



EXIT  
EMERGENCY

EMER 1  
EMER 2

TO N

1  
00:00:07,430 --> 00:00:02,070  
station this is houston are you ready

2  
00:00:10,950 --> 00:00:08,629  
houston station we're ready for the

3  
00:00:12,629 --> 00:00:10,960  
event

4  
00:00:14,470 --> 00:00:12,639  
pbs radio this is mission control

5  
00:00:15,350 --> 00:00:14,480  
houston please call station for a voice

6  
00:00:17,269 --> 00:00:15,360  
check

7  
00:00:21,590 --> 00:00:17,279  
station good morning this is cbs news

8  
00:00:25,029 --> 00:00:23,590  
we've got you loud and clear good

9  
00:00:26,630 --> 00:00:25,039  
morning

10  
00:00:28,710 --> 00:00:26,640  
and flight engineer don pettit good

11  
00:00:30,710 --> 00:00:28,720  
morning this is peter king bill harwood

12  
00:00:32,310 --> 00:00:30,720  
will be uh joining me in just a moment

13  
00:00:34,549 --> 00:00:32,320

and we just want to start with the news

14

00:00:35,910 --> 00:00:34,559

of the day and that is uh this solar

15

00:00:37,350 --> 00:00:35,920

storm that we've all been talking about

16

00:00:38,950 --> 00:00:37,360

that's pretty much turned out to be a

17

00:00:40,470 --> 00:00:38,960

bust but

18

00:00:42,549 --> 00:00:40,480

we're wondering and i think a lot of

19

00:00:44,709 --> 00:00:42,559

people would love to know for commander

20

00:00:50,709 --> 00:00:44,719

burbank what is protecting you from uh

21

00:00:54,630 --> 00:00:53,029

well it yeah you should well in general

22

00:00:56,310 --> 00:00:54,640

uh peter the same thing that's

23

00:00:58,150 --> 00:00:56,320

protecting you and all the folks on

24

00:01:01,189 --> 00:00:58,160

planet earth most of the work is done by

25

00:01:02,869 --> 00:01:01,199

the earth's magnetosphere and uh we're

26

00:01:03,990 --> 00:01:02,879

we're above the atmosphere so there's

27

00:01:05,910 --> 00:01:04,000

there's some of the protection that you

28

00:01:08,149 --> 00:01:05,920

also get by the atmosphere that that we

29

00:01:10,070 --> 00:01:08,159

don't benefit from uh the space station

30

00:01:11,750 --> 00:01:10,080

hull itself actually protects us some

31

00:01:14,390 --> 00:01:11,760

and it kind of depends on the energy of

32

00:01:17,109 --> 00:01:14,400

the particles don here has a uh a

33

00:01:18,390 --> 00:01:17,119

particle uh detector uh that's actually

34

00:01:19,910 --> 00:01:18,400

showing you i don't know if you're able

35

00:01:22,310 --> 00:01:19,920

to hear it at all but it actually gives

36

00:01:24,070 --> 00:01:22,320

you an led readout and it'll it'll

37

00:01:26,230 --> 00:01:24,080

actually indicate uh

38

00:01:27,109 --> 00:01:26,240

particle events and depending on where

39

00:01:28,630 --> 00:01:27,119

we are

40

00:01:30,230 --> 00:01:28,640

in our orbit there'll be times when

41

00:01:31,590 --> 00:01:30,240

that'll actually be a little bit more

42

00:01:33,429 --> 00:01:31,600

energetic and if the sun's more

43

00:01:35,350 --> 00:01:33,439

energetic you'll actually see an

44

00:01:37,190 --> 00:01:35,360

indication on here as well

45

00:01:38,950 --> 00:01:37,200

if the situation were to become more

46

00:01:41,030 --> 00:01:38,960

dangerous

47

00:01:42,550 --> 00:01:41,040

we are hearing that uh thank you for

48

00:01:44,230 --> 00:01:42,560

that if the situation were to become

49

00:01:51,270 --> 00:01:44,240

more dangerous where would you go for

50

00:01:53,830 --> 00:01:52,389

there's actually a place in the back

51  
00:01:55,670 --> 00:01:53,840  
part of the space station in the service

52  
00:01:57,190 --> 00:01:55,680  
module it's probably the best shielded

53  
00:01:59,350 --> 00:01:57,200  
place we have on space station from a

54  
00:02:01,190 --> 00:01:59,360  
radiation standpoint you know ultimately

55  
00:02:03,910 --> 00:02:01,200  
if it got serious enough then you always

56  
00:02:05,510 --> 00:02:03,920  
have the capability of returning and in

57  
00:02:06,709 --> 00:02:05,520  
low-earth orbit generally speaking i

58  
00:02:09,029 --> 00:02:06,719  
don't think that's ever been really a

59  
00:02:11,589 --> 00:02:09,039  
big issue we get reports and the space

60  
00:02:14,309 --> 00:02:11,599  
flight meteorological folks that that

61  
00:02:16,309 --> 00:02:14,319  
track uh this for nasa give us reports

62  
00:02:18,070 --> 00:02:16,319  
regularly the doctors track it as well

63  
00:02:20,790 --> 00:02:18,080

we wear dosimeters we actually have

64

00:02:22,710 --> 00:02:20,800

dosimeters in our pockets we take those

65

00:02:25,030 --> 00:02:22,720

up with us uphill and have them while

66

00:02:27,110 --> 00:02:25,040

we're on orbit as well and we got lots

67

00:02:29,670 --> 00:02:27,120

of lots of folks and uh lots of

68

00:02:32,070 --> 00:02:29,680

technology that kind of has our back uh

69

00:02:33,430 --> 00:02:32,080

when it comes to radiation great and for

70

00:02:35,110 --> 00:02:33,440

don you know we've seen some pretty

71

00:02:37,430 --> 00:02:35,120

amazing pictures that you guys have sent

72

00:02:39,350 --> 00:02:37,440

back especially the northern lights but

73

00:02:41,190 --> 00:02:39,360

we'd love a word picture on what you've

74

00:02:42,470 --> 00:02:41,200

been able to see not just with the

75

00:02:45,509 --> 00:02:42,480

northern lights but if you've been able

76

00:02:47,830 --> 00:02:45,519

to observe any of that sun activity uh

77

00:02:51,830 --> 00:02:47,840

uh out further into deep space from your

78

00:02:55,670 --> 00:02:53,910

right now

79

00:02:58,390 --> 00:02:55,680

we have good viewing in the southern

80

00:03:01,350 --> 00:02:58,400

hemisphere uh during the night time

81

00:03:04,309 --> 00:03:01,360

so we're looking at aurora australialis

82

00:03:07,030 --> 00:03:04,319

at if if it wasn't for this press

83

00:03:09,270 --> 00:03:07,040

interview right now i'd be in the cupola

84

00:03:11,270 --> 00:03:09,280

taking pictures because it's we're

85

00:03:14,229 --> 00:03:11,280

currently between antarctica and

86

00:03:16,710 --> 00:03:14,239

australia and that's where the the hot

87

00:03:22,869 --> 00:03:16,720

region so to speak uh and my and this

88

00:03:22,879 --> 00:03:29,350

time

89

00:03:29,360 --> 00:03:32,470

roger

90

00:03:36,470 --> 00:03:34,789

uh don we lost uh lost the last part of

91

00:03:40,869 --> 00:03:36,480

your answer if you could backtrack just

92

00:03:43,910 --> 00:03:41,990

okay the

93

00:03:46,229 --> 00:03:43,920

uh right now we're looking at aurora

94

00:03:48,550 --> 00:03:46,239

australialis are the phase of our flight

95

00:03:49,350 --> 00:03:48,560

is conducive for looking at that

96

00:03:50,630 --> 00:03:49,360

and

97

00:03:53,190 --> 00:03:50,640

we're seeing

98

00:03:55,670 --> 00:03:53,200

good displays of that and it looks like

99

00:03:58,830 --> 00:03:55,680

luminous amoebas crawling around in the

100

00:04:00,630 --> 00:03:58,840

sky uh aurora is one of the the most

101  
00:04:02,630 --> 00:04:00,640  
beautiful uh

102  
00:04:05,990 --> 00:04:02,640  
natural phenomenology that you could see

103  
00:04:07,589 --> 00:04:06,000  
at night time when you're in orbit

104  
00:04:09,190 --> 00:04:07,599  
hey guys this is bill harwood over at

105  
00:04:10,550 --> 00:04:09,200  
the kennedy space center and don that's

106  
00:04:12,630 --> 00:04:10,560  
a fabulous description you know we've

107  
00:04:14,630 --> 00:04:12,640  
seen some video in recent weeks

108  
00:04:17,189 --> 00:04:14,640  
time lapse stuff that shows the aurora

109  
00:04:18,550 --> 00:04:17,199  
with uh with with great effect i think

110  
00:04:24,310 --> 00:04:18,560  
on the ground but of course nobody's got

111  
00:04:29,830 --> 00:04:27,590  
you know i i also like to say that that

112  
00:04:31,510 --> 00:04:29,840  
there should have been a greek goddess

113  
00:04:33,189 --> 00:04:31,520

of aurora we have the goddess of the

114

00:04:35,030 --> 00:04:33,199

rainbow the goddess of the sky the

115

00:04:37,590 --> 00:04:35,040

goddess of waterfalls and the goddess of

116

00:04:39,830 --> 00:04:37,600

all these other things uh it's too you

117

00:04:44,070 --> 00:04:39,840

know aurora is something that there

118

00:04:45,510 --> 00:04:44,080

should be a goddess of aurora

119

00:04:47,590 --> 00:04:45,520

yeah i guess there should that's a

120

00:04:50,070 --> 00:04:47,600

pretty good description hey let me shift

121

00:04:51,670 --> 00:04:50,080

gears real quick and uh and touch on a

122

00:04:53,430 --> 00:04:51,680

couple of other things and first let me

123

00:04:54,790 --> 00:04:53,440

ask you a question dan i was thinking

124

00:04:56,710 --> 00:04:54,800

the other day that if this had been the

125

00:04:59,110 --> 00:04:56,720

normal schedule you'd be packing up i

126  
00:05:00,469 --> 00:04:59,120  
guess to to head out in a week or so and

127  
00:05:01,590 --> 00:05:00,479  
come home but instead of course you're

128  
00:05:02,550 --> 00:05:01,600  
here until

129  
00:05:06,950 --> 00:05:02,560  
uh

130  
00:05:08,790 --> 00:05:06,960  
how what kind of adjustment did that

131  
00:05:10,870 --> 00:05:08,800  
require of you to kind of reset your

132  
00:05:15,670 --> 00:05:10,880  
your psychological clock i guess for an

133  
00:05:19,590 --> 00:05:17,590  
actually bill i think everybody

134  
00:05:20,950 --> 00:05:19,600  
everybody on board was was very happy to

135  
00:05:22,310 --> 00:05:20,960  
have a little bit more time here we

136  
00:05:25,270 --> 00:05:22,320  
actually lost some time on our

137  
00:05:27,830 --> 00:05:25,280  
expedition uh anton anatoly and i uh

138  
00:05:29,510 --> 00:05:27,840

because of a delay in our launch and uh

139

00:05:31,270 --> 00:05:29,520

we were actually kind of happy to get

140

00:05:32,950 --> 00:05:31,280

the time back on the other end now it's

141

00:05:34,950 --> 00:05:32,960

unfortunate and certainly it's a

142

00:05:36,870 --> 00:05:34,960

difficult thing to work through from an

143

00:05:39,189 --> 00:05:36,880

engineering standpoint to have to

144

00:05:41,110 --> 00:05:39,199

accelerate the the processing for the

145

00:05:43,110 --> 00:05:41,120

other soyuz vehicles but just on a

146

00:05:44,870 --> 00:05:43,120

purely personal uh

147

00:05:46,550 --> 00:05:44,880

basis it's great to have a little bit

148

00:05:47,749 --> 00:05:46,560

more time up here

149

00:05:49,830 --> 00:05:47,759

yeah i bet especially when you get to

150

00:05:51,909 --> 00:05:49,840

see something like these aurora let me

151

00:05:53,350 --> 00:05:51,919

ask don pettit a quick question uh you

152

00:05:55,590 --> 00:05:53,360

know we were out here i guess a week or

153

00:05:57,590 --> 00:05:55,600

so ago and spacex stood up to the falcon

154

00:05:58,790 --> 00:05:57,600

9 and the dragon on top and

155

00:06:00,950 --> 00:05:58,800

i guess that thing's supposed to

156

00:06:03,189 --> 00:06:00,960

actually get there around the third of

157

00:06:05,029 --> 00:06:03,199

may on the current schedule anyway uh

158

00:06:07,029 --> 00:06:05,039

can you give us a little sense of

159

00:06:09,189 --> 00:06:07,039

what you guys have to do i know dan will

160

00:06:11,189 --> 00:06:09,199

be gone but what you and andre have to

161

00:06:13,270 --> 00:06:11,199

do to get ready for that to be prepared

162

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

for it and uh and

163

00:06:17,830 --> 00:06:14,880

or are you already ready i'm not sure

164

00:06:20,309 --> 00:06:17,840

how much additional work is required

165

00:06:22,150 --> 00:06:20,319

additional work is required there's a

166

00:06:23,590 --> 00:06:22,160

fair amount of work when a visited

167

00:06:28,309 --> 00:06:23,600

vehicle comes up

168

00:06:31,670 --> 00:06:28,319

and a dragon and cygnus and htv

169

00:06:34,070 --> 00:06:31,680

all come close to station and then we

170

00:06:36,469 --> 00:06:34,080

snag them with a robotic arm and it's

171

00:06:38,710 --> 00:06:36,479

kind of like a lasso and a

172

00:06:40,550 --> 00:06:38,720

a steer in the rodeo

173

00:06:43,029 --> 00:06:40,560

hopefully it's not going to be bucket so

174

00:06:46,710 --> 00:06:43,039

much and we just fly into it with the

175

00:06:50,309 --> 00:06:46,720

arm and and uh and grapple it and then

176

00:06:51,909 --> 00:06:50,319

we birth the the spacecraft to one of

177

00:06:53,350 --> 00:06:51,919

our uh

178

00:06:55,990 --> 00:06:53,360

birthing ports

179

00:07:01,350 --> 00:06:56,000

and and then then we uh open up the

180

00:07:05,189 --> 00:07:03,270

this is peter again a question for both

181

00:07:07,189 --> 00:07:05,199

of you this has to do with the extended

182

00:07:09,029 --> 00:07:07,199

stay and uh

183

00:07:10,230 --> 00:07:09,039

i'm asking this because i got my refund

184

00:07:12,309 --> 00:07:10,240

today i'm wondering if you guys have

185

00:07:13,990 --> 00:07:12,319

both gotten your taxes done

186

00:07:19,029 --> 00:07:14,000

and uh if there's anything you have to

187

00:07:23,990 --> 00:07:21,189

i haven't filed my taxes because i was

188

00:07:26,790 --> 00:07:24,000

in orbit i but i don't think that's

189

00:07:30,070 --> 00:07:26,800

much of an excuse or i i won't be filing

190

00:07:32,070 --> 00:07:30,080

mine but i did put in an extension

191

00:07:33,990 --> 00:07:32,080

before launch i figured that would be a

192

00:07:36,870 --> 00:07:34,000

safe thing to do

193

00:07:38,629 --> 00:07:36,880

commander same here

194

00:07:41,110 --> 00:07:38,639

smart move and good planning on both

195

00:07:42,710 --> 00:07:41,120

your parts you know this is an election

196

00:07:45,189 --> 00:07:42,720

year and you know later on we'll be

197

00:07:46,869 --> 00:07:45,199

asking about people voting and stuff

198

00:07:49,350 --> 00:07:46,879

from space but for the first time in a

199

00:07:51,110 --> 00:07:49,360

long time space is part of the political

200

00:07:53,430 --> 00:07:51,120

equation you're probably aware that one

201  
00:07:54,070 --> 00:07:53,440  
candidate has talked about moon bases

202  
00:07:56,629 --> 00:07:54,080  
and

203  
00:07:58,550 --> 00:07:56,639  
multiple rocket launches week after week

204  
00:08:00,950 --> 00:07:58,560  
from here in florida i'm wondering how

205  
00:08:02,629 --> 00:08:00,960  
you how you guys feel about this

206  
00:08:09,830 --> 00:08:02,639  
being part of the political landscape

207  
00:08:13,110 --> 00:08:11,350  
well i think and i've said this before

208  
00:08:14,469 --> 00:08:13,120  
but i think if if you're talking

209  
00:08:15,670 --> 00:08:14,479  
astronauts or anybody in the space

210  
00:08:17,350 --> 00:08:15,680  
business including all the folks that

211  
00:08:19,350 --> 00:08:17,360  
make it possible that that work with

212  
00:08:21,909 --> 00:08:19,360  
from the on the ground you could never

213  
00:08:24,309 --> 00:08:21,919

go fast enough or far enough for us and

214

00:08:26,469 --> 00:08:24,319

uh and it's it's always a good thing to

215

00:08:29,189 --> 00:08:26,479

have space elevated a little bit in the

216

00:08:31,990 --> 00:08:29,199

public consciousness it's it is such a

217

00:08:34,469 --> 00:08:32,000

real a very small amount that we as a

218

00:08:36,709 --> 00:08:34,479

people as taxpayers invest in space and

219

00:08:37,990 --> 00:08:36,719

for that we get so much as a benefit it

220

00:08:42,230 --> 00:08:38,000

goes directly into our tax base

221

00:08:44,630 --> 00:08:42,240

certainly but the technology the uh

222

00:08:46,070 --> 00:08:44,640

that you're in space and able to to uh

223

00:08:48,550 --> 00:08:46,080

kind of push the bounds of human

224

00:08:51,350 --> 00:08:48,560

experience um that in itself is

225

00:08:54,630 --> 00:08:51,360

priceless but it's less than it's on the

226  
00:08:56,070 --> 00:08:54,640  
order of one half of one percent of um

227  
00:08:57,750 --> 00:08:56,080  
of of

228  
00:08:59,430 --> 00:08:57,760  
the of the

229  
00:09:01,590 --> 00:08:59,440  
the wherewithal the federal budget of

230  
00:09:04,230 --> 00:09:01,600  
the united states that we spend in space

231  
00:09:06,230 --> 00:09:04,240  
and for that you get an awful lot and uh

232  
00:09:07,829 --> 00:09:06,240  
and i i for one would would love to see

233  
00:09:10,310 --> 00:09:07,839  
us do more now

234  
00:09:12,150 --> 00:09:10,320  
with that said we've got an awful lot of

235  
00:09:13,990 --> 00:09:12,160  
of things that uh

236  
00:09:15,750 --> 00:09:14,000  
that command our attention and there's a

237  
00:09:17,269 --> 00:09:15,760  
lot of issues we need to work out on the

238  
00:09:18,550 --> 00:09:17,279

ground as well but

239

00:09:19,910 --> 00:09:18,560

but there's an awful lot of good we can

240

00:09:21,190 --> 00:09:19,920

do up here and it benefits us on the

241

00:09:22,790 --> 00:09:21,200

ground

242

00:09:24,310 --> 00:09:22,800

i get one more question here so i'm

243

00:09:25,590 --> 00:09:24,320

going to throw this over to don pettit

244

00:09:27,350 --> 00:09:25,600

because you've got a new video that's

245

00:09:30,070 --> 00:09:27,360

been up on line

246

00:09:31,750 --> 00:09:30,080

using the angry birds to teach physics

247

00:09:34,550 --> 00:09:31,760

tell us a little bit about uh you know

248

00:09:36,710 --> 00:09:34,560

why it's important to use uh something

249

00:09:42,710 --> 00:09:36,720

that's that well known to reach out to

250

00:09:47,750 --> 00:09:44,790

when you look at

251  
00:09:49,990 --> 00:09:47,760  
everyday life on earth whether whether

252  
00:09:52,949 --> 00:09:50,000  
it's entertainment or whether it's

253  
00:09:54,710 --> 00:09:52,959  
driving your car to work or or

254  
00:09:56,630 --> 00:09:54,720  
whether you're just running a vacuum

255  
00:09:58,310 --> 00:09:56,640  
cleaner to clean your house

256  
00:10:02,470 --> 00:09:58,320  
all of these

257  
00:10:03,990 --> 00:10:02,480  
endeavors utilize technology and and

258  
00:10:06,150 --> 00:10:04,000  
some of the technology we take for

259  
00:10:08,470 --> 00:10:06,160  
granted and it's not necessarily simple

260  
00:10:10,550 --> 00:10:08,480  
technology it may be basic technology

261  
00:10:13,190 --> 00:10:10,560  
but but it could get the details can get

262  
00:10:14,630 --> 00:10:13,200  
rather involved and and i thought the

263  
00:10:16,069 --> 00:10:14,640

angry birds

264

00:10:18,949 --> 00:10:16,079

was uh

265

00:10:21,430 --> 00:10:18,959

an interesting way to capture young

266

00:10:24,470 --> 00:10:21,440

people's minds and let them know that

267

00:10:26,470 --> 00:10:24,480

there's more to a video game than just

268

00:10:28,150 --> 00:10:26,480

shooting things and watching them splat

269

00:10:31,509 --> 00:10:28,160

on a wall

270

00:10:33,110 --> 00:10:31,519

there's a lot of physics involved and if

271

00:10:35,430 --> 00:10:33,120

you want to

272

00:10:38,790 --> 00:10:35,440

figure out how this game works you need

273

00:10:40,310 --> 00:10:38,800

to understand the physics and

274

00:10:41,190 --> 00:10:40,320

you you can

275

00:10:44,470 --> 00:10:41,200

be

276

00:10:46,870 --> 00:10:44,480

a young person playing video games and

277

00:10:48,470 --> 00:10:46,880

when it's all said and done uh well you

278

00:10:50,870 --> 00:10:48,480

know how to play a video game but if you

279

00:10:53,030 --> 00:10:50,880

understand the physics behind it and you

280

00:10:55,670 --> 00:10:53,040

learn about the computer programming

281

00:10:57,269 --> 00:10:55,680

when you're done with your entertainment

282

00:10:59,030 --> 00:10:57,279

when you're done with your hobby you can

283

00:11:00,630 --> 00:10:59,040

go out and get yourself a good job and

284

00:11:04,069 --> 00:11:00,640

you can do interesting things with the

285

00:11:06,949 --> 00:11:04,079

knowledge that you gain so i see i see

286

00:11:09,509 --> 00:11:06,959

any number of these venues

287

00:11:12,470 --> 00:11:09,519

as a means of getting people to become

288

00:11:15,269 --> 00:11:12,480

aware the technology around them and

289

00:11:17,750 --> 00:11:15,279

become interested in the technology it

290

00:11:19,750 --> 00:11:17,760

helps you be better citizens and

291

00:11:21,670 --> 00:11:19,760

ultimately allows you to go out and do

292

00:11:23,350 --> 00:11:21,680

very interesting things with your life a

293

00:11:25,430 --> 00:11:23,360

great don pettit and commander dan

294

00:11:28,069 --> 00:11:25,440

burbank we thank you both for your time

295

00:11:29,750 --> 00:11:28,079

to have a great rest of your flight stay

296

00:11:31,350 --> 00:11:29,760

safe and we'll look forward to seeing

297

00:11:34,949 --> 00:11:31,360

you back down here on earth in a few

298

00:11:41,269 --> 00:11:36,870

peter bill thanks very much it was great

299

00:11:48,389 --> 00:11:43,670

station this is houston acr thank you

300

00:11:52,870 --> 00:11:50,470

thank you cbs radio station please stand

