



1  
00:00:22,960 --> 00:00:58,310  
oh

2  
00:00:58,320 --> 00:01:14,870  
when i came to you

3  
00:01:17,830 --> 00:01:16,310  
endeavor houston

4  
00:01:19,910 --> 00:01:17,840  
good morning to the remainder of the dog

5  
00:01:24,310 --> 00:01:19,920  
crew and we sure do appreciate y'all

6  
00:01:24,320 --> 00:01:29,910  
good morning good morning

7  
00:01:37,310 --> 00:01:31,590  
endeavour this is houston are you ready

8  
00:01:46,230 --> 00:01:40,149  
wxia this is houston please call

9  
00:02:09,910 --> 00:01:47,550  
endeavor this is

10  
00:02:14,790 --> 00:02:12,710  
wxia this is endeavor

11  
00:02:17,670 --> 00:02:14,800  
we hear you uh loud and clear how do you

12  
00:02:24,150 --> 00:02:20,550  
you sound good to me

13  
00:02:28,309 --> 00:02:26,710

yes ma'am that's me all right i'm jill

14

00:02:30,070 --> 00:02:28,319

becker in atlanta nice to talk to you

15

00:02:31,750 --> 00:02:30,080

this morning sir

16

00:02:33,509 --> 00:02:31,760

if it's all right with you we were

17

00:02:35,190 --> 00:02:33,519

hoping to kind of skip some of the

18

00:02:36,949 --> 00:02:35,200

technical uh

19

00:02:37,990 --> 00:02:36,959

stuff that you are dealing with and ask

20

00:02:39,589 --> 00:02:38,000

you some

21

00:02:45,270 --> 00:02:39,599

personal questions about what it's like

22

00:02:50,229 --> 00:02:47,190

you can certainly ask anything you like

23

00:02:52,550 --> 00:02:50,239

and we'll answer as best we can okay

24

00:02:54,070 --> 00:02:52,560

all right well first of all now you've

25

00:02:55,830 --> 00:02:54,080

been up in space several times and

26  
00:02:58,070 --> 00:02:55,840  
you've been up on this mission several

27  
00:03:03,110 --> 00:02:58,080  
days what's the sleeping like up there

28  
00:03:07,750 --> 00:03:06,229  
but sleeping in space is very individual

29  
00:03:09,589 --> 00:03:07,760  
jill um

30  
00:03:11,589 --> 00:03:09,599  
we all have our own ways of doing it

31  
00:03:13,670 --> 00:03:11,599  
this flight fortunately

32  
00:03:15,589 --> 00:03:13,680  
has what we call sleep stations which

33  
00:03:17,670 --> 00:03:15,599  
are really individual bunks

34  
00:03:20,550 --> 00:03:17,680  
for four of the crew members and then

35  
00:03:21,589 --> 00:03:20,560  
the airlock is available for sleeping

36  
00:03:23,270 --> 00:03:21,599  
when

37  
00:03:25,430 --> 00:03:23,280  
the four bunks are occupied so that's

38  
00:03:27,509 --> 00:03:25,440

where i've been sleeping and everybody's

39

00:03:31,030 --> 00:03:27,519

been sleeping pretty well it's quite

40

00:03:35,830 --> 00:03:33,190

what about leisure time and i'm not sure

41

00:03:38,309 --> 00:03:35,840

how much of that you actually have

42

00:03:43,350 --> 00:03:38,319

but is there any down time for you and

43

00:03:47,509 --> 00:03:45,430

well as you may imagine

44

00:03:49,270 --> 00:03:47,519

we are pretty busy most of the time

45

00:03:51,270 --> 00:03:49,280

partly because we're

46

00:03:53,350 --> 00:03:51,280

we're given a lot to do and partly

47

00:03:56,229 --> 00:03:53,360

because we're very interested in our

48

00:03:58,070 --> 00:03:56,239

work so we we tend to sometimes overdo

49

00:04:00,070 --> 00:03:58,080

it a little perhaps

50

00:04:03,350 --> 00:04:00,080

there is planned leisure time a little

51  
00:04:05,910 --> 00:04:03,360  
of it and during that time we mostly

52  
00:04:07,509 --> 00:04:05,920  
watch the earth uh or the sky

53  
00:04:09,750 --> 00:04:07,519  
you get a really beautiful view of

54  
00:04:12,550 --> 00:04:09,760  
mother earth from here in fact we are

55  
00:04:15,830 --> 00:04:12,560  
sunrise on the east coast here uh

56  
00:04:17,670 --> 00:04:15,840  
as we speak and so it's it's beautiful

57  
00:04:20,310 --> 00:04:17,680  
and it's a great way to spend that that

58  
00:04:22,629 --> 00:04:20,320  
little bit of leisure that we do have

59  
00:04:25,670 --> 00:04:22,639  
when you're on a lengthy mission like

60  
00:04:26,469 --> 00:04:25,680  
you're on do you get at all anxious

61  
00:04:28,870 --> 00:04:26,479  
uh

62  
00:04:30,469 --> 00:04:28,880  
wanting to come back to earth or do you

63  
00:04:34,070 --> 00:04:30,479

just enjoy the precious time that you've

64

00:04:38,710 --> 00:04:36,310

i can only speak for myself personally

65

00:04:39,830 --> 00:04:38,720

but it has been said by others as well

66

00:04:41,670 --> 00:04:39,840

that

67

00:04:43,749 --> 00:04:41,680

once you get up here and accustom

68

00:04:45,749 --> 00:04:43,759

yourself to the feeling of zero gravity

69

00:04:48,150 --> 00:04:45,759

it's quite pleasant and the view is

70

00:04:49,749 --> 00:04:48,160

gorgeous and you're always very aware

71

00:04:51,590 --> 00:04:49,759

that you're

72

00:04:53,670 --> 00:04:51,600

very privileged very fortunate to be

73

00:04:55,590 --> 00:04:53,680

here and so most of us would actually

74

00:04:57,110 --> 00:04:55,600

stay a little longer if we had the

75

00:04:59,189 --> 00:04:57,120

chance and i'd certainly like to make a

76

00:05:01,110 --> 00:04:59,199

plug for staying a little longer on the

77

00:05:03,030 --> 00:05:01,120

part of our crew right now for those who

78

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

are listening and have the opportunity

79

00:05:06,710 --> 00:05:05,360

to control that

80

00:05:09,110 --> 00:05:06,720

we'll pass that along if they weren't

81

00:05:11,830 --> 00:05:09,120

able to hear a couple other little just

82

00:05:17,590 --> 00:05:11,840

funky questions for you you look clean

83

00:05:21,749 --> 00:05:19,590

that's a real good question again we do

84

00:05:23,430 --> 00:05:21,759

it different ways we have both the

85

00:05:27,189 --> 00:05:23,440

conventional

86

00:05:29,029 --> 00:05:27,199

safety razors and electric razors

87

00:05:30,870 --> 00:05:29,039

being a veteran of many of these press

88

00:05:34,230 --> 00:05:30,880

conferences i used the electric razor

89

00:05:38,710 --> 00:05:36,390

and another again funky little question

90

00:05:42,950 --> 00:05:38,720

here do you all still drink tang up

91

00:05:46,150 --> 00:05:45,110

again i can only speak personally tang

92

00:05:48,150 --> 00:05:46,160

is not

93

00:05:51,029 --> 00:05:48,160

something that i ordinarily drink and so

94

00:05:53,749 --> 00:05:51,039

i haven't had any up here we have a wide

95

00:05:55,029 --> 00:05:53,759

variety of things to drink various

96

00:05:58,550 --> 00:05:55,039

juices and

97

00:06:00,550 --> 00:05:58,560

and mixed sugar and juice drinks

98

00:06:02,710 --> 00:06:00,560

i've never seen anything labeled tang in

99

00:06:03,909 --> 00:06:02,720

any of that

100

00:06:05,510 --> 00:06:03,919

all right

101  
00:06:07,270 --> 00:06:05,520  
your morning wake up calls i know you

102  
00:06:09,029 --> 00:06:07,280  
had hard day's night i believe this

103  
00:06:11,670 --> 00:06:09,039  
morning from the beatles any requests

104  
00:06:15,670 --> 00:06:11,680  
you'd like to send back to the guys at

105  
00:06:19,029 --> 00:06:17,670  
thank you jill i appreciate the offer

106  
00:06:21,270 --> 00:06:19,039  
actually

107  
00:06:23,189 --> 00:06:21,280  
the wake up music is well controlled by

108  
00:06:25,430 --> 00:06:23,199  
our capcoms and our friends all

109  
00:06:27,670 --> 00:06:25,440  
participate in it and

110  
00:06:29,189 --> 00:06:27,680  
we're getting a dog theme with ours of

111  
00:06:30,710 --> 00:06:29,199  
course because of the

112  
00:06:32,550 --> 00:06:30,720  
crew nickname so

113  
00:06:34,309 --> 00:06:32,560

we're happy to leave that in their

114

00:06:36,950 --> 00:06:34,319

capable hands they've done really well

115

00:06:39,189 --> 00:06:36,960

so far all right well good luck on your

116

00:06:41,350 --> 00:06:39,199

um on the rest of your mission i know

117

00:06:43,270 --> 00:06:41,360

you've got some some for houston for

118

00:06:44,550 --> 00:06:43,280

interesting work ahead of you and we

119

00:06:47,029 --> 00:06:44,560

appreciate your taking the time to be

120

00:06:48,390 --> 00:06:47,039

with us today captain walker

121

00:06:50,070 --> 00:06:48,400

go ahead

122

00:06:51,670 --> 00:06:50,080

well it's a great privilege to be here

123

00:06:55,270 --> 00:06:51,680

and i'm really happy to talk to you and

124

00:06:57,510 --> 00:06:55,280

i hope that all your viewers yes

125

00:06:59,670 --> 00:06:57,520

we've just noticed

126  
00:07:15,029 --> 00:06:59,680  
through the television

127  
00:07:18,710 --> 00:07:16,710  
we go we believe so

128  
00:07:20,950 --> 00:07:18,720  
close to that point

129  
00:07:23,029 --> 00:07:20,960  
all right so thank you captain walker

130  
00:07:25,670 --> 00:07:23,039  
good morning endeavor uh jim boyd here

131  
00:07:28,870 --> 00:07:25,680  
wcvb in boston uh can dave walker hear

132  
00:07:31,589 --> 00:07:30,469  
jim this is dave i hear you loud and

133  
00:07:33,270 --> 00:07:31,599  
clear

134  
00:07:38,309 --> 00:07:33,280  
wow this is incredible how far away are

135  
00:07:43,670 --> 00:07:40,629  
well we're going about that fast but

136  
00:07:45,909 --> 00:07:43,680  
we're really only about 220 miles above

137  
00:07:48,390 --> 00:07:45,919  
you as we speak

138  
00:07:52,230 --> 00:07:48,400

you're speeding along at 17 household

139

00:07:58,390 --> 00:07:56,469

yes it's uh low and fast as as orbits go

140

00:08:01,110 --> 00:07:58,400

and end up at

141

00:08:02,469 --> 00:08:01,120

about 250 miles above the earth it's uh

142

00:08:04,390 --> 00:08:02,479

apparently taking a little bit of time

143

00:08:06,309 --> 00:08:04,400

for my audio to get up to you so it's a

144

00:08:10,710 --> 00:08:06,319

an interesting delay process we have

145

00:08:15,749 --> 00:08:13,670

well i'll try to uh to not walk on you

146

00:08:17,430 --> 00:08:15,759

and as we say in the trade when we make

147

00:08:19,110 --> 00:08:17,440

our transmissions uh do you have some

148

00:08:22,230 --> 00:08:19,120

questions for me this morning

149

00:08:24,150 --> 00:08:22,240

absolutely do uh first question is

150

00:08:25,350 --> 00:08:24,160

let me know you set the scene for me let

151  
00:08:28,950 --> 00:08:25,360  
me know what you see when you're looking

152  
00:08:32,389 --> 00:08:31,270  
well that's a very good lead-in

153  
00:08:33,750 --> 00:08:32,399  
we're looking

154  
00:08:37,269 --> 00:08:33,760  
right down

155  
00:08:41,990 --> 00:08:37,279  
on florida west palm beach

156  
00:08:45,190 --> 00:08:42,000  
i can see lake okeechobee i can see

157  
00:08:46,550 --> 00:08:45,200  
actually the cloud cover is obscuring

158  
00:08:48,550 --> 00:08:46,560  
the kennedy space center in cape

159  
00:08:50,790 --> 00:08:48,560  
canaveral and i can see a lot of

160  
00:08:52,389 --> 00:08:50,800  
airplane pond trails headed for

161  
00:08:54,310 --> 00:08:52,399  
places south

162  
00:08:56,230 --> 00:08:54,320  
must be the winter tourists heading down

163  
00:08:58,310 --> 00:08:56,240

to my home state of florida it's

164

00:08:59,350 --> 00:08:58,320

beautiful and now of course as we're

165

00:09:01,269 --> 00:08:59,360

talking

166

00:09:03,829 --> 00:09:01,279

we're moving so we're passing out into

167

00:09:05,990 --> 00:09:03,839

the ocean uh off the coast of florida

168

00:09:07,269 --> 00:09:06,000

and uh and the time has taken me to say

169

00:09:10,790 --> 00:09:07,279

this we're

170

00:09:12,790 --> 00:09:10,800

heading down uh over the caribbean

171

00:09:16,550 --> 00:09:12,800

not in the atlantic actually

172

00:09:20,310 --> 00:09:18,710

going southeast actually at the top of

173

00:09:23,030 --> 00:09:20,320

our orbit

174

00:09:24,949 --> 00:09:23,040

since it's an ellipse as you i'm sorry

175

00:09:26,150 --> 00:09:24,959

it is an ellipse but as you see it over

176

00:09:28,389 --> 00:09:26,160

the ground

177

00:09:29,190 --> 00:09:28,399

uh it looks like a sinusoid so we go

178

00:09:32,150 --> 00:09:29,200

from

179

00:09:34,949 --> 00:09:32,160

28 degrees north on a map on a global

180

00:09:36,949 --> 00:09:34,959

map to 28 degrees south traveling east

181

00:09:38,389 --> 00:09:36,959

all the time

182

00:09:39,990 --> 00:09:38,399

give us a progress report on your

183

00:09:41,430 --> 00:09:40,000

mission you're having first of all you

184

00:09:43,110 --> 00:09:41,440

had some difficulty in getting off the

185

00:09:44,470 --> 00:09:43,120

ground twice delayed with this mission

186

00:09:46,550 --> 00:09:44,480

of endeavor

187

00:09:52,790 --> 00:09:46,560

and also you're having some difficulty

188

00:09:56,070 --> 00:09:54,389

well um

189

00:09:58,230 --> 00:09:56,080

one way to look at it which which we've

190

00:10:00,710 --> 00:09:58,240

considered is that most of nasa's

191

00:10:02,230 --> 00:10:00,720

missions uh go so perfectly and with

192

00:10:04,470 --> 00:10:02,240

very little hitches that every now and

193

00:10:06,790 --> 00:10:04,480

again you have to have one where all the

194

00:10:09,670 --> 00:10:06,800

little hitches seem to seem to catch up

195

00:10:11,350 --> 00:10:09,680

and it evens out we've had more than our

196

00:10:13,269 --> 00:10:11,360

share of the little hitches

197

00:10:14,949 --> 00:10:13,279

but the good news is that they haven't

198

00:10:17,509 --> 00:10:14,959

stopped us from getting done what we

199

00:10:18,710 --> 00:10:17,519

needed to do at all and as the mission

200

00:10:23,190 --> 00:10:18,720

goes on

201  
00:10:26,150 --> 00:10:24,790  
including the hitches with uh getting

202  
00:10:27,990 --> 00:10:26,160  
the launch of the satellite now the

203  
00:10:28,870 --> 00:10:28,000  
satellite is supposed to be trailing you

204  
00:10:29,590 --> 00:10:28,880  
for

205  
00:10:31,590 --> 00:10:29,600  
some

206  
00:10:33,269 --> 00:10:31,600  
time for you to determine whether or not

207  
00:10:36,630 --> 00:10:33,279  
the problems that existed have been

208  
00:10:41,430 --> 00:10:40,389  
well in fact its nominal profile jim uh

209  
00:10:44,630 --> 00:10:41,440  
keeps it

210  
00:10:45,750 --> 00:10:44,640  
about 30 to 40 miles away from us

211  
00:10:46,630 --> 00:10:45,760  
while

212  
00:10:48,470 --> 00:10:46,640  
the

213  
00:10:49,829 --> 00:10:48,480

ground control personnel who are

214

00:10:51,269 --> 00:10:49,839

controlling the science on the

215

00:10:52,310 --> 00:10:51,279

satellites from the university of

216

00:10:54,790 --> 00:10:52,320

houston

217

00:10:55,670 --> 00:10:54,800

do their controlling of that science and

218

00:10:57,590 --> 00:10:55,680

we

219

00:11:00,230 --> 00:10:57,600

stand by to back them up should it be

220

00:11:01,829 --> 00:11:00,240

necessary due to loss of communications

221

00:11:03,030 --> 00:11:01,839

that's all the way it's supposed to be

222

00:11:05,110 --> 00:11:03,040

and in fact

223

00:11:07,269 --> 00:11:05,120

that's been going better and better and

224

00:11:09,590 --> 00:11:07,279

now we're in the middle of what we would

225

00:11:11,030 --> 00:11:09,600

consider our critical science period

226

00:11:13,110 --> 00:11:11,040

where we're really getting some good

227

00:11:15,590 --> 00:11:13,120

science done

228

00:11:18,389 --> 00:11:15,600

as a team effort between the ground and

229

00:11:20,470 --> 00:11:18,399

and us here aboard endeavor

230

00:11:23,990 --> 00:11:20,480

things that we very seldom hear about

231

00:11:25,910 --> 00:11:24,000

and talk about is the enormous cost of

232

00:11:28,710 --> 00:11:25,920

satellite technology that you're dealing

233

00:11:30,470 --> 00:11:28,720

with and the cost of the missions

234

00:11:31,829 --> 00:11:30,480

does that put an additional pressure on

235

00:11:33,430 --> 00:11:31,839

you and other members of the crew to

236

00:11:38,150 --> 00:11:33,440

make sure you get things done get them

237

00:11:42,470 --> 00:11:40,550

well there is tremendous pressure on us

238

00:11:43,910 --> 00:11:42,480

to do things right and get things done

239

00:11:46,550 --> 00:11:43,920

on time

240

00:11:49,190 --> 00:11:46,560

i think that's related mostly to the

241

00:11:51,190 --> 00:11:49,200

fact that we consider ourselves

242

00:11:53,910 --> 00:11:51,200

to be agents of the american people in

243

00:11:55,910 --> 00:11:53,920

the space program it's it's the people

244

00:11:57,509 --> 00:11:55,920

space program and we're trying to do the

245

00:11:59,509 --> 00:11:57,519

best we can for them

246

00:12:01,829 --> 00:11:59,519

the costs actually

247

00:12:03,350 --> 00:12:01,839

first of all are not

248

00:12:05,910 --> 00:12:03,360

something that we deal with on a daily

249

00:12:08,710 --> 00:12:05,920

basis and second of all are relatively

250

00:12:11,750 --> 00:12:08,720

small in absolute terms by comparison

251  
00:12:14,069 --> 00:12:11,760  
with what people spend on other things

252  
00:12:15,910 --> 00:12:14,079  
nasa's budget is is trivial by

253  
00:12:17,269 --> 00:12:15,920  
comparison with most other things and we

254  
00:12:21,269 --> 00:12:17,279  
think the return

255  
00:12:25,829 --> 00:12:23,590  
so then talk of privatizing nasa and

256  
00:12:27,670 --> 00:12:25,839  
taking it out of the u.s budget entirely

257  
00:12:30,069 --> 00:12:27,680  
or at least

258  
00:12:34,629 --> 00:12:30,079  
it is now you have any impressions of

259  
00:12:39,670 --> 00:12:36,949  
i have opinions

260  
00:12:41,750 --> 00:12:39,680  
right now what we know about the process

261  
00:12:43,750 --> 00:12:41,760  
of privatization

262  
00:12:45,990 --> 00:12:43,760  
is i think insufficient for me to make a

263  
00:12:48,389 --> 00:12:46,000

sensible answer to that i do think

264

00:12:50,389 --> 00:12:48,399

however that nasa

265

00:12:53,350 --> 00:12:50,399

as we have done business has given the

266

00:12:54,790 --> 00:12:53,360

american people a great bargain

267

00:12:56,710 --> 00:12:54,800

i don't think you'd want to pay my

268

00:12:59,190 --> 00:12:56,720

salary for example if i were a civilian

269

00:13:03,030 --> 00:12:59,200

contractor

270

00:13:06,870 --> 00:13:05,350

let me ask you you talked earlier about

271

00:13:08,550 --> 00:13:06,880

we're headed you're projecting in your

272

00:13:10,389 --> 00:13:08,560

orbit and you're headed southeast over

273

00:13:13,110 --> 00:13:10,399

the caribbean

274

00:13:15,269 --> 00:13:13,120

while you're there are you

275

00:13:17,350 --> 00:13:15,279

able to get a look at the hurricane

276

00:13:18,790 --> 00:13:17,360

louise and

277

00:13:24,389 --> 00:13:18,800

it's probably

278

00:13:28,470 --> 00:13:26,470

uh jim we did see quite a bit of it the

279

00:13:31,030 --> 00:13:28,480

first day or two of the mission however

280

00:13:33,350 --> 00:13:31,040

it's moved uh far enough north now that

281

00:13:35,590 --> 00:13:33,360

it's not easy for us to observe we do

282

00:13:37,509 --> 00:13:35,600

get an excellent opportunity to see the

283

00:13:39,670 --> 00:13:37,519

weather patterns in what they call the

284

00:13:41,910 --> 00:13:39,680

hurricane belt as we head here towards

285

00:13:44,230 --> 00:13:41,920

africa and there is

286

00:13:46,069 --> 00:13:44,240

constant activity down there

287

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

it's real obvious that the whole world

288

00:13:56,389 --> 00:13:46,880

is

289

00:13:58,069 --> 00:13:56,399

and again to talk about your orbit now

290

00:13:59,910 --> 00:13:58,079

you said that you were over florida when

291

00:14:02,870 --> 00:13:59,920

we started our conversation just about

292

00:14:04,550 --> 00:14:02,880

10 minutes ago at this point

293

00:14:06,470 --> 00:14:04,560

is there any projection for you to be

294

00:14:12,230 --> 00:14:06,480

over boston or over the new england area

295

00:14:16,470 --> 00:14:14,870

no i may go visit my family in boston

296

00:14:19,829 --> 00:14:16,480

after the flight but that's as close as

297

00:14:22,389 --> 00:14:19,839

i'm going to get to it anytime soon

298

00:14:24,710 --> 00:14:22,399

we go no farther north

299

00:14:26,389 --> 00:14:24,720

on a map of the united states than about

300

00:14:28,550 --> 00:14:26,399

28 degrees

301  
00:14:30,310 --> 00:14:28,560  
because we launched due east

302  
00:14:31,350 --> 00:14:30,320  
out of the kennedy space center in

303  
00:14:33,509 --> 00:14:31,360  
florida

304  
00:14:35,750 --> 00:14:33,519  
that is the northernmost point of our

305  
00:14:36,710 --> 00:14:35,760  
orbit so we we don't get to see nearly

306  
00:14:39,189 --> 00:14:36,720  
as much

307  
00:14:41,750 --> 00:14:39,199  
of our homeland as we would like to and

308  
00:14:43,509 --> 00:14:41,760  
as i've been able to observe on previous

309  
00:14:45,750 --> 00:14:43,519  
missions that have gone a little further

310  
00:14:47,829 --> 00:14:45,760  
north in latitude

311  
00:14:49,590 --> 00:14:47,839  
and commander one last question for you

312  
00:14:51,030 --> 00:14:49,600  
and that is uh assess the mission at

313  
00:14:53,829 --> 00:14:51,040

this point are you considering it a

314

00:14:58,150 --> 00:14:53,839

success and uh everything is going to

315

00:15:00,790 --> 00:14:58,160

wind up safely back home on time

316

00:15:02,470 --> 00:15:00,800

i consider it a great success i hope the

317

00:15:04,949 --> 00:15:02,480

people that really matter that being the

318

00:15:07,430 --> 00:15:04,959

american public do so as well

319

00:15:09,670 --> 00:15:07,440

we've had minor hitches and and some

320

00:15:12,629 --> 00:15:09,680

that could have been more than minor had

321

00:15:14,710 --> 00:15:12,639

they not been responded to properly

322

00:15:17,030 --> 00:15:14,720

by the ground controllers in houston and

323

00:15:19,590 --> 00:15:17,040

by the crew on orbit

324

00:15:21,829 --> 00:15:19,600

we've been well trained to do what we do

325

00:15:25,189 --> 00:15:21,839

the people who help us do this

326

00:15:27,030 --> 00:15:25,199

are the best in the world and this has

327

00:15:28,629 --> 00:15:27,040

already been a considerable success and

328

00:15:30,470 --> 00:15:28,639

i think will be a great success before

329

00:15:31,910 --> 00:15:30,480

it's through there's some really good

330

00:15:35,030 --> 00:15:31,920

science being done

331

00:15:36,710 --> 00:15:35,040

and we're uh we're progressing every bit

332

00:15:38,550 --> 00:15:36,720

as well as we would have hoped it just

333

00:15:40,629 --> 00:15:38,560

hasn't been quite as easy to get to this

334

00:15:42,710 --> 00:15:40,639

point as it would be if everything had

335

00:15:44,710 --> 00:15:42,720

gone perfectly

336

00:15:47,269 --> 00:15:44,720

and it's been uh very pleasurable

337

00:15:49,670 --> 00:15:47,279

talking with you uh for

338

00:15:55,430 --> 00:15:49,680

this morning i'll continue to do a

339

00:15:59,590 --> 00:15:57,269

okay thank you very much enjoy talking

340

00:16:00,550 --> 00:15:59,600

to you and uh to all the american people

341

00:16:02,150 --> 00:16:00,560

who are

342

00:16:04,629 --> 00:16:02,160

hopefully watching this in the boston

343

00:16:07,189 --> 00:16:04,639

area hello from endeavor and uh we're

344

00:16:10,389 --> 00:16:07,199

real happy to be doing this uh in your

345

00:16:10,399 --> 00:16:13,509

and we have the downlink

346

00:16:18,389 --> 00:16:16,150

okay great before we before we start

347

00:16:20,470 --> 00:16:18,399

with the with the video uh which we

348

00:16:22,470 --> 00:16:20,480

intend to narrate we did want to take a

349

00:16:24,230 --> 00:16:22,480

moment as a crew

350

00:16:27,189 --> 00:16:24,240

to express our thanks

351  
00:16:28,790 --> 00:16:27,199  
to somebody real special to us who's

352  
00:16:30,949 --> 00:16:28,800  
no longer

353  
00:16:32,470 --> 00:16:30,959  
with the shuttle program per se but who

354  
00:16:33,430 --> 00:16:32,480  
had a lot to do with

355  
00:16:36,230 --> 00:16:33,440  
getting

356  
00:16:38,389 --> 00:16:36,240  
us where we are now and we're very much

357  
00:16:39,350 --> 00:16:38,399  
appreciative of it and we wanted to take

358  
00:16:43,430 --> 00:16:39,360  
a

359  
00:16:46,230 --> 00:16:43,440  
who

360  
00:16:48,790 --> 00:16:46,240  
left the program as you remember

361  
00:16:50,389 --> 00:16:48,800  
laden late in our flow after having made

362  
00:16:51,590 --> 00:16:50,399  
some real crucial decisions about the

363  
00:16:53,749 --> 00:16:51,600

boosters and

364

00:16:56,389 --> 00:16:53,759

having uh managed the program

365

00:16:58,870 --> 00:16:56,399

tremendously well for quite a while

366

00:17:00,710 --> 00:16:58,880

he's been uh well succeeded of course by

367

00:17:01,430 --> 00:17:00,720

tommy holloway but brewster's special to

368

00:17:03,590 --> 00:17:01,440

us

369

00:17:06,150 --> 00:17:03,600

and we uh we wanted to thank him

370

00:17:07,189 --> 00:17:06,160

personally and directly for all he did

371

00:17:09,270 --> 00:17:07,199

uh

372

00:17:11,750 --> 00:17:09,280

up to and including being on the roof

373

00:17:13,510 --> 00:17:11,760

with our families uh at the launch and

374

00:17:15,110 --> 00:17:13,520

holding madeline's hand and just

375

00:17:16,870 --> 00:17:15,120

generally being the great guy he's

376

00:17:18,870 --> 00:17:16,880

always been

377

00:17:23,429 --> 00:17:18,880

rooster you're you'll always be a dog to

378

00:17:28,230 --> 00:17:24,949

with that i'm going to turn it over to

379

00:17:30,789 --> 00:17:28,240

my production manager for videos uh

380

00:17:32,950 --> 00:17:30,799

the wiley dog face who is going to start

381

00:17:36,150 --> 00:17:32,960

the narration and the and the video

382

00:17:39,990 --> 00:17:38,390

i'll start the narration i'm just

383

00:17:42,070 --> 00:17:40,000

showing

384

00:17:44,310 --> 00:17:42,080

what what it is that pilots

385

00:17:45,990 --> 00:17:44,320

like to do best which is sleep and eat

386

00:17:49,750 --> 00:17:46,000

right now we'll show the eating parts

387

00:17:52,630 --> 00:17:51,430

i know a lot of you know all about this

388

00:17:54,230 --> 00:17:52,640

but

389

00:17:56,549 --> 00:17:54,240

food comes in many different varieties

390

00:17:58,549 --> 00:17:56,559

some is pre-packaged in little packets

391

00:17:59,430 --> 00:17:58,559

that you can just throw in the oven

392

00:18:03,510 --> 00:17:59,440

and

393

00:18:07,270 --> 00:18:05,029

comes in bottles that we bring aboard

394

00:18:08,630 --> 00:18:07,280

this is some of the red dogs barbecue

395

00:18:11,110 --> 00:18:08,640

sauce

396

00:18:13,350 --> 00:18:11,120

not everyone's favorite

397

00:18:15,830 --> 00:18:13,360

certainly red dog's favorite we got some

398

00:18:18,230 --> 00:18:15,840

cans of fruit

399

00:18:20,710 --> 00:18:18,240

our drink comes in

400

00:18:21,830 --> 00:18:20,720

in bags

401  
00:18:56,950 --> 00:18:21,840  
and

402  
00:18:59,909 --> 00:18:56,960  
he's

403  
00:19:11,669 --> 00:19:01,830  
showing the water squirting into this

404  
00:19:16,310 --> 00:19:13,750  
i really enjoy uh eating vegetables

405  
00:19:18,230 --> 00:19:16,320  
while on orbit i like them pretty well

406  
00:19:20,230 --> 00:19:18,240  
on earth as well but

407  
00:19:22,470 --> 00:19:20,240  
uh on orbit i like vegetables better

408  
00:19:24,710 --> 00:19:22,480  
than sweet things and so a lot of my

409  
00:19:27,110 --> 00:19:24,720  
meals are

410  
00:19:32,230 --> 00:19:27,120  
as well as some meat uh several servings

411  
00:19:32,240 --> 00:19:36,710  
and where are the shrimp

412  
00:19:42,710 --> 00:19:38,470  
sorry i think you got most of them in

413  
00:19:42,720 --> 00:19:56,230

yes sir

414

00:20:21,430 --> 00:19:58,870

and with every meal a nice cup of coffee

415

00:20:25,270 --> 00:20:23,510

we are getting an excellent picture

416

00:20:29,190 --> 00:20:25,280

composition lighting everything it's

417

00:20:33,669 --> 00:20:30,950

well as you know our

418

00:20:34,710 --> 00:20:33,679

our production manager is uh wiley jim

419

00:20:36,470 --> 00:20:34,720

boss

420

00:20:38,390 --> 00:20:36,480

he does an excellent job

421

00:20:40,789 --> 00:20:38,400

i want to take this

422

00:20:42,470 --> 00:20:40,799

opportunity to give our

423

00:20:44,710 --> 00:20:42,480

the crews thanks to the flight control

424

00:20:46,470 --> 00:20:44,720

teams you all guys have always been

425

00:20:49,430 --> 00:20:46,480

great during this flight during this

426

00:20:52,149 --> 00:20:49,440

training flow and really uh having

427

00:20:53,750 --> 00:20:52,159

worked down there where you are some

428

00:20:58,950 --> 00:20:53,760

i can tell that this is an excellent

429

00:20:58,960 --> 00:21:04,390

thanks got a bunch of smiles around here

430

00:21:07,909 --> 00:21:06,390

and while we're on the subject of food

431

00:21:10,870 --> 00:21:07,919

we'd like to

432

00:21:12,789 --> 00:21:10,880

give our thanks to gloria and vicky

433

00:21:13,750 --> 00:21:12,799

call sign dog food

434

00:21:16,390 --> 00:21:13,760

that

435

00:21:21,750 --> 00:21:16,400

have helped us select and prepare these

436

00:21:26,950 --> 00:21:23,990

okay this is one of our more interesting

437

00:21:28,230 --> 00:21:26,960

secondary uh well actually dso but it's

438

00:21:30,070 --> 00:21:28,240

got enough

439

00:21:32,070 --> 00:21:30,080

stuff to do that it almost has taken on

440

00:21:33,909 --> 00:21:32,080

the character of a secondary payload

441

00:21:37,430 --> 00:21:33,919

this is the portable cynical blood

442

00:21:39,669 --> 00:21:37,440

analyzer dto492b

443

00:21:40,390 --> 00:21:39,679

and there is uh in my hand

444

00:21:47,830 --> 00:21:40,400

the

445

00:21:53,350 --> 00:21:50,630

what you do is

446

00:21:56,950 --> 00:21:53,360

after fading out

447

00:22:02,470 --> 00:22:00,310

the doctor is in is is the

448

00:22:03,909 --> 00:22:02,480

side behind that but what you do

449

00:22:05,270 --> 00:22:03,919

is you use a

450

00:22:06,310 --> 00:22:05,280

little sticker

451  
00:22:08,230 --> 00:22:06,320  
to take

452  
00:22:09,590 --> 00:22:08,240  
some blood from a from a victim a

453  
00:22:11,350 --> 00:22:09,600  
subject

454  
00:22:14,230 --> 00:22:11,360  
and

455  
00:22:15,270 --> 00:22:14,240  
once the subject has given you his blood

456  
00:22:17,110 --> 00:22:15,280  
uh

457  
00:22:19,270 --> 00:22:17,120  
there's a and it's not very much blood

458  
00:22:20,710 --> 00:22:19,280  
fortunately since uh

459  
00:22:23,110 --> 00:22:20,720  
some of the subjects are more willing

460  
00:22:24,630 --> 00:22:23,120  
than others to be vampired

461  
00:22:28,149 --> 00:22:24,640  
um

462  
00:22:30,470 --> 00:22:28,159  
you take a small capillary tube

463  
00:22:33,190 --> 00:22:30,480

put the blood into a little cartridge

464

00:22:35,510 --> 00:22:33,200

self-contained cassette that then goes

465

00:22:36,789 --> 00:22:35,520

into the portable clinical blood

466

00:22:38,630 --> 00:22:36,799

analyzer

467

00:22:41,830 --> 00:22:38,640

the little remote control device that i

468

00:22:43,110 --> 00:22:41,840

showed you there and in a minute and 20

469

00:22:44,230 --> 00:22:43,120

seconds

470

00:22:46,789 --> 00:22:44,240

it

471

00:22:49,190 --> 00:22:46,799

gives you a pretty good blood analysis

472

00:22:50,950 --> 00:22:49,200

and the thing is uh just terrific we've

473

00:22:53,510 --> 00:22:50,960

been very pleased with the way it works

474

00:22:56,070 --> 00:22:53,520

and this is one of those dsos

475

00:22:57,190 --> 00:22:56,080

that actually works better in space than

476  
00:23:00,710 --> 00:22:57,200  
it does

477  
00:23:02,310 --> 00:23:00,720  
on the ground at least partially because

478  
00:23:04,070 --> 00:23:02,320  
the blood is a heck of a lot easier to

479  
00:23:06,070 --> 00:23:04,080  
get into this little capillary tube up

480  
00:23:08,390 --> 00:23:06,080  
here where gravity is not trying to

481  
00:23:09,590 --> 00:23:08,400  
force it down onto the floor

482  
00:23:11,669 --> 00:23:09,600  
uh

483  
00:23:13,510 --> 00:23:11,679  
it just climbs right up in the capillary

484  
00:23:15,669 --> 00:23:13,520  
tube it's really easy to do all the

485  
00:23:17,510 --> 00:23:15,679  
procedures that i struggled with

486  
00:23:19,750 --> 00:23:17,520  
in training and uh

487  
00:23:22,549 --> 00:23:19,760  
the life sciences folks

488  
00:23:23,909 --> 00:23:22,559

deserve an attaboy for the composition

489

00:23:26,950 --> 00:23:23,919

design of this

490

00:23:29,029 --> 00:23:26,960

particular dso it's

491

00:23:29,990 --> 00:23:29,039

it's actually kind of fun to do except

492

00:23:31,430 --> 00:23:30,000

for the

493

00:23:41,750 --> 00:23:31,440

part where you have to calibrate the

494

00:23:46,470 --> 00:23:43,669

there you see the there you see the

495

00:23:48,630 --> 00:23:46,480

blood itself in the capillary tube and

496

00:23:50,470 --> 00:23:48,640

pujo is actually shooting the camera

497

00:23:52,710 --> 00:23:50,480

he's going to zoom in there

498

00:23:54,390 --> 00:23:52,720

and you can see

499

00:23:55,909 --> 00:23:54,400

it's just a little it's just a little

500

00:23:58,149 --> 00:23:55,919

cassette it's got electrodes on the

501  
00:24:00,630 --> 00:23:58,159  
front end of it that interface with the

502  
00:24:02,789 --> 00:24:00,640  
portable clinical blood analyzer innards

503  
00:24:04,470 --> 00:24:02,799  
once you get it inside

504  
00:24:05,750 --> 00:24:04,480  
and um

505  
00:24:08,149 --> 00:24:05,760  
you never

506  
00:24:09,750 --> 00:24:08,159  
have any blood to clean up and all all

507  
00:24:12,070 --> 00:24:09,760  
the mess is contained in a small

508  
00:24:12,870 --> 00:24:12,080  
biohazard bag and

509  
00:24:16,149 --> 00:24:12,880  
it's

510  
00:24:17,830 --> 00:24:16,159  
definitely better and easier

511  
00:24:19,029 --> 00:24:17,840  
than the kind of blood draws that we

512  
00:24:21,350 --> 00:24:19,039  
have done

513  
00:24:22,870 --> 00:24:21,360

in other occasions uh

514

00:24:23,990 --> 00:24:22,880

different situations this is going to

515

00:24:25,590 --> 00:24:24,000

have a lot of

516

00:24:28,630 --> 00:24:25,600

applicability

517

00:24:30,470 --> 00:24:28,640

in fact it probably already does um

518

00:24:34,549 --> 00:24:30,480

before emergency room medicine and

519

00:24:36,630 --> 00:24:34,559

remote medicine type things

520

00:24:39,750 --> 00:24:36,640

and believe me if i can do this anybody

521

00:24:44,390 --> 00:24:41,909

because i'm the fighter flight surgeon

522

00:24:48,310 --> 00:24:44,400

type when it comes to this stuff

523

00:24:52,230 --> 00:24:50,310

i knew that would appeal to the

524

00:25:03,430 --> 00:24:52,240

to the surgeon or to the doctor's side

525

00:25:07,110 --> 00:25:05,029

that's basically

526  
00:25:09,190 --> 00:25:07,120  
the procedure

527  
00:25:11,269 --> 00:25:09,200  
i think we've

528  
00:25:14,149 --> 00:25:11,279  
covered it pretty well there's the pcba

529  
00:25:18,870 --> 00:25:14,159  
itself

530  
00:25:21,669 --> 00:25:20,789  
and you just punch in your patient id

531  
00:25:25,269 --> 00:25:21,679  
numbers

532  
00:25:27,110 --> 00:25:25,279  
we'll see the

533  
00:25:28,549 --> 00:25:27,120  
see the answers which fortunately in our

534  
00:25:31,029 --> 00:25:28,559  
case so far

535  
00:25:33,430 --> 00:25:31,039  
have been

536  
00:25:34,470 --> 00:25:33,440  
indicative of normal levels of the

537  
00:25:37,830 --> 00:25:34,480  
various

538  
00:25:39,269 --> 00:25:37,840

constituents of the blood this is

539

00:25:40,950 --> 00:25:39,279

um

540

00:25:42,149 --> 00:25:40,960

well it has application to many

541

00:25:44,149 --> 00:25:42,159

different experiments in the life

542

00:25:45,510 --> 00:25:44,159

sciences world so

543

00:25:47,190 --> 00:25:45,520

it doesn't doesn't really matter too

544

00:25:48,870 --> 00:25:47,200

much what but

545

00:25:52,310 --> 00:25:48,880

sure does make the process of collecting

546

00:25:55,190 --> 00:25:52,320

blood for any scientific purpose easier

547

00:25:56,390 --> 00:25:55,200

uh on orbit and one would assume

548

00:26:07,269 --> 00:25:56,400

in other

549

00:26:10,950 --> 00:26:09,350

okay this is running on longer than we

550

00:26:13,990 --> 00:26:10,960

realized when we did it so i'm not

551  
00:26:15,110 --> 00:26:14,000  
trying to hog all the video time we

552  
00:26:21,750 --> 00:26:15,120  
are going to try and show you what the

553  
00:26:25,430 --> 00:26:23,750  
and uh

554  
00:26:29,830 --> 00:26:25,440  
lot to turn it on i told you i was a

555  
00:26:33,990 --> 00:26:32,230  
and it's really hard to see in the video

556  
00:26:37,590 --> 00:26:34,000  
but it's it's a graphic display and it

557  
00:26:42,789 --> 00:26:40,230  
okay here is underdog to talk about

558  
00:26:44,390 --> 00:26:42,799  
exercise

559  
00:26:45,830 --> 00:26:44,400  
well even though we stay busy uh it's

560  
00:26:48,230 --> 00:26:45,840  
real important to schedule time for

561  
00:26:50,470 --> 00:26:48,240  
exercise and uh it's real important in

562  
00:26:52,630 --> 00:26:50,480  
space on earth

563  
00:26:54,390 --> 00:26:52,640

you have your own weight to react forces

564

00:26:56,310 --> 00:26:54,400

against in space of course you don't and

565

00:26:57,590 --> 00:26:56,320

so uh we come up with exercises where

566

00:26:59,590 --> 00:26:57,600

you can

567

00:27:01,430 --> 00:26:59,600

either react forces against your own

568

00:27:04,710 --> 00:27:01,440

body as i was just doing with that red

569

00:27:07,350 --> 00:27:04,720

dyna band or position yourself such that

570

00:27:09,350 --> 00:27:07,360

any force you generate is reacted

571

00:27:10,950 --> 00:27:09,360

in such a way that you stay in a stable

572

00:27:12,230 --> 00:27:10,960

configuration

573

00:27:14,230 --> 00:27:12,240

and

574

00:27:15,510 --> 00:27:14,240

in such a way you can isolate muscle

575

00:27:17,110 --> 00:27:15,520

groups and actually get a really good

576  
00:27:20,310 --> 00:27:17,120  
workout

577  
00:27:21,750 --> 00:27:20,320  
and uh

578  
00:27:24,310 --> 00:27:21,760  
typically we're scheduled for an hour

579  
00:27:26,710 --> 00:27:24,320  
and a half exercise and that entails

580  
00:27:28,710 --> 00:27:26,720  
time to get ready to exercise

581  
00:27:30,149 --> 00:27:28,720  
as well as time to clean up after the

582  
00:27:31,190 --> 00:27:30,159  
exercise

583  
00:27:33,110 --> 00:27:31,200  
and uh

584  
00:27:35,350 --> 00:27:33,120  
oops there goes some

585  
00:27:37,510 --> 00:27:35,360  
some paper floating by but

586  
00:27:39,669 --> 00:27:37,520  
we actually do get quite a good workout

587  
00:27:43,510 --> 00:27:39,679  
and it really does

588  
00:27:47,269 --> 00:27:45,350

and you always have to be thinking about

589

00:27:49,029 --> 00:27:47,279

newton up here because

590

00:27:50,470 --> 00:27:49,039

if you don't

591

00:27:51,750 --> 00:27:50,480

you never know what's going to happen to

592

00:27:56,470 --> 00:27:51,760

you

593

00:27:58,070 --> 00:27:56,480

that here in a minute

594

00:28:05,510 --> 00:27:58,080

here i'm doing some

595

00:28:05,520 --> 00:28:20,870

underdog you know just how amazed i am

596

00:28:31,430 --> 00:28:23,510

and if you don't watch out whoa

597

00:28:35,750 --> 00:28:33,029

hello this is pluto and i'd like to take

598

00:28:37,430 --> 00:28:35,760

you on a short tour of the orbiter wide

599

00:28:40,549 --> 00:28:37,440

web

600

00:28:42,710 --> 00:28:40,559

uh we have nine pgscs on board we have a

601  
00:28:44,470 --> 00:28:42,720  
number of different uh

602  
00:28:46,230 --> 00:28:44,480  
experiments that we're doing with them

603  
00:28:47,990 --> 00:28:46,240  
as well as operational use of them in

604  
00:28:50,630 --> 00:28:48,000  
order to help us with uh

605  
00:28:51,669 --> 00:28:50,640  
operating the space shuttle

606  
00:28:54,310 --> 00:28:51,679  
there's the

607  
00:28:56,950 --> 00:28:54,320  
male disc bag

608  
00:28:58,310 --> 00:28:56,960  
to its left we have the heart of the

609  
00:28:59,830 --> 00:28:58,320  
orbiter wide web is the data

610  
00:29:02,470 --> 00:28:59,840  
distribution center

611  
00:29:04,310 --> 00:29:02,480  
the pcmmu data from the orbiter comes

612  
00:29:06,630 --> 00:29:04,320  
into that machine and is distributed

613  
00:29:09,350 --> 00:29:06,640

where it needs to go

614

00:29:12,710 --> 00:29:09,360

this is one this experiment here is the

615

00:29:13,510 --> 00:29:12,720

gps relative gps experiment and next to

616

00:29:14,870 --> 00:29:13,520

it

617

00:29:17,830 --> 00:29:14,880

is the

618

00:29:19,269 --> 00:29:17,840

mpd manipulator position development

619

00:29:21,269 --> 00:29:19,279

experiment

620

00:29:23,750 --> 00:29:21,279

for the rendezvous we've positioned what

621

00:29:25,750 --> 00:29:23,760

we normally used as the world map we've

622

00:29:27,510 --> 00:29:25,760

positioned up by the commander so that

623

00:29:30,149 --> 00:29:27,520

he can use our pop the rendezvous and

624

00:29:31,590 --> 00:29:30,159

fox ops program in order to help him fly

625

00:29:34,389 --> 00:29:31,600

currently we have a world map on it

626

00:29:37,029 --> 00:29:34,399

we'll have it up using the uh reno and

627

00:29:40,149 --> 00:29:37,039

box ops program tomorrow for the wake

628

00:29:41,909 --> 00:29:40,159

shield rendezvous as we did for spartan

629

00:29:44,470 --> 00:29:41,919

now on the mid deck we didn't have quite

630

00:29:48,230 --> 00:29:44,480

enough room on the flight deck

631

00:29:51,190 --> 00:29:48,240

on the mid deck we have two other pgses

632

00:29:53,269 --> 00:29:51,200

one of them is being used for the

633

00:29:55,669 --> 00:29:53,279

goddard experiments the spartan the con

634

00:29:57,669 --> 00:29:55,679

cap and so on and so forth the other one

635

00:29:58,950 --> 00:29:57,679

is the other part of the gps

636

00:30:01,110 --> 00:29:58,960

experiment

637

00:30:02,549 --> 00:30:01,120

relative gps is a particular favorite of

638

00:30:06,149 --> 00:30:02,559

this crew

639

00:30:08,230 --> 00:30:06,159

as my crewmates like to remind me

640

00:30:10,630 --> 00:30:08,240

and what it is doing is it's using the

641

00:30:14,070 --> 00:30:10,640

orbiter gps data and comparing it with

642

00:30:16,470 --> 00:30:14,080

the wake shield gps data

643

00:30:19,350 --> 00:30:16,480

that allows us to

644

00:30:20,950 --> 00:30:19,360

get a an accurate relative state vector

645

00:30:24,149 --> 00:30:20,960

between the two we think in the future

646

00:30:25,830 --> 00:30:24,159

the our fidos and flight controllers

647

00:30:28,630 --> 00:30:25,840

will find this very useful

648

00:30:33,269 --> 00:30:28,640

as we get the orbiter into the latter

649

00:30:37,029 --> 00:30:34,789

in addition to the

650

00:30:38,230 --> 00:30:37,039

gps data it also has a world map which

651  
00:30:39,909 --> 00:30:38,240  
we can use

652  
00:30:42,149 --> 00:30:39,919  
to show

653  
00:30:44,789 --> 00:30:42,159  
where we are

654  
00:30:47,029 --> 00:30:44,799  
this is the complement of dgses on the

655  
00:30:48,549 --> 00:30:47,039  
middeck

656  
00:30:50,710 --> 00:30:48,559  
of all nine

657  
00:30:51,669 --> 00:30:50,720  
all of them are actually in use

658  
00:30:53,510 --> 00:30:51,679  
on

659  
00:30:57,350 --> 00:30:53,520  
the flight days involving the wake

660  
00:31:02,070 --> 00:30:59,750  
we also have a pilot computer for use as

661  
00:31:03,110 --> 00:31:02,080  
a landing refresher for the commander

662  
00:31:05,669 --> 00:31:03,120  
and pilot

663  
00:31:07,990 --> 00:31:05,679

but we couldn't find a way to tie that

664

00:31:15,669 --> 00:31:08,000

one into the orbiter wide web in the

665

00:31:19,510 --> 00:31:17,190

well we almost forgot a couple of very

666

00:31:21,909 --> 00:31:19,520

important pgscs those are back on the

667

00:31:24,149 --> 00:31:21,919

flight deck

668

00:31:25,190 --> 00:31:24,159

giving us a total of seven on the flight

669

00:31:26,070 --> 00:31:25,200

deck

670

00:31:27,510 --> 00:31:26,080

and

671

00:31:29,110 --> 00:31:27,520

those

672

00:31:31,190 --> 00:31:29,120

two are

673

00:31:33,510 --> 00:31:31,200

for the wake shield the wake shield

674

00:31:35,909 --> 00:31:33,520

is part of its own mini web and it

675

00:31:37,669 --> 00:31:35,919

communicates with

676  
00:31:39,269 --> 00:31:37,679  
the pgcs communicate with the wake

677  
00:31:41,990 --> 00:31:39,279  
shield allowing us to see the wake

678  
00:31:44,950 --> 00:31:42,000  
shield data and to back up

679  
00:31:46,389 --> 00:31:44,960  
the wake shield poc in its commanding

680  
00:31:56,070 --> 00:31:46,399  
and data

681  
00:32:02,230 --> 00:31:59,750  
we're flying over africa in this video

682  
00:32:03,830 --> 00:32:02,240  
a quick uh last look at the orbiter wide

683  
00:32:05,909 --> 00:32:03,840  
web

684  
00:32:07,669 --> 00:32:05,919  
we're using uh for this period of time

685  
00:32:11,110 --> 00:32:07,679  
we're using an old tgsc for the world

686  
00:32:14,149 --> 00:32:12,710  
the old ones

687  
00:32:15,269 --> 00:32:14,159  
can't be interfaced to the orbiter wide

688  
00:32:17,669 --> 00:32:15,279

web yet

689

00:32:23,029 --> 00:32:17,679

now we're focusing on the wakefield

690

00:32:27,430 --> 00:32:25,909

and here's the pjc for commanding the

691

00:32:28,950 --> 00:32:27,440

wake shield

692

00:32:31,110 --> 00:32:28,960

on its free flight it's two day free

693

00:32:33,029 --> 00:32:31,120

flight it's out there right now

694

00:32:34,870 --> 00:32:33,039

uh doing science growing semiconductors

695

00:32:37,269 --> 00:32:34,880

and here's another pgc for monitoring

696

00:32:39,029 --> 00:32:37,279

the data real problem with uh

697

00:32:41,350 --> 00:32:39,039

data is in this day and age there's so

698

00:32:43,029 --> 00:32:41,360

much information that we can't have it

699

00:32:44,950 --> 00:32:43,039

all on one computer we really need the

700

00:32:47,029 --> 00:32:44,960

extra data screens in order to be able

701

00:32:51,830 --> 00:32:47,039

to see all the data at the appropriate

702

00:32:56,230 --> 00:32:54,630

uh it was quite a pleasure at first my

703

00:32:58,389 --> 00:32:56,240

payload commander jim voss told me that

704

00:33:00,710 --> 00:32:58,399

we had too many pgs and just recently

705

00:33:02,950 --> 00:33:00,720

both he and my commander asked why we

706

00:33:04,230 --> 00:33:02,960

don't have more

707

00:33:05,990 --> 00:33:04,240

done by then

708

00:33:07,990 --> 00:33:06,000

this is one of our secondary payloads

709

00:33:10,310 --> 00:33:08,000

the commercial generic bio processing

710

00:33:11,830 --> 00:33:10,320

apparatus cgba

711

00:33:13,350 --> 00:33:11,840

red dog and i have been doing this one

712

00:33:15,269 --> 00:33:13,360

throughout the flight it's sponsored

713

00:33:17,590 --> 00:33:15,279

primarily by the university of colorado

714

00:33:19,269 --> 00:33:17,600

and kansas state names research center

715

00:33:21,269 --> 00:33:19,279

dr mark edwards out at university of

716

00:33:23,909 --> 00:33:21,279

colorado has been the primary person

717

00:33:25,990 --> 00:33:23,919

we've worked with it has 29 experiments

718

00:33:28,149 --> 00:33:26,000

with 152

719

00:33:30,070 --> 00:33:28,159

different tesco type things called fluid

720

00:33:31,830 --> 00:33:30,080

processing apparatus

721

00:33:34,230 --> 00:33:31,840

it has a lot of different things in it

722

00:33:36,950 --> 00:33:34,240

biological processes waste management

723

00:33:39,830 --> 00:33:36,960

microbial control here you see me

724

00:33:42,389 --> 00:33:39,840

deactivating actually about seven of the

725

00:33:43,350 --> 00:33:42,399

test tubes that are inside the canister

726  
00:33:45,750 --> 00:33:43,360  
in this

727  
00:33:47,509 --> 00:33:45,760  
group activation pack there are a series

728  
00:33:49,350 --> 00:33:47,519  
of test tubes and you turn the crank to

729  
00:33:52,310 --> 00:33:49,360  
push

730  
00:33:54,630 --> 00:33:52,320  
a plate down that mixes fluids we mix

731  
00:33:57,830 --> 00:33:54,640  
them first have it do its process here

732  
00:33:59,830 --> 00:33:57,840  
on orbit and then we deactivate it uh

733  
00:34:02,070 --> 00:33:59,840  
later like i'm doing right now you can

734  
00:34:04,230 --> 00:34:02,080  
see in the container which is an

735  
00:34:05,990 --> 00:34:04,240  
incubator keeping it warm a lot of

736  
00:34:08,790 --> 00:34:06,000  
different of the gaps that have many of

737  
00:34:10,629 --> 00:34:08,800  
the different 152 different things going

738  
00:34:11,909 --> 00:34:10,639

on

739

00:34:13,430 --> 00:34:11,919

some of the interesting things they're

740

00:34:16,950 --> 00:34:13,440

doing with these are

741

00:34:19,349 --> 00:34:16,960

3d polymer matrices with a protein

742

00:34:20,629 --> 00:34:19,359

data storage medium they're also looking

743

00:34:23,669 --> 00:34:20,639

at some different materials for

744

00:34:25,669 --> 00:34:23,679

disinfecting bacterial contamination

745

00:34:28,069 --> 00:34:25,679

both for water purification on space and

746

00:34:29,909 --> 00:34:28,079

in earth that's a university of or

747

00:34:31,909 --> 00:34:29,919

kansas state university

748

00:34:32,869 --> 00:34:31,919

experiment there's some bone marrow

749

00:34:35,190 --> 00:34:32,879

growth

750

00:34:37,669 --> 00:34:35,200

immune suppression uh

751

00:34:39,270 --> 00:34:37,679

system out of kansas state

752

00:34:40,869 --> 00:34:39,280

and

753

00:34:42,310 --> 00:34:40,879

a lot of different things that they're

754

00:34:44,950 --> 00:34:42,320

they're working on medical disorders

755

00:34:46,470 --> 00:34:44,960

drug development microbial control it's

756

00:34:49,430 --> 00:34:46,480

one of the ones that you get a lot of

757

00:34:50,310 --> 00:34:49,440

bang for your buck an interesting

758

00:34:53,829 --> 00:34:50,320

type

759

00:34:57,349 --> 00:34:55,909

our production values have suffered just

760

00:34:59,190 --> 00:34:57,359

slightly by virtue of the fact that

761

00:35:00,790 --> 00:34:59,200

we've had primary mission stuff to

762

00:35:03,510 --> 00:35:00,800

perform here

763

00:35:05,270 --> 00:35:03,520

we're now over the gulf

764

00:35:07,270 --> 00:35:05,280

and we should be looking at corpus

765

00:35:09,109 --> 00:35:07,280

christi

766

00:35:10,950 --> 00:35:09,119

and the inland waterway up the gulf

767

00:35:12,390 --> 00:35:10,960

coast

768

00:35:14,150 --> 00:35:12,400

we're getting a great picture you can

769

00:35:17,109 --> 00:35:14,160

just go right along the coast there and

770

00:35:25,510 --> 00:35:17,119

should be able to find houston here

771

00:35:29,829 --> 00:35:28,150

this is pretty good viewing of the

772

00:35:33,030 --> 00:35:29,839

gulf for this time of year there's not

773

00:35:34,470 --> 00:35:33,040

as much haze as we sometimes encounter

774

00:35:38,069 --> 00:35:34,480

hope you guys are having good weather i

775

00:35:43,030 --> 00:35:40,230

it's been a little a little warm up to

776

00:35:47,270 --> 00:35:43,040

93 degrees but it has been an early fall

777

00:35:51,750 --> 00:35:49,990

well as much as we love it up here

778

00:35:55,430 --> 00:35:51,760

we like

779

00:35:57,349 --> 00:35:55,440

going to enjoy it as long as we can

780

00:35:59,589 --> 00:35:57,359

including milking you guys for as much

781

00:36:01,190 --> 00:35:59,599

extra as we can

782

00:36:02,790 --> 00:36:01,200

we'll be happy to see you when we get

783

00:36:04,470 --> 00:36:02,800

back

784

00:36:05,829 --> 00:36:04,480

if you look above the cloud layer you

785

00:36:08,710 --> 00:36:05,839

can see all the contrails of the

786

00:36:11,030 --> 00:36:08,720

airliners going back and forth

787

00:36:13,349 --> 00:36:11,040

pretty interesting indication of the age

788

00:36:19,349 --> 00:36:13,359

we live in yes sir we got a good view of

789

00:36:23,829 --> 00:36:21,910

looks like go weather for the cat crew

790

00:36:26,710 --> 00:36:23,839

this will just hold until they get ready

791

00:36:27,990 --> 00:36:26,720

to launch

792

00:36:29,910 --> 00:36:28,000

now we're over the southern part of the

793

00:36:31,910 --> 00:36:29,920

peninsula we're centered up on lake

794

00:36:33,750 --> 00:36:31,920

okeechobee now you can pull back and see

795

00:36:34,710 --> 00:36:33,760

the entire part of peninsula is that not

796

00:36:37,190 --> 00:36:34,720

pretty

797

00:36:41,589 --> 00:36:37,200

yes it's fantastic it's unbelievable how

798

00:36:43,270 --> 00:36:41,599

clear the peninsula is

799

00:36:50,710 --> 00:36:43,280

yeah this is uh this is nice weather

800

00:36:53,829 --> 00:36:52,310

jim said he ought to be taking pictures

801  
00:36:55,349 --> 00:36:53,839  
instead of showing these to you but i

802  
00:36:56,470 --> 00:36:55,359  
think this is worth sharing with people

803  
00:36:58,069 --> 00:36:56,480  
it's uh

804  
00:37:00,310 --> 00:36:58,079  
it's as close as you can come to being

805  
00:37:02,150 --> 00:37:00,320  
here and as you know it's

806  
00:37:03,829 --> 00:37:02,160  
it's missing a lot of the other

807  
00:37:06,829 --> 00:37:03,839  
sensations but the cameras we've got

808  
00:37:10,230 --> 00:37:06,839  
these days really enable us to share a

809  
00:37:11,829 --> 00:37:10,240  
lot there's the

810  
00:37:17,190 --> 00:37:11,839  
there's the south florida the end of the

811  
00:37:17,200 --> 00:37:23,829  
and here comes the bahamas

812  
00:37:28,069 --> 00:37:26,069  
okay as you go into the handover we'll

813  
00:37:29,510 --> 00:37:28,079

give you this uh we'll give you this

814

00:37:36,390 --> 00:37:29,520

picture

815

00:37:41,349 --> 00:37:38,950

can you see that story yes sir we have

816

00:37:45,109 --> 00:37:42,310

well

817

00:37:46,470 --> 00:37:45,119

the message from our perspective is

818

00:37:49,750 --> 00:37:46,480

we sure would like to be going back

819

00:37:51,270 --> 00:37:49,760

there we we think that and the other

820

00:37:53,910 --> 00:37:51,280

the other

821

00:37:55,589 --> 00:37:53,920

orbiting satellites of other planets and