



1
00:00:06,470 --> 00:00:03,459
station this is Houston are you ready

2
00:00:15,270 --> 00:00:13,170
we are ready for the event J SCPA oh

3
00:00:19,290 --> 00:00:15,280
this is Houston please cross station for

4
00:00:22,920 --> 00:00:19,300
a voice check station this is JSC Pai oh

5
00:00:29,980 --> 00:00:27,999
hello we hear you loud and clear awesome

6
00:00:32,160 --> 00:00:29,990
okay so first we're going to go out to

7
00:00:34,869 --> 00:00:32,170
their social media followers who are at

8
00:00:36,700 --> 00:00:34,879
the Kennedy Space Center in Florida for

9
00:00:43,960 --> 00:00:36,710
the launch of NASA's radiation belt

10
00:00:47,410 --> 00:00:43,970
storm probes mission KSC over to you hi

11
00:00:50,110 --> 00:00:47,420
Joe this is rands adams at KSC twitter

12
00:00:51,280 --> 00:00:50,120
handle at medic rands i was wondering

13
00:00:53,079 --> 00:00:51,290

how do you cope with being away from

14

00:00:56,740 --> 00:00:53,089

your family for such a long period of

15

00:00:58,330 --> 00:00:56,750

time long-duration ISS crew members have

16

00:01:00,369 --> 00:00:58,340

said how isolating it could be aboard

17

00:01:04,520 --> 00:01:00,379

the station what keeps you going and

18

00:01:10,140 --> 00:01:07,620

well don't tell my family but you know I

19

00:01:12,450 --> 00:01:10,150

don't feel too isolated up here you know

20

00:01:14,340 --> 00:01:12,460

we're talking to Mission Control all day

21

00:01:16,920 --> 00:01:14,350

long they get to see us and we have a

22

00:01:19,530 --> 00:01:16,930

lot of communication there but with my

23

00:01:21,450 --> 00:01:19,540

family we speak every week on a

24

00:01:24,540 --> 00:01:21,460

videoconference so we see each other

25

00:01:27,120 --> 00:01:24,550

often also have the telephone so I can

26

00:01:28,530 --> 00:01:27,130

call if I have to we have email so nASA

27

00:01:30,359 --> 00:01:28,540

has done a lot to keep us in

28

00:01:32,910 --> 00:01:30,369

communication with family and friends so

29

00:01:34,230 --> 00:01:32,920

it's really not too bad at all you know

30

00:01:36,359 --> 00:01:34,240

I was a Peace Corps volunteer and I

31

00:01:38,609 --> 00:01:36,369

lived somewhere without electricity and

32

00:01:39,030 --> 00:01:38,619

I felt a lot more isolated there than I

33

00:01:42,150 --> 00:01:39,040

do now

34

00:01:44,430 --> 00:01:42,160

and looking out the window is motivation

35

00:01:50,210 --> 00:01:44,440

to to keep to stay up here and just

36

00:01:54,900 --> 00:01:53,100

this is Dave Higgins at Dave Higgins one

37

00:01:57,630 --> 00:01:54,910

Twitter handle this questions for SUNY

38

00:01:59,970 --> 00:01:57,640

our night launches visible from the ISS

39

00:02:01,290 --> 00:01:59,980

and will the ISS be in a position to

40

00:02:05,820 --> 00:02:01,300

look for the Friday launch of the

41

00:02:09,790 --> 00:02:08,170

well launches are visible but you have

42

00:02:11,230 --> 00:02:09,800

to at the right place at the right time

43

00:02:14,770 --> 00:02:11,240

because you know we're going pretty fast

44

00:02:18,520 --> 00:02:14,780

to 17,500 miles an hour or so and so we

45

00:02:20,440 --> 00:02:18,530

zip zip past places pretty quickly we

46

00:02:23,050 --> 00:02:20,450

actually tried to look when the progress

47

00:02:25,570 --> 00:02:23,060

was launching out of Baikonur and we saw

48

00:02:28,390 --> 00:02:25,580

the launch platform but we didn't get to

49

00:02:30,100 --> 00:02:28,400

see a launch not exactly sure where

50

00:02:32,350 --> 00:02:30,110

we're gonna be on Friday at that

51
00:02:34,180 --> 00:02:32,360
particular time but if we're anywhere

52
00:02:36,220 --> 00:02:34,190
near Florida at night we'll be keeping

53
00:02:38,170 --> 00:02:36,230
our eyes open because nighttime viewing

54
00:02:40,510 --> 00:02:38,180
from the Space Station from the cupola

55
00:02:43,780 --> 00:02:40,520
is just incredible and you can really

56
00:02:45,730 --> 00:02:43,790
make out all sorts of cities and areas

57
00:02:48,010 --> 00:02:45,740
so I'm sure if there's xenon lights

58
00:02:50,050 --> 00:02:48,020
lighting up the launch pad at the Cape

59
00:02:56,500 --> 00:02:50,060
and we're anywhere nearby we'll be able

60
00:02:59,050 --> 00:02:56,510
to see it when I started a joke

61
00:03:01,330 --> 00:02:59,060
Pedro basket the Kennedy Space Center a

62
00:03:04,150 --> 00:03:01,340
delicious blow on Twitter

63
00:03:06,880 --> 00:03:04,160

Joe K cluster the plateaus preparados oh

64

00:03:09,130 --> 00:03:06,890

mama partake on their own Nino he may

65

00:03:15,040 --> 00:03:09,140

try curious OSI obtain his organ plateau

66

00:03:20,840 --> 00:03:18,710

muchísimo gracias por supuesto me la

67

00:03:23,030 --> 00:03:20,850

comida Favorita ALAB comida puerto rican

68

00:03:27,710 --> 00:03:23,040

a rock compose a poem

69

00:03:31,520 --> 00:03:27,720

asado con tostones in the Navidad los

70

00:03:36,860 --> 00:03:31,530

pasteles pero también me moi Casino la

71

00:03:38,540 --> 00:03:36,870

comida americana a mexicana pero si yo

72

00:03:41,750 --> 00:03:38,550

quiero ver Eger Sarika marisa comida

73

00:03:44,900 --> 00:03:41,760

otra vez y aquí tenemos una moon come on

74

00:03:51,790 --> 00:03:44,910

boy okay see mr Boyle fiesta chicken

75

00:03:57,830 --> 00:03:55,640

hi this is Evie murim spacegirl

76

00:03:59,780 --> 00:03:57,840

Evie with you my question is for SUNY

77

00:04:02,420 --> 00:03:59,790

and I would like to know how much

78

00:04:04,850 --> 00:04:02,430

radiation the ISS crew received during

79

00:04:07,040 --> 00:04:04,860

an average six-month period mission

80

00:04:08,960 --> 00:04:07,050

compared to that same amount of time on

81

00:04:15,370 --> 00:04:08,970

earth and what kind of protection do you

82

00:04:22,670 --> 00:04:21,020

don't know all the exact numbers but you

83

00:04:25,129 --> 00:04:22,680

know the fact that's thrown out there is

84

00:04:28,370 --> 00:04:25,139

it's about like 10 times the amount that

85

00:04:30,770 --> 00:04:28,380

we get on earth per day so it's a pretty

86

00:04:33,950 --> 00:04:30,780

high amount of radiation that we get

87

00:04:36,350 --> 00:04:33,960

while we're up here however we've got

88

00:04:38,540 --> 00:04:36,360

radiation covering around the space

89

00:04:40,790 --> 00:04:38,550

station we wear dosimeter x' all the

90

00:04:43,850 --> 00:04:40,800

time in fact we have them for when we go

91

00:04:45,770 --> 00:04:43,860

out on spacewalks as well to see if we

92

00:04:48,290 --> 00:04:45,780

get any additional radiation through the

93

00:04:50,210 --> 00:04:48,300

spacesuit and so it's monitored pretty

94

00:04:52,969 --> 00:04:50,220

well all of the modules in the space

95

00:04:55,100 --> 00:04:52,979

station also have radiation monitors and

96

00:04:56,960 --> 00:04:55,110

that information gets sent back down to

97

00:04:58,490 --> 00:04:56,970

the ground and also our dosimeter x'

98

00:05:01,610 --> 00:04:58,500

when we come back home and so they can

99

00:05:04,400 --> 00:05:01,620

get a good idea of exactly how much

100

00:05:07,100 --> 00:05:04,410

radiation we get and yeah we do get

101
00:05:10,010 --> 00:05:07,110
warnings if there is some type of solar

102
00:05:12,230 --> 00:05:10,020
activity or high radiation event and if

103
00:05:14,230 --> 00:05:12,240
that's the case then we'll go to a part

104
00:05:16,610 --> 00:05:14,240
of the station that's a little bit more

105
00:05:21,580 --> 00:05:16,620
sheltered and stuff to prevent us from

106
00:05:27,530 --> 00:05:25,220
hi this is Rena Warren Rena W on Twitter

107
00:05:29,330 --> 00:05:27,540
this question is for Jo there are so

108
00:05:31,190 --> 00:05:29,340
many NASA developed technologies that we

109
00:05:33,200 --> 00:05:31,200
use in everyday life what if anything is

110
00:05:35,570 --> 00:05:33,210
in use on earth that came from an

111
00:05:37,790 --> 00:05:35,580
experiment on the ISS or technology

112
00:05:38,960 --> 00:05:37,800
developed for the ISS and in the end

113
00:05:45,120 --> 00:05:38,970

what do you think will be the biggest

114

00:05:49,360 --> 00:05:47,350

well that's a great question and yeah

115

00:05:51,340 --> 00:05:49,370

over the years nASA has developed all

116

00:05:55,120 --> 00:05:51,350

kinds of technologies that we use every

117

00:05:56,920 --> 00:05:55,130

day and that continues today while we've

118

00:05:58,870 --> 00:05:56,930

since we've been up here Sonny just

119

00:06:02,140 --> 00:05:58,880

yesterday was working on a project with

120

00:06:03,790 --> 00:06:02,150

fire which is always fun and what they

121

00:06:05,890 --> 00:06:03,800

can get from that is we can learn the

122

00:06:08,230 --> 00:06:05,900

properties of fire and they can improve

123

00:06:10,000 --> 00:06:08,240

the models that we use on the ground so

124

00:06:12,340 --> 00:06:10,010

there's a lot that's happening working

125

00:06:14,170 --> 00:06:12,350

with fluids and how they how they move

126

00:06:17,140 --> 00:06:14,180

in different types of tanks so we're

127

00:06:18,490 --> 00:06:17,150

continuously improving that and I would

128

00:06:20,980 --> 00:06:18,500

invite all of you to go to the NASA

129

00:06:23,050 --> 00:06:20,990

website to the spin-offs section and you

130

00:06:24,760 --> 00:06:23,060

can see everything that NASA has done

131

00:06:26,800 --> 00:06:24,770

and I can guarantee you'll find

132

00:06:29,650 --> 00:06:26,810

something that you use that is a spinoff

133

00:06:32,200 --> 00:06:29,660

from NASA and what we might find in the

134

00:06:34,390 --> 00:06:32,210

future what's cool now is the ISS as a

135

00:06:36,490 --> 00:06:34,400

National Lab so what that means is that

136

00:06:39,040 --> 00:06:36,500

in the future half the science we do

137

00:06:40,810 --> 00:06:39,050

will be proposed by scientists around

138

00:06:42,580 --> 00:06:40,820

the world and the other half will be

139

00:06:45,610 --> 00:06:42,590

done by NASA scientists so we can go out

140

00:06:47,260 --> 00:06:45,620

further past low-earth orbit and what's

141

00:06:48,640 --> 00:06:47,270

cool about exploration is you don't know

142

00:06:50,530 --> 00:06:48,650

what you're gonna find and that's what

143

00:06:51,550 --> 00:06:50,540

I'm excited about I think some cool

144

00:06:57,280 --> 00:06:51,560

things are going to happen here in the

145

00:07:02,270 --> 00:06:59,540

Thank You Jo and Sonny now we're gonna

146

00:07:03,770 --> 00:07:02,280

go to social media followers who are on

147

00:07:05,510 --> 00:07:03,780

our phone bridge they're calling from

148

00:07:06,920 --> 00:07:05,520

all over the world so callers on the

149

00:07:08,990 --> 00:07:06,930

phone will you please state your name

150

00:07:12,620 --> 00:07:09,000

and also where you're calling from let's

151
00:07:14,990 --> 00:07:12,630
go with number one Laura this is Laura a

152
00:07:17,210 --> 00:07:15,000
trio yet oh I'm science worker on

153
00:07:20,030 --> 00:07:17,220
Twitter and I'm calling from San Carlos

154
00:07:22,640 --> 00:07:20,040
de Bariloche Patagonia in Argentina this

155
00:07:25,790 --> 00:07:22,650
question is for suni why is it important

156
00:07:28,550 --> 00:07:25,800
that human beings not just robot explore

157
00:07:36,620 --> 00:07:28,560
space for example Mars do you live and

158
00:07:37,850 --> 00:07:36,630
work with many robots aboard a DSS Laura

159
00:07:39,620 --> 00:07:37,860
is a matter of fact you could probably

160
00:07:42,680 --> 00:07:39,630
see Robonaut right in front of us and

161
00:07:44,810 --> 00:07:42,690
today we brought him out to try him out

162
00:07:47,810 --> 00:07:44,820
and see how he could do for some of the

163
00:07:50,360 --> 00:07:47,820

simple tasks as we're trying to actually

164

00:07:53,270 --> 00:07:50,370

perfect robots so that they can actually

165

00:07:55,910 --> 00:07:53,280

use their hands his hands are actually

166

00:07:57,710 --> 00:07:55,920

like our hands and so he's gonna trying

167

00:07:59,330 --> 00:07:57,720

to do some fine dexterous things and

168

00:08:01,490 --> 00:07:59,340

then in the future we can potentially

169

00:08:03,770 --> 00:08:01,500

use something like this outside to do

170

00:08:05,900 --> 00:08:03,780

tasks that right now we have to do so

171

00:08:07,580 --> 00:08:05,910

yeah humans have to be in space at this

172

00:08:10,160 --> 00:08:07,590

moment in time to do stuff like

173

00:08:11,570 --> 00:08:10,170

spacewalks and do some of the fine

174

00:08:14,660 --> 00:08:11,580

manipulations stuff if we're gonna

175

00:08:15,020 --> 00:08:14,670

change boxes or electronics equipment

176

00:08:17,420 --> 00:08:15,030

outside

177

00:08:19,820 --> 00:08:17,430

and speaking of exploration you know

178

00:08:21,470 --> 00:08:19,830

think about you know the Rovers that are

179

00:08:24,410 --> 00:08:21,480

on Mars that's just incredible that

180

00:08:26,060 --> 00:08:24,420

curiosity is there and doing its thing

181

00:08:28,730 --> 00:08:26,070

but if it runs across something that

182

00:08:30,500 --> 00:08:28,740

maybe we hadn't planned it's gonna mean

183

00:08:33,260 --> 00:08:30,510

people that back on earth are gonna have

184

00:08:35,719 --> 00:08:33,270

to sit down think about all the pros and

185

00:08:37,640 --> 00:08:35,729

cons to make a decision now if there was

186

00:08:39,560 --> 00:08:37,650

a human there on Mars they could use

187

00:08:41,870 --> 00:08:39,570

their best judgment engineering judgment

188

00:08:43,580 --> 00:08:41,880

scientific judgment medical judgment to

189

00:08:45,950 --> 00:08:43,590

make that decision pretty quick and

190

00:08:48,710 --> 00:08:45,960

things could happen a lot more rapid so

191

00:08:51,680 --> 00:08:48,720

I think humans are definitely needed for

192

00:08:53,350 --> 00:08:51,690

further of exploration and to find to

193

00:08:55,670 --> 00:08:53,360

find things that we didn't even expect

194

00:08:58,340 --> 00:08:55,680

machines usually do things that we

195

00:09:00,260 --> 00:08:58,350

expect it's more the human beings right

196

00:09:06,290 --> 00:09:00,270

that's curious and to find the next

197

00:09:08,940 --> 00:09:06,300

thing that we need to explore my name is

198

00:09:10,530 --> 00:09:08,950

Roy Roy I'm also played on Twitter

199

00:09:13,949 --> 00:09:10,540

and I'm calling from Raleigh North

200

00:09:15,930 --> 00:09:13,959

Carolina my question is for Joe and

201
00:09:18,000 --> 00:09:15,940
other than your family what is the thing

202
00:09:19,680 --> 00:09:18,010
that you mission both from Earth what

203
00:09:25,090 --> 00:09:19,690
are you most looking forward to when

204
00:09:29,840 --> 00:09:28,100
well I think the after being here for a

205
00:09:30,799 --> 00:09:29,850
little more than three months and I have

206
00:09:32,449 --> 00:09:30,809
one more to go

207
00:09:33,739 --> 00:09:32,459
the one thing that I miss and I'm

208
00:09:35,900 --> 00:09:33,749
looking forward to is actually the

209
00:09:38,720 --> 00:09:35,910
climate back on earth you know we live

210
00:09:40,040 --> 00:09:38,730
in this fairly sterile environment which

211
00:09:41,929 --> 00:09:40,050
is very comfortable if you live in

212
00:09:43,280 --> 00:09:41,939
Houston this time of year but I look

213
00:09:45,169 --> 00:09:43,290

forward to getting back and feeling that

214

00:09:48,139 --> 00:09:45,179

Sun on my face sitting by the pool

215

00:09:49,819 --> 00:09:48,149

working on my tan a little bit you know

216

00:09:51,799 --> 00:09:49,829

just feeling the Sun feeling the wind

217

00:09:54,169 --> 00:09:51,809

feeling the rain those are things that

218

00:09:56,059 --> 00:09:54,179

we miss up here and I don't know maybe a

219

00:10:00,169 --> 00:09:56,069

barbecue bacon cheeseburger with the

220

00:10:02,449 --> 00:10:00,179

vanilla shake would be good hi this is

221

00:10:05,989 --> 00:10:02,459

Newton calling from Liverpool and

222

00:10:07,519 --> 00:10:05,999

England and my question for Sonny I know

223

00:10:09,379 --> 00:10:07,529

that you've got spiders on board at the

224

00:10:14,749 --> 00:10:09,389

moment but what are the creatures have

225

00:10:16,309 --> 00:10:14,759

made it onto the ISS yeah you're

226
00:10:17,540 --> 00:10:16,319
absolutely right we have two spiders and

227
00:10:20,540 --> 00:10:17,550
their habitats and we've been watching

228
00:10:22,669 --> 00:10:20,550
them prey on the fruit flies it's been

229
00:10:24,410 --> 00:10:22,679
pretty interesting in the past we've

230
00:10:26,569 --> 00:10:24,420
actually had some other spiders and I

231
00:10:28,639 --> 00:10:26,579
think that was the first time I've was

232
00:10:31,249 --> 00:10:28,649
able to answer a question that I got

233
00:10:33,259 --> 00:10:31,259
from a fifth-grader about how do spiders

234
00:10:35,509 --> 00:10:33,269
make webs in space and that's it

235
00:10:37,309 --> 00:10:35,519
actually was a pretty interesting thing

236
00:10:40,100 --> 00:10:37,319
for us to watch real time here and

237
00:10:42,049 --> 00:10:40,110
earlier previously they they pretty much

238
00:10:46,119 --> 00:10:42,059

adapt other animals that we've had we've

239

00:10:48,590 --> 00:10:46,129

had mice up here before not too long ago

240

00:10:50,030 --> 00:10:48,600

on the space station I think those are

241

00:10:52,519 --> 00:10:50,040

all the animals we've had but in the

242

00:10:54,710 --> 00:10:52,529

future we're going to have fish our

243

00:10:57,230 --> 00:10:54,720

other crew mate Aki hoshide from JAXA

244

00:10:59,509 --> 00:10:57,240

from Japan has been getting the aquarium

245

00:11:01,129 --> 00:10:59,519

ready to go and I think on the net

246

00:11:02,569 --> 00:11:01,139

within the by the end of the year we

247

00:11:08,359 --> 00:11:02,579

should have some fish up here to put in

248

00:11:09,980 --> 00:11:08,369

there and see how they work hi my name

249

00:11:12,109 --> 00:11:09,990

is Aidan Callahan I'm calling from

250

00:11:14,509 --> 00:11:12,119

Boston Massachusetts my question is for

251
00:11:16,699 --> 00:11:14,519
Joe would having a permanent low Earth

252
00:11:21,239 --> 00:11:16,709
orbit station be feasible and how do we

253
00:11:25,600 --> 00:11:23,650
yeah I definitely think it's feasible

254
00:11:27,579 --> 00:11:25,610
and you could almost look at the Space

255
00:11:29,710 --> 00:11:27,589
Station we're in now and call this a

256
00:11:32,259 --> 00:11:29,720
permanent structure it's been here for

257
00:11:33,819 --> 00:11:32,269
the past almost 12 years and we have

258
00:11:36,609 --> 00:11:33,829
agreements in place to keep it here

259
00:11:38,290 --> 00:11:36,619
until 2020 so we're looking at a 20 year

260
00:11:40,449 --> 00:11:38,300
period of having the space station so I

261
00:11:42,999 --> 00:11:40,459
think we've proven that you can't have a

262
00:11:45,100 --> 00:11:43,009
structure in low-earth orbit for a long

263
00:11:48,009 --> 00:11:45,110

period of time and it may continue even

264

00:11:50,470 --> 00:11:48,019

longer and what we really need to keep

265

00:11:52,889 --> 00:11:50,480

this one going or future stations in

266

00:11:55,030 --> 00:11:52,899

orbit is the support of the community

267

00:11:57,309 --> 00:11:55,040

you know this is an International Space

268

00:11:58,780 --> 00:11:57,319

Station it's not just one country but

269

00:12:00,549 --> 00:11:58,790

when you get the whole earth working

270

00:12:02,410 --> 00:12:00,559

together it's amazing what we can do and

271

00:12:04,749 --> 00:12:02,420

I wouldn't be surprised if a lot more

272

00:12:08,710 --> 00:12:04,759

people in the future are orbiting there

273

00:12:11,379 --> 00:12:08,720

it's just like we are today this is

274

00:12:14,439 --> 00:12:11,389

James Gomez at so much James I'm calling

275

00:12:16,449 --> 00:12:14,449

from Aliso Viejo California sunny what's

276

00:12:22,250 --> 00:12:16,459

been the most memorable event so far of

277

00:12:27,470 --> 00:12:25,700

I think probably you know coming up here

278

00:12:30,590 --> 00:12:27,480

on a Russian spacecraft the Soyuz was

279

00:12:33,410 --> 00:12:30,600

pretty unique last time I flew up here

280

00:12:35,180 --> 00:12:33,420

was on a u.s. space shuttle and that was

281

00:12:36,950 --> 00:12:35,190

just amazing you know first time going

282

00:12:38,960 --> 00:12:36,960

to space it's just awesome and the

283

00:12:40,970 --> 00:12:38,970

rockets huge and it makes a lot of noise

284

00:12:43,430 --> 00:12:40,980

but the Soyuz is something something

285

00:12:45,080 --> 00:12:43,440

different and in particular working with

286

00:12:46,940 --> 00:12:45,090

our international partners our Russian

287

00:12:48,740 --> 00:12:46,950

partners and understanding and learning

288

00:12:51,020 --> 00:12:48,750

about the history of that program and

289

00:12:53,630 --> 00:12:51,030

then you know coming here and docking to

290

00:12:56,180 --> 00:12:53,640

the International station that that part

291

00:12:58,730 --> 00:12:56,190

has been really awesome but you know

292

00:13:01,940 --> 00:12:58,740

parallel to that was when HTV when Jo

293

00:13:03,410 --> 00:13:01,950

and Aki grabbed HTV and docked that to

294

00:13:04,610 --> 00:13:03,420

the International Space Station and I

295

00:13:06,470 --> 00:13:04,620

think you're getting the gist of what

296

00:13:09,560 --> 00:13:06,480

I'm saying is when when anything new

297

00:13:11,900 --> 00:13:09,570

comes it's it's always exciting we also

298

00:13:14,120 --> 00:13:11,910

had a progress that came up to the space

299

00:13:16,160 --> 00:13:14,130

station and it launched and got here

300

00:13:18,320 --> 00:13:16,170

within one day so that's a brand new

301

00:13:20,210 --> 00:13:18,330

flight profile so that's been all of

302

00:13:21,740 --> 00:13:20,220

that dynamic stuffs been really exciting

303

00:13:23,510 --> 00:13:21,750

and I'm not saying the science isn't

304

00:13:25,970 --> 00:13:23,520

either it's just we sort of get all

305

00:13:28,070 --> 00:13:25,980

ramped up for the the dynamic parts and

306

00:13:29,840 --> 00:13:28,080

then so that makes it just a lot of fun

307

00:13:32,000 --> 00:13:29,850

to wake up the next day and see what's

308

00:13:35,930 --> 00:13:32,010

what's on the plate for for what what's

309

00:13:38,330 --> 00:13:35,940

going to happen hey guys my name is

310

00:13:39,860 --> 00:13:38,340

Yessenia Roy Oh Twitter handle yeah NASA

311

00:13:42,650 --> 00:13:39,870

seven I'm calling from Orlando Florida

312

00:13:44,690 --> 00:13:42,660

and this question is for Joe how our

313

00:13:46,370 --> 00:13:44,700

astronauts dealing with bone loss have

314

00:13:50,600 --> 00:13:46,380

any new discoveries been made to help

315

00:13:56,040 --> 00:13:53,790

yeah bone loss and muscle atrophy is a

316

00:13:57,930 --> 00:13:56,050

big problem that we have up being up

317

00:14:00,780 --> 00:13:57,940

here for a long period of time but we've

318

00:14:03,240 --> 00:14:00,790

come a long way and so for the their

319

00:14:04,860 --> 00:14:03,250

muscles and the bone we exercise every

320

00:14:06,840 --> 00:14:04,870

day for about two hours

321

00:14:10,050 --> 00:14:06,850

part of it is on this stationary bicycle

322

00:14:11,970 --> 00:14:10,060

that we have here but we also have see

323

00:14:13,770 --> 00:14:11,980

look at that that's how good it is and

324

00:14:15,410 --> 00:14:13,780

we also have a machine called a red

325

00:14:18,200 --> 00:14:15,420

which is a resistive exercise device

326

00:14:21,480 --> 00:14:18,210

that feels just like a universal machine

327

00:14:23,790 --> 00:14:21,490

in any you know back home and we have a

328

00:14:26,700 --> 00:14:23,800

treadmill that we wear a harness so we

329

00:14:28,800 --> 00:14:26,710

can run on that and that impact also

330

00:14:31,020 --> 00:14:28,810

helps with reducing the bone loss so

331

00:14:33,510 --> 00:14:31,030

with those three things we've learned a

332

00:14:35,460 --> 00:14:33,520

lot about it we're also taking part in

333

00:14:38,280 --> 00:14:35,470

an experiment where we eat special diets

334

00:14:40,560 --> 00:14:38,290

to see if the foods that we eat if that

335

00:14:42,180 --> 00:14:40,570

can change what our bone loss is like so

336

00:14:44,280 --> 00:14:42,190

we've come a long way we have a lot to

337

00:14:46,440 --> 00:14:44,290

learn and what's neat is what we learn

338

00:14:48,210 --> 00:14:46,450

up here we're also going to be be able

339

00:14:50,040 --> 00:14:48,220

to use back home so there's a lot going

340

00:15:01,500 --> 00:14:50,050

on and there's always something new to

341

00:15:05,130 --> 00:15:01,510

learn when you're exploring next collar

342

00:15:07,290 --> 00:15:05,140

Holly yes my name is Holly Smarr and I'm

343

00:15:09,210 --> 00:15:07,300

calling from Lockport New York and my

344

00:15:11,130 --> 00:15:09,220

question is may you both briefly share

345

00:15:16,009 --> 00:15:11,140

your thoughts on what the Mars Curiosity

346

00:15:20,460 --> 00:15:18,629

sure that was a pretty exciting day up

347

00:15:23,119 --> 00:15:20,470

here we actually got up a little bit

348

00:15:25,739 --> 00:15:23,129

early because it was about 5:30 our time

349

00:15:29,040 --> 00:15:25,749

GMT to see what happened and we were

350

00:15:31,590 --> 00:15:29,050

anxiously watching NASA TV through our

351

00:15:33,480 --> 00:15:31,600

radio links here to find out what

352

00:15:36,359 --> 00:15:33,490

happened and and I just think it was

353

00:15:38,759 --> 00:15:36,369

amazing I think you the whole public

354

00:15:41,369 --> 00:15:38,769

probably knows about the the landing

355

00:15:43,499 --> 00:15:41,379

profile and how it was how its entry

356

00:15:45,600 --> 00:15:43,509

profile and it's pretty amazing you know

357

00:15:47,819 --> 00:15:45,610

brand-new technology really creative

358

00:15:50,249 --> 00:15:47,829

ideas you know a great group of people

359

00:15:51,929 --> 00:15:50,259

out at JPL you know that's what's gonna

360

00:15:54,119 --> 00:15:51,939

take us into the future and get us out

361

00:15:56,509 --> 00:15:54,129

of low Earth orbit so to me I think it's

362

00:15:58,530 --> 00:15:56,519

the next step it was really awesome

363

00:16:01,199 --> 00:15:58,540

yeah and son you hit it right on the

364

00:16:03,299 --> 00:16:01,209

head with you watch the landing you felt

365

00:16:05,850 --> 00:16:03,309

that excitement that was going on at JPL

366

00:16:07,319 --> 00:16:05,860

and so don't think that NASA isn't

367

00:16:09,720 --> 00:16:07,329

exciting and we're not doing a lot of

368

00:16:12,389 --> 00:16:09,730

neat things because we are and so that

369

00:16:14,369 --> 00:16:12,399

was just another milestone as part of

370

00:16:15,720 --> 00:16:14,379

the exploration and so I think when you

371

00:16:17,910 --> 00:16:15,730

have projects like that and then

372

00:16:19,739 --> 00:16:17,920

eventually having astronauts go to Mars

373

00:16:27,600 --> 00:16:19,749

some really neat things are going to

374

00:16:29,939 --> 00:16:27,610

happen premiere most American my

375

00:16:37,019 --> 00:16:29,949

question is for Joe how is breathable

376

00:16:38,549 --> 00:16:37,029

oxygen generated aboard the station so

377

00:16:40,829 --> 00:16:38,559

basically the oxygen that we're

378

00:16:43,139 --> 00:16:40,839

generating we have two systems one on

379

00:16:44,970 --> 00:16:43,149

the the US side of it and the other one

380

00:16:46,650 --> 00:16:44,980

on the Russian segment and they both

381

00:16:49,470 --> 00:16:46,660

work the same where we're splitting

382

00:16:52,019 --> 00:16:49,480

water and from that you have hydrogen

383

00:16:53,789 --> 00:16:52,029

and oxygen we also have visiting

384

00:16:56,369 --> 00:16:53,799

vehicles that will come up and they can

385

00:16:58,859 --> 00:16:56,379

bring us oxygen and so we will also take

386

00:17:00,299 --> 00:16:58,869

it from those tanks and in case we had

387

00:17:02,579 --> 00:17:00,309

some kind of a situation where we

388

00:17:04,350 --> 00:17:02,589

couldn't make our own we have a couple

389

00:17:06,720 --> 00:17:04,360

of devices that we can go through a

390

00:17:08,490 --> 00:17:06,730

chemical reaction and produce oxygen so

391

00:17:10,590 --> 00:17:08,500

we're in good shape and with the way

392

00:17:12,149 --> 00:17:10,600

that we can recycle water now it's

393

00:17:16,500 --> 00:17:12,159

almost as if we have an endless supply

394

00:17:18,539 --> 00:17:16,510

that we can generate hi suni my name is

395

00:17:21,120 --> 00:17:18,549

Andres Almeida my name is Andres David

396

00:17:22,740 --> 00:17:21,130

I'm coming from Washington DC what other

397

00:17:29,980 --> 00:17:22,750

sorts of experiments would be conducted

398

00:17:35,330 --> 00:17:33,740

so like we alluded to earlier we're

399

00:17:37,370 --> 00:17:35,340

doing a whole myriad of experiments on

400

00:17:39,500 --> 00:17:37,380

ourselves that's you know first and

401
00:17:40,940 --> 00:17:39,510
foremost like a biology experiments

402
00:17:43,220 --> 00:17:40,950
trying to find out what happens to the

403
00:17:45,460 --> 00:17:43,230
human body living here in space for a

404
00:17:49,820 --> 00:17:45,470
long period of time and Joe touched on

405
00:17:51,980 --> 00:17:49,830
bone loss bone density muscle loss and

406
00:17:54,230 --> 00:17:51,990
density and also another experiment

407
00:17:56,240 --> 00:17:54,240
cardiac find out what is actually going

408
00:17:58,160 --> 00:17:56,250
on with your heart in space you know

409
00:18:00,140 --> 00:17:58,170
it's a muscle so it absolutely you know

410
00:18:01,610 --> 00:18:00,150
probably more than likely shrinks a

411
00:18:03,770 --> 00:18:01,620
little bit in space and so how is that

412
00:18:06,200 --> 00:18:03,780
all affecting the way we're doing stuff

413
00:18:08,630 --> 00:18:06,210

on ourselves also we're doing reaction

414

00:18:11,600 --> 00:18:08,640

type testing how does the body over time

415

00:18:13,490 --> 00:18:11,610

react may that that might change the way

416

00:18:15,380 --> 00:18:13,500

we design control systems if we're in

417

00:18:17,000 --> 00:18:15,390

space for a long time going like to Mars

418

00:18:19,310 --> 00:18:17,010

and maybe might have to make a control

419

00:18:21,560 --> 00:18:19,320

system that would be a little bit more

420

00:18:23,390 --> 00:18:21,570

applicable to it it changed reaction

421

00:18:24,650 --> 00:18:23,400

time but other things who are doing

422

00:18:26,150 --> 00:18:24,660

those are just things on ourselves and

423

00:18:28,010 --> 00:18:26,160

there's more than than what I'm saying

424

00:18:30,860 --> 00:18:28,020

but there's also like materials type

425

00:18:32,720 --> 00:18:30,870

stuff capillary flow the you know the

426

00:18:35,570 --> 00:18:32,730

burning fire experiments that I was

427

00:18:37,070 --> 00:18:35,580

talking about that Joe was talking about

428

00:18:40,250 --> 00:18:37,080

there's experiments that are going on

429

00:18:42,560 --> 00:18:40,260

outside with AMS there's Robonaut type

430

00:18:44,270 --> 00:18:42,570

of experiments so there's a ton of

431

00:18:46,220 --> 00:18:44,280

things also like I talked about earlier

432

00:18:48,650 --> 00:18:46,230

the you know the animals that we have up

433

00:18:50,930 --> 00:18:48,660

here the spiders the fish and you know

434

00:18:53,330 --> 00:18:50,940

tons of experiments from like Joe said

435

00:18:55,280 --> 00:18:53,340

all over the world and so I mean too

436

00:18:56,540 --> 00:18:55,290

many even to talk about and like Joe

437

00:18:58,280 --> 00:18:56,550

said on the NASA website there's

438

00:18:59,900 --> 00:18:58,290

probably a ton of them if you want to

439

00:19:02,300 --> 00:18:59,910

take a look and see what we're doing on

440

00:19:03,890 --> 00:19:02,310

a daily basis basis and I'm sort of

441

00:19:05,720 --> 00:19:03,900

surprised every day I wake up and I look

442

00:19:06,980 --> 00:19:05,730

at our schedule and there's something

443

00:19:10,400 --> 00:19:06,990

new on there that I've never done before

444

00:19:12,140 --> 00:19:10,410

so it's exciting to be up here and we we

445

00:19:16,550 --> 00:19:12,150

appreciate all the pis who are taking

446

00:19:18,770 --> 00:19:16,560

advantage of this laboratory station

447

00:19:20,360 --> 00:19:18,780

this is JC PA oh thank you very much for

448

00:19:22,040 --> 00:19:20,370

all the wonderful answers you guys

449

00:19:24,560 --> 00:19:22,050

provided we were able to get through all

450

00:19:27,470 --> 00:19:24,570

of the colors and we have run out of

451
00:19:30,170 --> 00:19:27,480
time and as always we really appreciate

452
00:19:33,720 --> 00:19:30,180
everything you do for us and happy 100

453
00:19:37,990 --> 00:19:36,580
thank you very much it's gone by quickly

454
00:19:40,900 --> 00:19:38,000
and thanks for joining us today it was

455
00:19:42,730 --> 00:19:40,910
fun talking to you all the station this

456
00:19:46,690 --> 00:19:42,740
is Houston ACR that concludes the event

457
00:19:48,970 --> 00:19:46,700
thank you thank you to all participants