --> 00:05:52,880

laboratory and

134

00:05:58,309 --> 00:05:55,440

uh it was a couple of weeks ago when

135

00:06:00,390 --> 00:05:58,319

we had don had dusted off a lens that we

136

00:06:03,189 --> 00:06:00,400

have on board here that hasn't got a lot

137

00:06:05,909 --> 00:06:03,199

of use recently it's a fisheye lens and

138

00:06:07,990 --> 00:06:05,919

there was a really neat opportunity to

139

00:06:11,350 --> 00:06:08,000

to basically set that up in the cupola

140

00:06:14,230 --> 00:06:11,360

and give essentially 180 degree or 360

141

00:06:16,309 --> 00:06:14,240

degree views of the entire uh earth

142

00:06:19,189 --> 00:06:16,319

beneath us horizon to horizon and there

143

00:06:20,870 --> 00:06:19,199

was one really neat shot that actually

144

00:06:22,790 --> 00:06:20,880

was centered directly on cape cod and

145

00:06:25,029 --> 00:06:22,800

you could see from cape cod all the way

146

00:06:26,469 --> 00:06:25,039

uh to boston you could see off to the uh

147

00:06:29,189 --> 00:06:26,479

to the western edge of that view

148

00:06:32,469 --> 00:06:29,199

connecticut and kind of in one shot in

149

00:06:34,150 --> 00:06:32,479

uh just one uh 50th of a second it sort

150

00:06:36,070 --> 00:06:34,160

of captured all the places that at least

151
00:06:39,110 --> 00:06:36,080
when i was growing up were near and dear

152
00:06:43,909 --> 00:06:41,830
great thanks for the good words dawn you

153
00:06:46,870 --> 00:06:43,919
know that i also represent the appeal

154
00:06:49,110 --> 00:06:46,880
tribune in silverton oregon i'm actually

155
00:06:51,350 --> 00:06:49,120
in los angeles california right now flew

156
00:06:53,909 --> 00:06:51,360
into the burbank airport yesterday so

157
00:06:55,990 --> 00:06:53,919
i'm next door to oregon so what new

158
00:06:57,510 --> 00:06:56,000
oregon anecdotes have you collected and

159
00:07:00,070 --> 00:06:57,520
what thoughts or feelings would you like

160
00:07:03,990 --> 00:07:00,080
to share with all the folks back in

161
00:07:09,029 --> 00:07:05,990
well oregon

162
00:07:11,670 --> 00:07:09,039
is currently being very oregon

163
00:07:14,790 --> 00:07:11,680

and the passes that we've had with space

164

00:07:16,469 --> 00:07:14,800

station you look down at oregon and you

165

00:07:19,510 --> 00:07:16,479

see clouds

166

00:07:21,670 --> 00:07:19,520

and that's just the way it's supposed to

167

00:07:24,070 --> 00:07:21,680

be and that's what makes it near and

168

00:07:26,469 --> 00:07:24,080

dear to my heart because that's also the

169

00:07:28,469 --> 00:07:26,479

key to making everything green which of

170

00:07:30,629 --> 00:07:28,479

course does not apply as soon as you get

171

00:07:33,189 --> 00:07:30,639

to eastern oregon with a rain shadow

172

00:07:41,830 --> 00:07:33,199

from the cascade mountains and then then

173

00:07:48,309 --> 00:07:44,790

all right thanks so much

174

00:07:49,990 --> 00:07:48,319

okay next up we have marcia dunn

175

00:07:52,950 --> 00:07:50,000

yes good morning gentlemen from the

176

00:07:54,950 --> 00:07:52,960

kennedy space center uh first for you dr

177

00:07:56,790 --> 00:07:54,960

pettit you'll be the one reeling in the

178

00:07:58,550 --> 00:07:56,800

dragon capsule

179

00:08:01,350 --> 00:07:58,560

talk about the importance of this

180

00:08:03,110 --> 00:08:01,360

inaugural commercial cargo run perhaps

181

00:08:08,629 --> 00:08:03,120

compare it to something in history that

182

00:08:12,550 --> 00:08:10,150

well i i think

183

00:08:14,710 --> 00:08:12,560

you folks on the ground probably are

184

00:08:16,790 --> 00:08:14,720

more in touch with any historical

185

00:08:19,670 --> 00:08:16,800

perspective and and what the meaning of

186

00:08:22,869 --> 00:08:19,680

all of this is from a crew perspective

187

00:08:25,670 --> 00:08:22,879

we we have a very operational oriented

188

00:08:28,230 --> 00:08:25,680

task that we are doing intensive

189

00:08:31,430 --> 00:08:28,240

training now so that

190

00:08:34,709 --> 00:08:31,440

we can get this task done expertly and

191

00:08:37,110 --> 00:08:34,719

andre and i will be doing this task and

192

00:08:39,029 --> 00:08:37,120

will be sharing the robotics duties for

193

00:08:42,070 --> 00:08:39,039

flying the arm

194

00:08:43,269 --> 00:08:42,080

from capture to ultimately birthing it

195

00:08:48,150 --> 00:08:43,279

on to

196

00:08:52,710 --> 00:08:50,389

for either you dr peck are you commander

197

00:08:54,710 --> 00:08:52,720

burbank or both of you perhaps discovery

198

00:08:56,550 --> 00:08:54,720

is about the ship out to washington in

199

00:08:58,470 --> 00:08:56,560

another few weeks

200

00:09:00,550 --> 00:08:58,480

your thoughts on the shuttle's departure

201
00:09:03,590 --> 00:09:00,560
from its home base for more than 30

202
00:09:05,509 --> 00:09:03,600
years and how strange or odd is it for

203
00:09:07,590 --> 00:09:05,519
you both to

204
00:09:17,670 --> 00:09:07,600
have flown on something that's now being

205
00:09:20,470 --> 00:09:19,190
most of the most of the airplanes that

206
00:09:23,350 --> 00:09:20,480
i've flown

207
00:09:24,870 --> 00:09:23,360
are also swim museums uh marcia but i

208
00:09:26,949 --> 00:09:24,880
don't necessarily think that's a bad

209
00:09:28,710 --> 00:09:26,959
thing now the shuttle did what the

210
00:09:29,910 --> 00:09:28,720
shuttle was best designed for and it

211
00:09:32,150 --> 00:09:29,920
brought up some spectacular

212
00:09:33,910 --> 00:09:32,160
observatories into space and uh some

213
00:09:36,470 --> 00:09:33,920

satellites and it helped build this

214

00:09:37,670 --> 00:09:36,480

nearly one million pound world-class uh

215

00:09:40,230 --> 00:09:37,680

laboratory that we have the great

216

00:09:43,430 --> 00:09:40,240

privilege of of working and living

217

00:09:44,389 --> 00:09:43,440

aboard uh for six months and um and i

218

00:09:46,150 --> 00:09:44,399

think

219

00:09:48,550 --> 00:09:46,160

having the shuttles the space shuttles

220

00:09:49,910 --> 00:09:48,560

in museums where people can come and see

221

00:09:51,750 --> 00:09:49,920

them and learn about them and learn

222

00:09:53,829 --> 00:09:51,760

about the wonderful technology i think

223

00:09:54,870 --> 00:09:53,839

it'll be a good thing and

224

00:09:57,110 --> 00:09:54,880

and i think

225

00:09:59,990 --> 00:09:57,120

that from a budgetary standpoint is

226
00:10:02,310 --> 00:10:00,000
going to help give nasa the wherewithal

227
00:10:04,550 --> 00:10:02,320
to build and design the next vehicles

228
00:10:06,310 --> 00:10:04,560
and i think for us i think the big key

229
00:10:08,069 --> 00:10:06,320
part of that is getting heavy lift

230
00:10:09,990 --> 00:10:08,079
capability that can get us into low

231
00:10:12,310 --> 00:10:10,000
earth orbit with vehicles that we could

232
00:10:29,910 --> 00:10:12,320
take beyond low earth orbit

233
00:10:29,920 --> 00:10:36,150
okay and next we have suzanne presto

234
00:10:38,470 --> 00:10:37,590
hello and thanks for having me good

235
00:10:40,470 --> 00:10:38,480
morning

236
00:10:42,470 --> 00:10:40,480
um my question is about the upcoming

237
00:10:44,389 --> 00:10:42,480
international space apps challenge i was

238
00:10:55,509 --> 00:10:44,399

wondering what your plans are up there

239

00:11:00,790 --> 00:10:57,990

and and i'll tell you i i

240

00:11:03,829 --> 00:11:00,800

i have to admit i don't know much about

241

00:11:06,310 --> 00:11:03,839

it and frankly from my perspective uh my

242

00:11:07,990 --> 00:11:06,320

near-term focus has been as as don has

243

00:11:09,750 --> 00:11:08,000

mentioned kind of all the operational

244

00:11:11,829 --> 00:11:09,760

things we do on a day-to-day basis up

245

00:11:14,230 --> 00:11:11,839

here and now in just a little bit over

246

00:11:15,350 --> 00:11:14,240

two weeks getting prepared for for my

247

00:11:17,509 --> 00:11:15,360

return

248

00:11:19,509 --> 00:11:17,519

to planet earth it'll be a bit of a

249

00:11:27,590 --> 00:11:19,519

bitter bittersweet moment though leaving

250

00:11:31,910 --> 00:11:29,990

okay next up we have olga delbert

251

00:11:33,750 --> 00:11:31,920

dobrdova

252

00:11:35,590 --> 00:11:33,760

uh yes hello this is uh thanks for

253

00:11:38,069 --> 00:11:35,600

putting this this is olgatobraidwa with

254

00:11:39,990 --> 00:11:38,079

the russian news agency ryanawski uh

255

00:11:42,150 --> 00:11:40,000

tomorrow is a big day obviously for

256

00:11:44,710 --> 00:11:42,160

russia and the world commemorating the

257

00:11:47,269 --> 00:11:44,720

first human space flight

258

00:11:49,110 --> 00:11:47,279

do you have anything planned

259

00:11:54,550 --> 00:11:49,120

perhaps some surprises for your russian

260

00:11:58,389 --> 00:11:56,470

welcome welcome aboard uh the thing you

261

00:12:01,190 --> 00:11:58,399

know all of us i think uh that was a

262

00:12:04,470 --> 00:12:01,200

momentous day for uh for all humankind

263

00:12:07,030 --> 00:12:04,480

and uh the day that uh that uh yuri

264

00:12:08,710 --> 00:12:07,040

launched uh april 12 51 years ago was

265

00:12:11,350 --> 00:12:08,720

really really important it basically set

266

00:12:14,550 --> 00:12:11,360

the foundation for for a very wonderful

267

00:12:16,629 --> 00:12:14,560

and robust space program uh that that

268

00:12:19,190 --> 00:12:16,639

that now we enjoy uh cooperatively

269

00:12:21,190 --> 00:12:19,200

internationally and for us for our part

270

00:12:22,470 --> 00:12:21,200

here on board space station uh we are

271

00:12:24,150 --> 00:12:22,480

going to have a little bit of a reduced

272

00:12:25,910 --> 00:12:24,160

schedule and we're going to enjoy a

273

00:12:28,069 --> 00:12:25,920

couple of meals together

274

00:12:30,790 --> 00:12:28,079

something that often with the busy tempo

275

00:12:32,629 --> 00:12:30,800

and the busy operations space up here

276

00:12:34,550 --> 00:12:32,639

we don't often get a chance to do in

277

00:12:37,430 --> 00:12:34,560

fact a lot of us end up eating

278

00:12:39,030 --> 00:12:37,440

individually on the fly as we go and and

279

00:12:41,350 --> 00:12:39,040

so this will be a good opportunity for

280

00:12:43,430 --> 00:12:41,360

us to take a few minutes and

281

00:12:45,030 --> 00:12:43,440

and think about the history of our space

282

00:12:46,949 --> 00:12:45,040

program up until this point and kind of

283

00:12:49,829 --> 00:12:46,959

talk a little bit about where we think

284

00:12:53,030 --> 00:12:49,839

we'll be going in the future

285

00:12:55,030 --> 00:12:53,040

okay thank you

286

00:12:56,870 --> 00:12:55,040

thank you and next up we have denise

287

00:12:59,030 --> 00:12:56,880

chao

288

00:13:01,350 --> 00:12:59,040

hi thanks for taking my question um

289

00:13:03,829 --> 00:13:01,360

we've been receiving reports of a strong

290

00:13:05,350 --> 00:13:03,839

earthquake off the coast of indonesia

291

00:13:07,269 --> 00:13:05,360

and i was just wondering if you've flown

292

00:13:08,870 --> 00:13:07,279

over that region and seen anything or if

293

00:13:14,310 --> 00:13:08,880

you plan to photograph it later on in

294

00:13:17,910 --> 00:13:16,550

denise actually we had not heard about

295

00:13:21,350 --> 00:13:17,920

that and uh

296

00:13:23,509 --> 00:13:21,360

and and hopefully um it's uh limited in

297

00:13:24,389 --> 00:13:23,519

its impact to to folks in that area i

298

00:13:26,710 --> 00:13:24,399

know

299

00:13:28,550 --> 00:13:26,720

there's a there's been a lot of history

300

00:13:30,629 --> 00:13:28,560

from our perspective here on board space

301
00:13:33,590 --> 00:13:30,639
station there are certain times when we

302
00:13:34,710 --> 00:13:33,600
have the opportunity to see

303
00:13:36,710 --> 00:13:34,720
to see

304
00:13:39,430 --> 00:13:36,720
at least the results of tsunamis the

305
00:13:41,509 --> 00:13:39,440
results of natural disasters and there

306
00:13:44,230 --> 00:13:41,519
are some rare occasions that if the sun

307
00:13:45,670 --> 00:13:44,240
angle is just right we can actually see

308
00:13:47,670 --> 00:13:45,680
some of those internal waves some of

309
00:13:50,069 --> 00:13:47,680
those waves as they propagate across the

310
00:13:52,230 --> 00:13:50,079
ocean surface and now that you've

311
00:13:54,150 --> 00:13:52,240
mentioned it i think well i'm sure that

312
00:13:55,670 --> 00:13:54,160
our earth observations teams on the

313
00:13:57,910 --> 00:13:55,680

ground are probably already looking at

314

00:13:59,590 --> 00:13:57,920

those kind of opportunities for us and

315

00:14:02,069 --> 00:13:59,600

for our part i think we'll do our best

316

00:14:07,590 --> 00:14:02,079

to to take whatever image we can for

317

00:14:11,910 --> 00:14:10,470

thank you and also um i was wondering if

318

00:14:13,430 --> 00:14:11,920

either of you have been following the

319

00:14:15,189 --> 00:14:13,440

situation in north korea with their

320

00:14:22,710 --> 00:14:15,199

upcoming launch and if you had any

321

00:14:26,150 --> 00:14:23,910

and uh

322

00:14:28,310 --> 00:14:26,160

i think in general we haven't had a lot

323

00:14:30,790 --> 00:14:28,320

of opportunity to follow the news i'm

324

00:14:31,829 --> 00:14:30,800

aware that a launch is being prepared

325

00:14:34,629 --> 00:14:31,839

and

326

00:14:36,790 --> 00:14:34,639

beyond that the specifics of the launch

327

00:14:40,470 --> 00:14:36,800

at least i for one am not aware of a lot

328

00:14:46,949 --> 00:14:42,470

thank you

329

00:14:50,069 --> 00:14:46,959

robert perlman

330

00:14:51,829 --> 00:14:50,079

collectspace.com

331

00:14:54,069 --> 00:14:51,839

uh i'm currently standing on the shuttle

332

00:14:56,389 --> 00:14:54,079

landing facility standing next to the

333

00:14:59,110 --> 00:14:56,399

shuttle carrier aircraft and to work off

334

00:15:01,350 --> 00:14:59,120

uh marsha's question from earlier uh for

335

00:15:03,110 --> 00:15:01,360

dan and don as shuttle veterans uh is

336

00:15:04,629 --> 00:15:03,120

this an event uh the delivery of

337

00:15:06,629 --> 00:15:04,639

discovery and the other well of

338

00:15:08,470 --> 00:15:06,639

discovery and then enterprise something

339

00:15:10,470 --> 00:15:08,480

that you'll be able to follow along or

340

00:15:12,550 --> 00:15:10,480

you've requested to follow along

341

00:15:14,870 --> 00:15:12,560

on board station

342

00:15:18,069 --> 00:15:14,880

we'd be able to watch the delivery and

343

00:15:25,590 --> 00:15:18,079

what does this transition in general

344

00:15:30,550 --> 00:15:28,069

and uh robert uh welcome as far as

345

00:15:32,470 --> 00:15:30,560

actually following uh the flight uh from

346

00:15:34,230 --> 00:15:32,480

our perspective up here at 400

347

00:15:37,110 --> 00:15:34,240

kilometers there's actually

348

00:15:39,430 --> 00:15:37,120

relatively little opportunity to see

349

00:15:41,110 --> 00:15:39,440

anything even as large as the the sca

350

00:15:43,269 --> 00:15:41,120

the shuttle carrier aircraft with

351

00:15:46,150 --> 00:15:43,279

discovery made it to it um we're able to

352

00:15:48,069 --> 00:15:46,160

see the evidence of ships and of uh of

353

00:15:50,310 --> 00:15:48,079

planes in the form of wakes and

354

00:15:51,990 --> 00:15:50,320

contrails if the lighting is just right

355

00:15:53,829 --> 00:15:52,000

but it's really difficult to get the

356

00:15:56,389 --> 00:15:53,839

kind of resolution to see much beyond

357

00:15:57,990 --> 00:15:56,399

that as as far as from a personal

358

00:16:01,990 --> 00:15:58,000

standpoint following along i think we're

359

00:16:04,150 --> 00:16:02,000

all very um and on one hand uh sad to

360

00:16:06,629 --> 00:16:04,160

see the shuttles retire but on another

361

00:16:09,590 --> 00:16:06,639

uh also happy to have the opportunity to

362

00:16:13,350 --> 00:16:09,600

move on to new and hopefully

363

00:16:17,030 --> 00:16:15,509

and for don i wonder if you could give

364

00:16:19,189 --> 00:16:17,040

us an update on

365

00:16:21,110 --> 00:16:19,199

uh on your trusty

366

00:16:23,110 --> 00:16:21,120

zucchini and

367

00:16:24,310 --> 00:16:23,120

in a general sense how important is it

368

00:16:34,310 --> 00:16:24,320

to

369

00:16:38,629 --> 00:16:35,910

uh well uh

370

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

space zucchini's doing fine

371

00:16:44,150 --> 00:16:41,279

and uh i probably get the most benefit

372

00:16:46,949 --> 00:16:44,160

out of uh him or her

373

00:16:48,389 --> 00:16:46,959

or it uh just because i'm i'm the

374

00:16:52,150 --> 00:16:48,399

gardener

375

00:16:55,350 --> 00:16:52,160

and and so gardner has its privileges

376

00:16:57,990 --> 00:16:55,360

uh it it tur i i am a little surprised i

377

00:17:00,550 --> 00:16:58,000

uh i uh fire off these these little

378

00:17:02,949 --> 00:17:00,560

blogs and i don't get much feedback so

379

00:17:07,110 --> 00:17:02,959

i'm i am surprised that other people

380

00:17:09,829 --> 00:17:07,120

seem to be following what's going on to

381

00:17:11,669 --> 00:17:09,839

my space zucchini and i understand that

382

00:17:14,309 --> 00:17:11,679

that my space zucchini even has a

383

00:17:15,669 --> 00:17:14,319

twitter account so uh

384

00:17:18,470 --> 00:17:15,679

anyway

385

00:17:20,949 --> 00:17:18,480

uh i it brings a smile to my face to see

386

00:17:22,870 --> 00:17:20,959

that that people are interested in such

387

00:17:25,270 --> 00:17:22,880

trimmings

388

00:17:32,230 --> 00:17:25,280

associated with the serious business of

389

00:17:36,390 --> 00:17:34,710

station this is jscpao we now will take

390

00:17:38,150 --> 00:17:36,400

a few questions from twitter followers

391

00:17:40,549 --> 00:17:38,160

on our phone bridge shannon moore is

392

00:17:42,630 --> 00:17:40,559

first shannon with your question

393

00:17:45,190 --> 00:17:42,640

hi this is shannon moore a geekbomb from

394

00:17:47,430 --> 00:17:45,200

twitter a lot of astronauts time on

395

00:17:49,590 --> 00:17:47,440

station is spent performing experiments

396

00:17:51,669 --> 00:17:49,600

and maintaining critical systems how do

397

00:17:53,350 --> 00:17:51,679

you find time to relax keep in touch

398

00:17:55,190 --> 00:17:53,360

with your family back on earth and

399

00:17:57,909 --> 00:17:55,200

create the incredible photographs and

400

00:18:02,549 --> 00:17:57,919

educational videos like dawn science of

401
00:18:06,789 --> 00:18:03,750
well

402
00:18:07,990 --> 00:18:06,799
we we can't work 24 hours a day even

403
00:18:10,549 --> 00:18:08,000
though

404
00:18:11,430 --> 00:18:10,559
it would it we'd get a lot done if we

405
00:18:12,870 --> 00:18:11,440
could

406
00:18:14,630 --> 00:18:12,880
and we

407
00:18:17,590 --> 00:18:14,640
we get an eight-hour block of time

408
00:18:20,630 --> 00:18:17,600
allocated for sleep and we typically

409
00:18:23,110 --> 00:18:20,640
work from around seven in the morning to

410
00:18:25,990 --> 00:18:23,120
about uh seven in the evening and then

411
00:18:28,470 --> 00:18:26,000
maybe another hour or so after that to

412
00:18:30,950 --> 00:18:28,480
catch up on loose ends and and outside

413
00:18:33,750 --> 00:18:30,960

of that time outside of about a 13 or

414

00:18:36,310 --> 00:18:33,760

14-hour period it's our off-duty time

415

00:18:38,310 --> 00:18:36,320

and we could do whatever off-duty

416

00:18:40,870 --> 00:18:38,320

activities are available on space

417

00:18:45,350 --> 00:18:40,880

station and so that's when we could take

418

00:18:47,590 --> 00:18:45,360

the moments to set up cameras or you can

419

00:18:50,150 --> 00:18:47,600

read books you can do whatever you want

420

00:18:51,750 --> 00:18:50,160

to do in that block of time and it's an

421

00:18:54,230 --> 00:18:51,760

individual thing things that are

422

00:18:56,870 --> 00:18:54,240

required for you to

423

00:19:00,070 --> 00:18:56,880

maintain yourself you can contact your

424

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

family uh whatever hobby interests uh

425

00:19:05,190 --> 00:19:02,160

tickle your imagination while you are up

426

00:19:07,990 --> 00:19:05,200

here and are con mentor with uh with the

427

00:19:12,630 --> 00:19:11,029

thank you

428

00:19:14,390 --> 00:19:12,640

and next we have john knight on the

429

00:19:16,870 --> 00:19:14,400

phone john

430

00:19:19,029 --> 00:19:16,880

hi good morning this is john knight aka

431

00:19:20,470 --> 00:19:19,039

john m night on twitter my question for

432

00:19:22,630 --> 00:19:20,480

the crew this morning is of all the

433

00:19:25,029 --> 00:19:22,640

experience the experiments you performed

434

00:19:27,190 --> 00:19:25,039

up on station which one had results that

435

00:19:28,789 --> 00:19:27,200

surprised or delighted you and please

436

00:19:37,110 --> 00:19:28,799

feel free to include any of your recent

437

00:19:40,390 --> 00:19:38,789

well i'll i'll talk about two

438

00:19:41,830 --> 00:19:40,400

experiments one is a serious

439

00:19:43,909 --> 00:19:41,840

programmatically experiment it has to do

440

00:19:46,549 --> 00:19:43,919

with combustion and

441

00:19:49,350 --> 00:19:46,559

when scientists talk about

442

00:19:50,950 --> 00:19:49,360

the physics and chemistry of flames they

443

00:19:52,789 --> 00:19:50,960

call it combustion everybody else just

444

00:19:55,590 --> 00:19:52,799

says that we've got fire

445

00:19:58,070 --> 00:19:55,600

and we have a couple of different pieces

446

00:20:00,549 --> 00:19:58,080

of equipment here on station that we can

447

00:20:03,669 --> 00:20:00,559

investigate combustion processes and we

448

00:20:07,029 --> 00:20:03,679

do that because of gravitational driven

449

00:20:08,950 --> 00:20:07,039

convection fires make heat and the heat

450

00:20:11,669 --> 00:20:08,960

makes gas that are different densities

451
00:20:14,149 --> 00:20:11,679
in the air around them and under gravity

452
00:20:16,070 --> 00:20:14,159
that makes convection and it has a huge

453
00:20:17,110 --> 00:20:16,080
impact in the dynamics of how flames

454
00:20:20,549 --> 00:20:17,120
behave

455
00:20:22,549 --> 00:20:20,559
and you do combustion experiments in a

456
00:20:24,470 --> 00:20:22,559
weightless environment and you no longer

457
00:20:27,750 --> 00:20:24,480
have that artifact and you can actually

458
00:20:29,590 --> 00:20:27,760
look at fundamental behavior of what the

459
00:20:31,990 --> 00:20:29,600
process is going on in the flame without

460
00:20:33,350 --> 00:20:32,000
the gravitational artifact and one of

461
00:20:35,350 --> 00:20:33,360
these i saw

462
00:20:36,870 --> 00:20:35,360
last week with a experiment that we call

463
00:20:39,029 --> 00:20:36,880

baths

464

00:20:40,950 --> 00:20:39,039

and it's an acronym for which i no

465

00:20:43,350 --> 00:20:40,960

longer know what it stands for anymore

466

00:20:45,750 --> 00:20:43,360

it just becomes its own noun and it's

467

00:20:48,630 --> 00:20:45,760

basically burning

468

00:20:49,590 --> 00:20:48,640

plastic objects solid plastic objects in

469

00:20:51,590 --> 00:20:49,600

air

470

00:20:54,310 --> 00:20:51,600

and looking at the conditions under

471

00:20:56,630 --> 00:20:54,320

which the burning object will continue

472

00:20:58,710 --> 00:20:56,640

to burn and under the conditions in

473

00:21:03,029 --> 00:20:58,720

which the the object will

474

00:21:05,590 --> 00:21:03,039

flame out and i was amazed that

475

00:21:07,669 --> 00:21:05,600

these burning hunks of plastic

476

00:21:10,230 --> 00:21:07,679

will continue to burn

477

00:21:12,710 --> 00:21:10,240

even if they're purged with nitrogen

478

00:21:15,909 --> 00:21:12,720

which should have put the flame out but

479

00:21:17,029 --> 00:21:15,919

the nitrogen purge would entrap enough

480

00:21:19,510 --> 00:21:17,039

air

481

00:21:21,830 --> 00:21:19,520

to uh keep the combustion process going

482

00:21:23,830 --> 00:21:21,840

and and what actually put the flame out

483

00:21:25,350 --> 00:21:23,840

was turning all the convection off

484

00:21:28,549 --> 00:21:25,360

around the flame and then it burned out

485

00:21:31,990 --> 00:21:28,559

in about a second and so this

486

00:21:34,789 --> 00:21:32,000

uh this uh uh reestablishes what we

487

00:21:37,430 --> 00:21:34,799

teach our kids if you ever catch on fire

488

00:21:42,149 --> 00:21:37,440

fire you stop drop and roll well in

489

00:21:47,990 --> 00:21:42,159

space you stop and float and and and

490

00:21:52,630 --> 00:21:50,230

thank you

491

00:21:55,110 --> 00:21:52,640

in station this is jscpo we'll now take

492

00:21:57,270 --> 00:21:55,120

a few questions that are on twitter

493

00:21:59,270 --> 00:21:57,280

this first one comes from ranaww on

494

00:22:07,430 --> 00:21:59,280

twitter what experiments are you running

495

00:22:10,950 --> 00:22:09,510

okay and we've got a lot of experiments

496

00:22:12,549 --> 00:22:10,960

that we're running on board space

497

00:22:14,470 --> 00:22:12,559

station during our entire time here

498

00:22:16,070 --> 00:22:14,480

there's something on the order of 200.

499

00:22:18,310 --> 00:22:16,080

now with that said a lot of those are

500

00:22:20,149 --> 00:22:18,320

run remotely are run by scientists all

501
00:22:22,310 --> 00:22:20,159
over the world on the ground the ones

502
00:22:24,149 --> 00:22:22,320
that we interact with on a daily basis

503
00:22:26,149 --> 00:22:24,159
up here for example the combustion

504
00:22:28,470 --> 00:22:26,159
experiments that don's been working on

505
00:22:30,470 --> 00:22:28,480
both bass and splice there's an

506
00:22:32,470 --> 00:22:30,480
experiment that all of us right now are

507
00:22:34,789 --> 00:22:32,480
currently involved in called integrated

508
00:22:36,470 --> 00:22:34,799
cardiovascular and that one is one

509
00:22:38,390 --> 00:22:36,480
that's got many many different aspects

510
00:22:39,830 --> 00:22:38,400
it involves exercise it involves

511
00:22:41,510 --> 00:22:39,840
ultrasonic

512
00:22:43,190 --> 00:22:41,520
investigations of changes in the heart

513
00:22:46,390 --> 00:22:43,200

muscle changes in the

514

00:22:49,190 --> 00:22:46,400

the vascular system and

515

00:22:50,870 --> 00:22:49,200

there's those are pretty much designed

516

00:22:52,950 --> 00:22:50,880

like a lot of the human research that we

517

00:22:55,669 --> 00:22:52,960

do on space station to figure out how to

518

00:22:57,990 --> 00:22:55,679

keep humans healthy and safe in space

519

00:23:02,230 --> 00:22:58,000

long enough to go far from planet earth

520

00:23:06,870 --> 00:23:03,909

this next question comes from tavi

521

00:23:09,110 --> 00:23:06,880

greener says from olivia age nine does

522

00:23:17,590 --> 00:23:09,120

your appetite and or your sense of taste

523

00:23:20,950 --> 00:23:19,029

well i think for the at least for the

524

00:23:23,190 --> 00:23:20,960

three of us and probably actually for

525

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

the six of us in this crew

526

00:23:27,830 --> 00:23:25,679

our appetites are are uh are pretty

527

00:23:29,510 --> 00:23:27,840

strong even on planet earth and i guess

528

00:23:31,270 --> 00:23:29,520

they're at least as strong while you're

529

00:23:33,190 --> 00:23:31,280

up here that's kind of a strange thing

530

00:23:34,950 --> 00:23:33,200

because you would think that floating

531

00:23:36,630 --> 00:23:34,960

around like we do in space that you

532

00:23:39,110 --> 00:23:36,640

wouldn't necessarily need to burn as

533

00:23:42,549 --> 00:23:39,120

many calories but for whatever reason

534

00:23:43,909 --> 00:23:42,559

you do and uh and i think on average

535

00:23:45,669 --> 00:23:43,919

probably all of us up here need

536

00:23:47,669 --> 00:23:45,679

something in the or in excess of 3000

537

00:23:49,029 --> 00:23:47,679

calories a day you almost can't get

538

00:23:51,029 --> 00:23:49,039

enough to eat when you finally get tired

539

00:23:52,870 --> 00:23:51,039

enough at the end of the day

540

00:23:54,310 --> 00:23:52,880

that may be the time that you're you're

541

00:23:55,909 --> 00:23:54,320

not as hungry and you're ready to go to

542

00:23:56,950 --> 00:23:55,919

sleep

543

00:23:57,990 --> 00:23:56,960

i think

544

00:23:59,669 --> 00:23:58,000

uh for

545

00:24:02,310 --> 00:23:59,679

well for all of us in general our

546

00:24:03,830 --> 00:24:02,320

activity levels tend to be pretty high

547

00:24:05,430 --> 00:24:03,840

which probably accounts for some of that

548

00:24:07,590 --> 00:24:05,440

we do exercise a lot about two and a

549

00:24:09,590 --> 00:24:07,600

half hours a day total

550

00:24:11,269 --> 00:24:09,600

as far as the taste changes this might

551
00:24:15,350 --> 00:24:11,279
have to do with some of the fluid shift

552
00:24:17,110 --> 00:24:15,360
but for me i like really spicy things

553
00:24:18,710 --> 00:24:17,120
almost spicy to the point where i

554
00:24:21,669 --> 00:24:18,720
couldn't necessarily

555
00:24:26,710 --> 00:24:21,679
eat them on planet earth so hot sauces

556
00:24:31,669 --> 00:24:29,750
this next question comes from eva issa75

557
00:24:33,510 --> 00:24:31,679
are you trying any technological device

558
00:24:40,470 --> 00:24:33,520
that will be used later in ordinary

559
00:24:43,590 --> 00:24:41,269
one

560
00:24:45,830 --> 00:24:43,600
piece of engineering research we we do

561
00:24:47,750 --> 00:24:45,840
scientific research up here which most

562
00:24:49,590 --> 00:24:47,760
people are familiar with we also do

563
00:24:52,310 --> 00:24:49,600

engineering research which is a second

564

00:24:53,110 --> 00:24:52,320

facet of space station that we work on

565

00:24:56,230 --> 00:24:53,120

and

566

00:24:58,149 --> 00:24:56,240

these are using pieces of engineering

567

00:25:00,549 --> 00:24:58,159

equipment

568

00:25:02,870 --> 00:25:00,559

and and using them

569

00:25:04,630 --> 00:25:02,880

one of a kind serial number zero one

570

00:25:07,350 --> 00:25:04,640

kind of piece of equipment working the

571

00:25:09,669 --> 00:25:07,360

bugs out so that we can make

572

00:25:10,630 --> 00:25:09,679

spacecraft in the future

573

00:25:12,470 --> 00:25:10,640

uh

574

00:25:14,630 --> 00:25:12,480

and and use the technology that we

575

00:25:16,710 --> 00:25:14,640

develop so in this engineering research

576

00:25:18,950 --> 00:25:16,720

one piece of equipment we're working on

577

00:25:21,190 --> 00:25:18,960

is uh regenerative life support

578

00:25:23,269 --> 00:25:21,200

equipment and so

579

00:25:25,990 --> 00:25:23,279

the the keystone in this regenerative

580

00:25:27,430 --> 00:25:26,000

life support is

581

00:25:29,510 --> 00:25:27,440

three pieces of equipment that are all

582

00:25:31,510 --> 00:25:29,520

hooked together our toilet

583

00:25:34,710 --> 00:25:31,520

uh distillation outfit and then our

584

00:25:37,909 --> 00:25:34,720

galley and it allows us to recycle the

585

00:25:40,630 --> 00:25:37,919

water from our urine uh process it

586

00:25:43,190 --> 00:25:40,640

purify it and put it back in the galley

587

00:25:45,350 --> 00:25:43,200

and i like to call it the coffee machine

588

00:25:47,510 --> 00:25:45,360

because it takes yesterday's coffee it

589

00:25:50,710 --> 00:25:47,520

makes it into today's coffee

590

00:25:54,070 --> 00:25:50,720

and this is technology that i i feel is

591

00:25:56,310 --> 00:25:54,080

going to be useful for places on earth

592

00:26:00,070 --> 00:25:56,320

that uh

593

00:26:02,630 --> 00:26:00,080

are under significant water uh shortages

594

00:26:06,310 --> 00:26:02,640

where where we can have equipment that

595

00:26:07,350 --> 00:26:06,320

can uh recycle the water uh in a in a

596

00:26:13,830 --> 00:26:07,360

small

597

00:26:17,830 --> 00:26:15,669

okay this next question comes from data

598

00:26:19,909 --> 00:26:17,840

check you are both researcher and

599

00:26:27,669 --> 00:26:19,919

researcher what is the most difficult

600

00:26:32,149 --> 00:26:30,549

to me the the most difficult part of the

601
00:26:32,950 --> 00:26:32,159
research e

602
00:26:35,669 --> 00:26:32,960
is

603
00:26:38,310 --> 00:26:35,679
getting stuck by needles and having all

604
00:26:40,149 --> 00:26:38,320
this equipment stuck all over you we

605
00:26:41,990 --> 00:26:40,159
wear this side called a cardio press

606
00:26:43,830 --> 00:26:42,000
which is this great big thing that you

607
00:26:45,750 --> 00:26:43,840
put on your hand that basically

608
00:26:48,390 --> 00:26:45,760
immobilizes your hand from doing

609
00:26:51,269 --> 00:26:48,400
anything useful and uh fortunately we

610
00:26:52,549 --> 00:26:51,279
only have to wear that for 24 hours

611
00:26:55,750 --> 00:26:52,559
but uh

612
00:26:58,390 --> 00:26:55,760
it's it it's the the equipment and

613
00:27:02,230 --> 00:26:58,400

the needles and and the sticking

614

00:27:04,549 --> 00:27:02,240

that uh i probably uh uh shudder the

615

00:27:06,630 --> 00:27:04,559

most at uh however

616

00:27:09,750 --> 00:27:06,640

the the end result of all this equipment

617

00:27:12,549 --> 00:27:09,760

it's pride from our souls but the the

618

00:27:15,909 --> 00:27:12,559

end result from the data is certainly

619

00:27:18,470 --> 00:27:15,919

worth the inconvenience of having uh

620

00:27:23,350 --> 00:27:18,480

been on the receiving end of the

621

00:27:29,510 --> 00:27:25,430

okay this next one is probably likely

622

00:27:29,520 --> 00:27:34,870

go ahead andre

623

00:27:39,350 --> 00:27:36,950

well i'd like to address the other side

624

00:27:42,070 --> 00:27:39,360

of doing the research for me uh it's one

625

00:27:43,830 --> 00:27:42,080

of the nicest things is is to stick uh

626
00:27:46,310 --> 00:27:43,840
needles into her daughter and then to

627
00:27:49,430 --> 00:27:46,320
get blood samples uh

628
00:27:51,669 --> 00:27:49,440
it's it's nice to uh to do all this uh

629
00:27:54,070 --> 00:27:51,679
kind of research uh because it also

630
00:27:56,149 --> 00:27:54,080
involves a lot of equipment that uh you

631
00:27:59,590 --> 00:27:56,159
normally don't work with uh on the

632
00:28:01,110 --> 00:27:59,600
ground and uh for example uh we have to

633
00:28:04,149 --> 00:28:01,120
for this experiment integrated

634
00:28:07,269 --> 00:28:04,159
cardiovascular uh we uh we use also the

635
00:28:09,029 --> 00:28:07,279
echo machine and it's very nice to uh to

636
00:28:12,070 --> 00:28:09,039
get good images of

637
00:28:13,190 --> 00:28:12,080
of the heart and uh with with great help

638
00:28:15,669 --> 00:28:13,200

of the ground

639

00:28:17,590 --> 00:28:15,679

so that makes it very rewarding to do

640

00:28:20,310 --> 00:28:17,600

this research on board of the space

641

00:28:25,190 --> 00:28:23,110

and station this is jscpao we have one

642

00:28:27,750 --> 00:28:25,200

more follow-up question that'll about do

643

00:28:30,630 --> 00:28:27,760

it for today

644

00:28:33,430 --> 00:28:30,640

hello this is jill polk again well a

645

00:28:35,990 --> 00:28:33,440

question for dawn and dan since i'm

646

00:28:37,590 --> 00:28:36,000

running for your hometown newspapers

647

00:28:38,870 --> 00:28:37,600

i just wanted to know if there's

648

00:28:40,149 --> 00:28:38,880

anything you would like to say

649

00:28:42,389 --> 00:28:40,159

personally

650

00:28:44,470 --> 00:28:42,399

to the residents in your hometown areas

651
00:28:46,870 --> 00:28:44,480
in oregon and massachusetts

652
00:28:52,950 --> 00:28:46,880
and perhaps even connecticut for don for

653
00:28:56,389 --> 00:28:54,470
well well i guess

654
00:28:58,710 --> 00:28:56,399
i would just say that

655
00:29:00,070 --> 00:28:58,720
cape cod connecticut new england are are

656
00:29:01,190 --> 00:29:00,080
beautiful when you see them from the

657
00:29:03,110 --> 00:29:01,200
ground

658
00:29:05,669 --> 00:29:03,120
they're uh even more so when you see

659
00:29:09,830 --> 00:29:05,679
them from space and and i'll be home

660
00:29:14,710 --> 00:29:12,070
and and for all the folks around

661
00:29:17,269 --> 00:29:14,720
silverton oregon uh when i was growing

662
00:29:20,549 --> 00:29:17,279
up there it's a community effort to

663
00:29:22,549 --> 00:29:20,559

educate kids growing up and you pay that

664

00:29:24,710 --> 00:29:22,559

through your local taxes and it supports

665

00:29:27,350 --> 00:29:24,720

your schools and there's there's

666

00:29:29,110 --> 00:29:27,360

probably no way i'd be where i am right

667

00:29:31,430 --> 00:29:29,120

now if it wasn't for

668

00:29:34,710 --> 00:29:31,440

people willing to support the schools

669

00:29:39,110 --> 00:29:34,720

and give their kids a the best education

670

00:29:45,430 --> 00:29:41,190

as station this is houston acr that

671

00:29:48,870 --> 00:29:46,950

and to all thanks very much for your

672

00:29:50,950 --> 00:29:48,880

participation for a great event and