



1  
00:00:09,669 --> 00:00:06,789  
oh sweet ronnie family and peter good to

2  
00:00:11,990 --> 00:00:09,679  
see you hey uh welcome aboard everybody

3  
00:00:12,789 --> 00:00:12,000  
uh welcome to our little zero g fantasy

4  
00:00:14,390 --> 00:00:12,799  
land

5  
00:00:15,749 --> 00:00:14,400  
and it's great to have you guys in

6  
00:00:17,029 --> 00:00:15,759  
mission control

7  
00:00:18,390 --> 00:00:17,039  
yeah we understand you're going to

8  
00:00:20,950 --> 00:00:18,400  
provide us some entertainment this

9  
00:00:23,349 --> 00:00:20,960  
evening you know nasa flight break made

10  
00:00:26,150 --> 00:00:23,359  
us close our windows today we can't even

11  
00:00:28,470 --> 00:00:26,160  
look out the windows all night so yeah

12  
00:00:30,150 --> 00:00:28,480  
that's that's right

13  
00:00:31,830 --> 00:00:30,160

they're guilty so it's good to see you

14

00:00:33,030 --> 00:00:31,840

guys and have a have somebody to talk to

15

00:00:33,910 --> 00:00:33,040

on the planet earth how are you guys

16

00:00:38,470 --> 00:00:33,920

doing

17

00:00:40,790 --> 00:00:38,480

an amazing day down here and uh all the

18

00:00:43,510 --> 00:00:40,800

more exciting for seeing you guys

19

00:00:45,430 --> 00:00:43,520

and i i gather we got uh drums and

20

00:00:49,190 --> 00:00:45,440

guitar

21

00:00:54,310 --> 00:00:51,750

we have uh we don't have rubs but we

22

00:00:55,830 --> 00:00:54,320

have drums stick and we have things to

23

00:00:56,869 --> 00:00:55,840

bang on but i can't tell you what they

24

00:00:58,389 --> 00:00:56,879

are because the flight director's

25

00:01:00,790 --> 00:00:58,399

sitting next to you again

26

00:01:03,110 --> 00:01:00,800

but uh we do have musical talent on

27

00:01:05,270 --> 00:01:03,120

board chris chris is like

28

00:01:08,550 --> 00:01:05,280

he has almost a living as a musician as

29

00:01:10,469 --> 00:01:08,560

a second wife i i would love to have the

30

00:01:12,550 --> 00:01:10,479

talent to do that but i don't have it

31

00:01:15,109 --> 00:01:12,560

and tom has it

32

00:01:17,350 --> 00:01:15,119

but uh we uh we all we all share the

33

00:01:19,510 --> 00:01:17,360

love of it and uh we like seeing you on

34

00:01:20,870 --> 00:01:19,520

the ground i'm gonna let you guys talk

35

00:01:22,630 --> 00:01:20,880

because it's such a pleasure to have you

36

00:01:24,469 --> 00:01:22,640

on board hopefully we'll get to spend

37

00:01:25,910 --> 00:01:24,479

just a little time and maybe the kids

38

00:01:27,990 --> 00:01:25,920

can have some questions or something if

39

00:01:30,550 --> 00:01:28,000

they want to

40

00:01:47,030 --> 00:01:30,560

i can see it's uh jimi hendrix eats your

41

00:01:56,389 --> 00:01:48,630

there you go playing your song way up

42

00:02:11,270 --> 00:01:58,069

i'm playing it in d hopefully you played

43

00:02:23,670 --> 00:02:14,390

hello

44

00:02:23,680 --> 00:02:36,470

um

45

00:02:45,750 --> 00:02:39,509

a very nervous boy here

46

00:02:49,589 --> 00:02:47,750

oh that's okay

47

00:02:51,430 --> 00:02:49,599

it's not it's not every day you have to

48

00:02:53,670 --> 00:02:51,440

talk with people on tv but it's really

49

00:02:55,190 --> 00:02:53,680

nice most of the time we don't get back

50

00:02:57,110 --> 00:02:55,200

in mission control so it's really nice

51  
00:02:59,110 --> 00:02:57,120  
to see you guys there today and i see

52  
00:03:00,869 --> 00:02:59,120  
you've got a lot of followers you know

53  
00:03:02,630 --> 00:03:00,879  
usually special guests only have one

54  
00:03:05,190 --> 00:03:02,640  
astronaut to escort them but i've seen

55  
00:03:07,190 --> 00:03:05,200  
multiple astronauts in there today so

56  
00:03:09,910 --> 00:03:07,200  
this uh they must want to pay special

57  
00:03:11,990 --> 00:03:09,920  
attention and uh of course uh of course

58  
00:03:13,910 --> 00:03:12,000  
it's it's great always great to have

59  
00:03:15,670 --> 00:03:13,920  
people come visit mission control we

60  
00:03:17,270 --> 00:03:15,680  
know you come come kind of from a

61  
00:03:20,070 --> 00:03:17,280  
different world and

62  
00:03:20,949 --> 00:03:20,080  
we in the technical world and at nasa

63  
00:03:22,790 --> 00:03:20,959

really

64

00:03:24,550 --> 00:03:22,800

even even though uh

65

00:03:26,550 --> 00:03:24,560

even though we spent most of our time in

66

00:03:28,070 --> 00:03:26,560

technical pursuits we do appreciate uh

67

00:03:30,229 --> 00:03:28,080

what you're all about and what you do

68

00:03:31,589 --> 00:03:30,239

well we really appreciate what you guys

69

00:03:34,550 --> 00:03:31,599

are doing and

70

00:03:41,990 --> 00:03:34,560

it's it's very exciting for us

71

00:03:46,149 --> 00:03:44,390

yes you bet we can do some astronaut

72

00:03:47,670 --> 00:03:46,159

tricks for you and you guys could do

73

00:03:49,270 --> 00:03:47,680

some tricks there stand up on top of the

74

00:03:55,990 --> 00:03:49,280

console and do a backflip do something

75

00:03:56,000 --> 00:04:00,550

very cool

76

00:04:05,350 --> 00:04:03,030

uh and we gather yeah you recorded a

77

00:04:10,550 --> 00:04:05,360

song up there too

78

00:04:15,509 --> 00:04:13,670

actually uh yeah a couple um

79

00:04:17,110 --> 00:04:15,519

my brother and i wrote a a space

80

00:04:19,590 --> 00:04:17,120

christmas carol called jewel in the

81

00:04:21,430 --> 00:04:19,600

night and it was uh released just before

82

00:04:23,430 --> 00:04:21,440

christmas and then

83

00:04:25,110 --> 00:04:23,440

with the canadian band

84

00:04:27,430 --> 00:04:25,120

uh called the bare naked ladies we

85

00:04:29,510 --> 00:04:27,440

recorded a school a song that's being

86

00:04:31,749 --> 00:04:29,520

used in schools all across canada with

87

00:04:35,110 --> 00:04:31,759

the coalition for music education

88

00:04:36,550 --> 00:04:35,120

a song called iss is somebody singing

89

00:04:38,870 --> 00:04:36,560

and it came out really nice it was just

90

00:04:40,150 --> 00:04:38,880

released i think last week and uh we're

91

00:04:40,870 --> 00:04:40,160

really proud of it

92

00:04:43,590 --> 00:04:40,880

it's

93

00:04:44,950 --> 00:04:43,600

lovely to be able to tie the newness of

94

00:04:46,710 --> 00:04:44,960

this experience

95

00:04:48,950 --> 00:04:46,720

with the the long tradition and love of

96

00:04:51,030 --> 00:04:48,960

music on earth and it's just natural but

97

00:04:53,110 --> 00:04:51,040

it's really beautiful when it happens

98

00:05:00,950 --> 00:04:53,120

sounds fantastic i look forward to

99

00:05:04,469 --> 00:05:02,150

all right well they're treating you well

100

00:05:06,950 --> 00:05:04,479

down there uh what else you got oh yeah

101  
00:05:11,749 --> 00:05:06,960  
no uh we have to keep the youngest of

102  
00:05:13,350 --> 00:05:11,759  
our uh clan here uh well fed but uh

103  
00:05:15,189 --> 00:05:13,360  
he's doing very well and we've we've

104  
00:05:16,629 --> 00:05:15,199  
been fed and

105  
00:05:18,629 --> 00:05:16,639  
i think luke's just showing off what

106  
00:05:32,950 --> 00:05:18,639  
we're eating but uh

107  
00:05:36,629 --> 00:05:34,950  
now we just wanted to ask i think if

108  
00:05:39,430 --> 00:05:36,639  
people were interested in scuba diving

109  
00:05:42,629 --> 00:05:39,440  
before you did your training

110  
00:05:44,469 --> 00:05:42,639  
if you had any any divers

111  
00:05:46,390 --> 00:05:44,479  
interested in

112  
00:05:49,990 --> 00:05:46,400  
in diving in marine life before you did

113  
00:05:54,310 --> 00:05:52,469

as a matter of fact uh yes you know we

114

00:05:56,469 --> 00:05:54,320

love exploration we love going places

115

00:05:58,629 --> 00:05:56,479

where humans don't usually go and it

116

00:06:00,390 --> 00:05:58,639

takes a little bit of technology and a

117

00:06:02,629 --> 00:06:00,400

little special training to go there as a

118

00:06:04,150 --> 00:06:02,639

matter of fact uh catfield and i when we

119

00:06:06,469 --> 00:06:04,160

started training for this mission two

120

00:06:07,909 --> 00:06:06,479

and a half almost three years ago

121

00:06:09,830 --> 00:06:07,919

we started off

122

00:06:11,510 --> 00:06:09,840

on a scuba trip we lived under water in

123

00:06:12,870 --> 00:06:11,520

a laboratory on the bottom of the ocean

124

00:06:15,189 --> 00:06:12,880

for two weeks

125

00:06:17,270 --> 00:06:15,199

and we left the habitat with our deep

126

00:06:18,390 --> 00:06:17,280

sea

127

00:06:20,469 --> 00:06:18,400

suits on

128

00:06:23,110 --> 00:06:20,479

and did some research and did some

129

00:06:24,870 --> 00:06:23,120

exploration down there so uh

130

00:06:26,870 --> 00:06:24,880

the the two are very similar in a lot of

131

00:06:28,710 --> 00:06:26,880

ways uh living in little modules and

132

00:06:30,550 --> 00:06:28,720

tight spaces but seeing absolutely

133

00:06:33,590 --> 00:06:30,560

incredible and beautiful things that are

134

00:06:35,670 --> 00:06:33,600

very rare to have a chance to see so

135

00:06:38,150 --> 00:06:35,680

yeah i think for most astronauts scuba

136

00:06:39,430 --> 00:06:38,160

diving is very much a part of their past

137

00:06:43,189 --> 00:06:39,440

and is a

138

00:06:43,199 --> 00:06:45,909

fantastic

139

00:06:52,230 --> 00:06:50,150

and fort wayne is that kevin

140

00:06:54,629 --> 00:06:52,240

because no i used to spend quite a long

141

00:06:57,350 --> 00:06:54,639

time in full win and

142

00:06:59,350 --> 00:06:57,360

we had a promoter from fort wayne and so

143

00:07:05,510 --> 00:06:59,360

um i think they would book us when no

144

00:07:10,390 --> 00:07:08,309

well the truth is i just got off of uh

145

00:07:12,790 --> 00:07:10,400

talking to a school in fort wayne

146

00:07:15,189 --> 00:07:12,800

tonight and my sister lives there and

147

00:07:16,469 --> 00:07:15,199

she supplied me with this shirt so i i

148

00:07:18,469 --> 00:07:16,479

knew i would be in trouble when i went

149

00:07:19,909 --> 00:07:18,479

back to the planet if i didn't show up

150

00:07:22,230 --> 00:07:19,919

or at least part of the event in this

151  
00:07:23,510 --> 00:07:22,240  
four way and t-shirts and uh so we just

152  
00:07:24,870 --> 00:07:23,520  
finished that and we were just having a

153  
00:07:27,270 --> 00:07:24,880  
bite when we got the call that you were

154  
00:07:30,070 --> 00:07:27,280  
in mission control so uh that's why we

155  
00:07:31,670 --> 00:07:30,080  
just didn't we we usually dress up just

156  
00:07:33,110 --> 00:07:31,680  
a little bit more for the events tonight

157  
00:07:35,189 --> 00:07:33,120  
we're kind of uh

158  
00:07:36,710 --> 00:07:35,199  
heading toward bed in about an hour uh

159  
00:07:38,309 --> 00:07:36,720  
we turn in and everything has to be

160  
00:07:40,710 --> 00:07:38,319  
quite on the space station tonight for a

161  
00:07:43,110 --> 00:07:40,720  
very special experiment going on where

162  
00:07:46,150 --> 00:07:43,120  
we have to be really careful so uh we're

163  
00:07:47,990 --> 00:07:46,160

just kind of uh in our wine down there

164

00:07:49,749 --> 00:07:48,000

yeah this is uh this is called space

165

00:07:51,909 --> 00:07:49,759

station casual right here

166

00:07:59,189 --> 00:07:51,919

it's very elegant what's the uh what's

167

00:08:03,430 --> 00:08:01,270

it's called marangoni and what it is

168

00:08:06,309 --> 00:08:03,440

actually is a liquid bridge

169

00:08:08,390 --> 00:08:06,319

so what they do is uh actually make a

170

00:08:10,070 --> 00:08:08,400

tube like structure made of liquid

171

00:08:11,430 --> 00:08:10,080

something you absolutely cannot do on

172

00:08:13,430 --> 00:08:11,440

the ground

173

00:08:15,430 --> 00:08:13,440

you need a very

174

00:08:17,350 --> 00:08:15,440

very fine zero gravity to do it and then

175

00:08:19,270 --> 00:08:17,360

they apply a temperature gradient across

176

00:08:21,350 --> 00:08:19,280

it so basically what this is doing is

177

00:08:23,830 --> 00:08:21,360

looking at fluid physics things you can

178

00:08:25,189 --> 00:08:23,840

only talk about in a physics textbook

179

00:08:28,230 --> 00:08:25,199

they're actually

180

00:08:30,150 --> 00:08:28,240

looking at it and studying it and able

181

00:08:32,389 --> 00:08:30,160

to determine exactly how the fluid and

182

00:08:33,990 --> 00:08:32,399

the temperature differences behave and

183

00:08:35,750 --> 00:08:34,000

in some ways you know discovering new

184

00:08:36,949 --> 00:08:35,760

physical principles based on that you

185

00:08:38,870 --> 00:08:36,959

know we don't have to guess anymore they

186

00:08:54,230 --> 00:08:38,880

can actually find out what it's like up

187

00:08:58,790 --> 00:08:56,470

well we think uh what you're doing up

188

00:09:00,790 --> 00:08:58,800

there is amazing and it's wonderful to

189

00:09:01,829 --> 00:09:00,800

see people from so many countries

190

00:09:03,110 --> 00:09:01,839

involved

191

00:09:04,550 --> 00:09:03,120

um and

192

00:09:06,949 --> 00:09:04,560

we we

193

00:09:12,230 --> 00:09:06,959

i feel very honored to be talking to you

194

00:09:16,790 --> 00:09:15,030

well it was it was great and it is

195

00:09:19,190 --> 00:09:16,800

it's a big thanks to all the countries

196

00:09:20,949 --> 00:09:19,200

who take the time to do this uh tom's

197

00:09:22,790 --> 00:09:20,959

going and getting boys to play with here

198

00:09:24,630 --> 00:09:22,800

they're all coming coming this way some

199

00:09:26,470 --> 00:09:24,640

of it's a little dangerous these altoids

200

00:09:28,230 --> 00:09:26,480

could fly apart and just cause a lot of

201  
00:09:30,070 --> 00:09:28,240  
havoc they're taped close with great

202  
00:09:31,750 --> 00:09:30,080  
tape though so just in case

203  
00:09:34,070 --> 00:09:31,760  
but anyway yeah all the all the

204  
00:09:36,150 --> 00:09:34,080  
countries participating in this thing uh

205  
00:09:37,990 --> 00:09:36,160  
i think it's just a wonderful thing that

206  
00:09:39,430 --> 00:09:38,000  
uh that 15 of the most affluent

207  
00:09:40,630 --> 00:09:39,440  
countries got together and said you know

208  
00:09:42,470 --> 00:09:40,640  
what we're going to do something for

209  
00:09:44,389 --> 00:09:42,480  
people a hundred years from now some of

210  
00:09:46,710 --> 00:09:44,399  
this stuff well maybe we may not see it

211  
00:09:48,389 --> 00:09:46,720  
in five years might not see it in 50

212  
00:09:49,590 --> 00:09:48,399  
years but 100 years from now what we're

213  
00:09:52,550 --> 00:09:49,600

doing today i think is going to make a

214

00:09:53,350 --> 00:09:52,560

difference so uh we are very lucky up

215

00:09:57,350 --> 00:09:53,360

here

216

00:10:00,150 --> 00:09:57,360

everybody could come and spend some time

217

00:10:02,389 --> 00:10:00,160

up here and uh we have to get there with

218

00:10:03,910 --> 00:10:02,399

you today uh one of these days baby

219

00:10:06,230 --> 00:10:03,920

those those kids sitting right down

220

00:10:08,470 --> 00:10:06,240

there will get to make the trip i do i

221

00:10:10,310 --> 00:10:08,480

really do hope they can if they want to

222

00:10:12,470 --> 00:10:10,320

and uh and see what this is all about

223

00:10:13,829 --> 00:10:12,480

it's a it's a it's a wonderful place and

224

00:10:15,350 --> 00:10:13,839

there are a lot of people on the ground

225

00:10:17,509 --> 00:10:15,360

that put their hearts and souls and

226

00:10:18,790 --> 00:10:17,519

lives into it and it's going to make a

227

00:10:20,389 --> 00:10:18,800

difference someday to those future

228

00:10:21,910 --> 00:10:20,399

generations uh the ones we're seeing on

229

00:10:24,870 --> 00:10:21,920

the screen right there so we're very

230

00:10:27,190 --> 00:10:24,880

excited great pleasure for us to have

231

00:10:29,190 --> 00:10:27,200

this opportunity and thank you so much

232

00:10:30,949 --> 00:10:29,200

and best of luck to all of you for the

233

00:10:33,269 --> 00:10:30,959

rest of your time up there

234

00:10:34,710 --> 00:10:33,279

and safe travels back

235

00:10:35,829 --> 00:10:34,720

bye-bye bye

236

00:10:43,269 --> 00:10:35,839

thank you

237

00:10:47,430 --> 00:10:45,110

bye-bye to all of you it's great to hear

238

00:10:49,030 --> 00:10:47,440

your voices have a great day

239

00:10:50,389 --> 00:10:49,040

a little better now i love the planet