



1  
00:00:29,840 --> 00:01:02,229  
foreign

2  
00:01:02,239 --> 00:01:25,030  
me

3  
00:01:28,390 --> 00:01:26,710  
laurissas around the world that'll be

4  
00:01:30,630 --> 00:01:28,400  
proud to hear that we played a song for

5  
00:01:32,469 --> 00:01:30,640  
them this morning and how appropriate

6  
00:01:33,990 --> 00:01:32,479  
that there's a line in there about uh

7  
00:01:35,030 --> 00:01:34,000  
alarm clocks

8  
00:01:36,950 --> 00:01:35,040  
uh

9  
00:01:39,030 --> 00:01:36,960  
we've as you know not really needed

10  
00:01:40,710 --> 00:01:39,040  
alarm clocks the last couple of days but

11  
00:01:50,789 --> 00:01:40,720  
we're up and adam and ready to go for

12  
00:01:54,789 --> 00:01:52,469  
currently the shuttle atlantis is

13  
00:01:56,950 --> 00:01:54,799

orbiting the earth firmly locked

14

00:01:58,789 --> 00:01:56,960  
to the mir space station as this live

15

00:02:00,870 --> 00:01:58,799  
downlink from payload bay cameras aboard

16

00:02:03,910 --> 00:02:00,880  
the shuttle indicate

17

00:02:05,270 --> 00:02:03,920  
in view is the orbiter docking system

18

00:02:07,510 --> 00:02:05,280  
linked up to the

19

00:02:08,710 --> 00:02:07,520  
docking mechanism of the cristal science

20

00:02:10,949 --> 00:02:08,720  
module

21

00:02:12,550 --> 00:02:10,959  
with its omnidirectional antenna clearly

22

00:02:13,589 --> 00:02:12,560  
in view in the upper left-hand corner of

23

00:02:15,670 --> 00:02:13,599  
this picture

24

00:02:19,510 --> 00:02:15,680  
and in the rear of the shuttle's cargo

25

00:02:21,990 --> 00:02:19,520  
bay the space lab science module

26

00:02:23,830 --> 00:02:22,000

where mission specialist bonnie dunbar

27

00:02:25,990 --> 00:02:23,840

and ellen baker have begun perhaps the

28

00:02:28,790 --> 00:02:26,000

busiest day of the five days of joint

29

00:02:32,390 --> 00:02:28,800

scientific operations on tap for the 10

30

00:02:38,630 --> 00:02:32,400

astronauts and cosmonauts aboard the 225

31

00:02:41,830 --> 00:02:40,630

we're now getting live tv from the space

32

00:02:45,830 --> 00:02:41,840

lab

33

00:02:47,750 --> 00:02:45,840

along with commander hood gibson

34

00:02:49,750 --> 00:02:47,760

floating in the foreground

35

00:02:51,430 --> 00:02:49,760

as

36

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

mission specialists ellen baker and

37

00:02:57,110 --> 00:02:53,680

bonnie dunbar perform a variety of

38

00:02:59,430 --> 00:02:57,120

activities mostly metabolic experiments

39

00:03:01,509 --> 00:02:59,440

vladimir dujourov the mere 18 commander

40

00:03:03,350 --> 00:03:01,519

is seen next to dunbar on the right-hand

41

00:03:04,710 --> 00:03:03,360

side of the picture who gibson is in the

42

00:03:07,110 --> 00:03:04,720

foreground

43

00:03:08,470 --> 00:03:07,120

in the rear of the picture is the mir 18

44

00:03:10,390 --> 00:03:08,480

flight engineer he's partially

45

00:03:11,910 --> 00:03:10,400

obstructed from view right now now

46

00:03:15,670 --> 00:03:11,920

coming back into view that's gennady

47

00:03:17,430 --> 00:03:15,680

strekeloff the mirror 18 flight engineer

48

00:03:19,670 --> 00:03:17,440

pilot charlie precourt is back there as

49

00:03:21,509 --> 00:03:19,680

well along with the u.s astronaut norm

50

00:03:23,030 --> 00:03:21,519

thaggart who's wrapping up his fifth

51  
00:03:24,470 --> 00:03:23,040  
flight into space

52  
00:03:26,470 --> 00:03:24,480  
of course so the last three and a half

53  
00:03:28,070 --> 00:03:26,480  
months having been spent aboard the mere

54  
00:03:30,309 --> 00:03:28,080  
space station

55  
00:03:32,789 --> 00:03:30,319  
on board mir at the moment are the mere

56  
00:03:34,229 --> 00:03:32,799  
19 crew who replaced thagger du jour off

57  
00:03:36,630 --> 00:03:34,239  
and struck a loft that's anatoly

58  
00:03:37,589 --> 00:03:36,640  
seloviav and nikolai budaran they're in

59  
00:03:39,910 --> 00:03:37,599  
the uh

60  
00:03:41,830 --> 00:03:39,920  
the process of uh checking out many of

61  
00:03:44,309 --> 00:03:41,840  
the mirrors systems continuing their

62  
00:03:46,550 --> 00:03:44,319  
handover from the mirror 18 crew as they

63  
00:03:47,830 --> 00:03:46,560

begin to set up shop for their two-month

64

00:03:49,670 --> 00:03:47,840

stay aboard the mirror they'll be

65

00:03:57,429 --> 00:03:49,680

relieved by another cosmonaut crew in

66

00:04:46,230 --> 00:03:59,270

atlanta space lab mayor we're back with

67

00:04:52,150 --> 00:04:47,350

atlantis

68

00:05:05,909 --> 00:04:56,150

yeah we can confirm the forward ones

69

00:05:10,550 --> 00:05:08,870

okay great copy dave 6 through 11 and

70

00:05:13,270 --> 00:05:10,560

then we'll stand by

71

00:05:24,230 --> 00:05:13,280

i guess the data from the

72

00:05:28,710 --> 00:05:26,790

atlantis hoot uh you acquired exactly

73

00:05:30,710 --> 00:05:28,720

the data that we needed

74

00:05:33,670 --> 00:05:30,720

procedurally it was just fine and we're

75

00:05:35,029 --> 00:05:33,680

still evaluating the data

76  
00:05:45,430 --> 00:05:35,039  
we have no reason to think there's any

77  
00:05:49,670 --> 00:05:47,189  
this is a special report from cnn i'm

78  
00:05:52,390 --> 00:05:49,680  
john holliman at cnn center in atlanta

79  
00:05:54,710 --> 00:05:52,400  
we're about to go up about 217 miles

80  
00:05:57,350 --> 00:05:54,720  
above the surface of the earth to the

81  
00:05:59,749 --> 00:05:57,360  
core module of the mir space station

82  
00:06:01,590 --> 00:05:59,759  
where the 10 shuttle and

83  
00:06:03,270 --> 00:06:01,600  
smear astronauts and cosmonauts are

84  
00:06:04,710 --> 00:06:03,280  
waiting to spend about 15 minutes with

85  
00:06:06,390 --> 00:06:04,720  
us we have to share our time with

86  
00:06:08,150 --> 00:06:06,400  
somebody else so we have to use the 15

87  
00:06:09,830 --> 00:06:08,160  
minutes as effectively as we can i'm

88  
00:06:11,350 --> 00:06:09,840

going to start with commander hoot

89

00:06:13,029 --> 00:06:11,360

gibson who's just had a new baby

90

00:06:13,909 --> 00:06:13,039

daughter emily as i told you a second

91

00:06:15,830 --> 00:06:13,919

ago

92

00:06:17,590 --> 00:06:15,840

it's nice to have new children how would

93

00:06:19,430 --> 00:06:17,600

you when emily gets to be eight years

94

00:06:25,110 --> 00:06:19,440

old explain what happened on this

95

00:06:29,670 --> 00:06:27,510

well john i suppose she's probably going

96

00:06:31,110 --> 00:06:29,680

to grow up hearing all about it so by

97

00:06:32,469 --> 00:06:31,120

the time she's eight years old she's

98

00:06:34,550 --> 00:06:32,479

probably going to be tired of hearing

99

00:06:35,670 --> 00:06:34,560

about it but uh

100

00:06:40,390 --> 00:06:35,680

i guess

101  
00:06:42,390 --> 00:06:40,400  
grandchildren that that it was

102  
00:06:44,950 --> 00:06:42,400  
perhaps the proudest moment of my life

103  
00:06:47,270 --> 00:06:44,960  
to be able to take part in a in an event

104  
00:06:49,350 --> 00:06:47,280  
such as this in an event

105  
00:06:51,749 --> 00:06:49,360  
the likes of which we haven't

106  
00:06:55,029 --> 00:06:51,759  
haven't tried to do i haven't dreamed of

107  
00:06:55,909 --> 00:06:55,039  
for over 20 years now it's certainly

108  
00:06:58,150 --> 00:06:55,919  
been

109  
00:07:01,110 --> 00:06:58,160  
the piloting challenge of my career and

110  
00:07:03,430 --> 00:07:01,120  
the and the uh and the flight operations

111  
00:07:05,990 --> 00:07:03,440  
challenge of my entire career to get to

112  
00:07:06,790 --> 00:07:06,000  
take part in in an event like this and

113  
00:07:08,629 --> 00:07:06,800

uh

114

00:07:10,150 --> 00:07:08,639

i'm really proud of the crew that i got

115

00:07:11,589 --> 00:07:10,160

to go up with and the folks on the

116

00:07:13,430 --> 00:07:11,599

ground that helped put it all together

117

00:07:16,469 --> 00:07:13,440

and i guess i'll try and convey all of

118

00:07:18,870 --> 00:07:16,479

that to little emily as she gets bigger

119

00:07:20,469 --> 00:07:18,880

yeah how tough a job has it been really

120

00:07:22,870 --> 00:07:20,479

you said it was the piloting challenge

121

00:07:24,950 --> 00:07:22,880

of your career tell me how it was during

122

00:07:27,350 --> 00:07:24,960

the docking in in the last few seconds

123

00:07:29,909 --> 00:07:27,360

of that and uh and tell me if you had

124

00:07:31,909 --> 00:07:29,919

time to listen or feel the two ships

125

00:07:33,830 --> 00:07:31,919

coming together there's that we i've got

126

00:07:35,670 --> 00:07:33,840

a fax in from a viewer in russia who

127

00:07:37,749 --> 00:07:35,680

wants to know that the sensations that

128

00:07:41,909 --> 00:07:37,759

you felt and heard and sensed as you

129

00:07:45,670 --> 00:07:43,990

uh john i'll tell you what we felt from

130

00:07:48,070 --> 00:07:45,680

over on the shuttle side and make sure

131

00:07:49,749 --> 00:07:48,080

you ask the uh the russian crew the mere

132

00:07:51,430 --> 00:07:49,759

18 crew what they felt because i think

133

00:07:54,469 --> 00:07:51,440

they noticed more at the actual moment

134

00:07:57,189 --> 00:07:54,479

of docking than we did

135

00:07:59,270 --> 00:07:57,199

the the most demanding part of the of

136

00:08:01,990 --> 00:07:59,280

the whole rendezvous i felt was when we

137

00:08:04,309 --> 00:08:02,000

intercepted the the alignment cone that

138

00:08:05,990 --> 00:08:04,319

we needed to fly up in and stay within

139

00:08:08,070 --> 00:08:06,000

that alignment cone

140

00:08:09,350 --> 00:08:08,080

uh there was there was a fair amount of

141

00:08:11,909 --> 00:08:09,360

maneuvering and a fair amount of

142

00:08:13,749 --> 00:08:11,919

thrusting that we had to do with the uh

143

00:08:16,070 --> 00:08:13,759

with the orbiter atlantis to get it

144

00:08:17,909 --> 00:08:16,080

established and safely within that

145

00:08:20,469 --> 00:08:17,919

corridor and keep it there

146

00:08:22,629 --> 00:08:20,479

uh once we had it there it was a lot

147

00:08:24,469 --> 00:08:22,639

easier to keep it in the corridor than i

148

00:08:25,909 --> 00:08:24,479

thought it was going to be

149

00:08:28,309 --> 00:08:25,919

and we were able to fly a pretty

150

00:08:30,070 --> 00:08:28,319

accurate approach uh all the way up and

151

00:08:31,990 --> 00:08:30,080

the closer we got

152

00:08:34,230 --> 00:08:32,000

uh the more i was able to determine that

153

00:08:37,509 --> 00:08:34,240

we were going to be able to fly it very

154

00:08:39,589 --> 00:08:37,519

accurately and precisely and so uh

155

00:08:41,829 --> 00:08:39,599

and so it went very smoothly from that

156

00:08:44,470 --> 00:08:41,839

point on

157

00:08:47,430 --> 00:08:44,480

at the actual moment of contact

158

00:08:49,670 --> 00:08:47,440

we didn't feel the docking mechanism

159

00:08:50,949 --> 00:08:49,680

capture or the actual contact when we

160

00:08:52,710 --> 00:08:50,959

first

161

00:08:55,670 --> 00:08:52,720

contacted the mirror

162

00:08:57,350 --> 00:08:55,680

we fire a number of thrusters for about

163

00:08:58,870 --> 00:08:57,360

three seconds straight so of course we

164

00:09:00,630 --> 00:08:58,880

heard the thrusters and felt the

165

00:09:03,590 --> 00:09:00,640

thrusters firing

166

00:09:05,750 --> 00:09:03,600

but in terms of actual thump or actual

167

00:09:07,670 --> 00:09:05,760

contact it was

168

00:09:09,509 --> 00:09:07,680

a little bit of a let

169

00:09:12,070 --> 00:09:09,519

the word letdown really doesn't fit here

170

00:09:13,590 --> 00:09:12,080

but uh there wasn't a bang or any kind

171

00:09:15,509 --> 00:09:13,600

of a clunk that we could hear other than

172

00:09:17,350 --> 00:09:15,519

the thrusters firing yeah why don't you

173

00:09:18,790 --> 00:09:17,360

pass the microphone over to norm and

174

00:09:21,269 --> 00:09:18,800

i'll ask him the same thing and then he

175

00:09:23,269 --> 00:09:21,279

can pass the mic to vladimir who was

176

00:09:24,389 --> 00:09:23,279

over there as well norm um it's

177

00:09:25,990 --> 00:09:24,399

interesting to me we've asked our

178

00:09:27,190 --> 00:09:26,000

viewers around the world to fax in

179

00:09:28,790 --> 00:09:27,200

questions they all want to know what it

180

00:09:30,470 --> 00:09:28,800

feels like what it smells like a lot

181

00:09:32,310 --> 00:09:30,480

more than you know

182

00:09:34,230 --> 00:09:32,320

the scientific things that are going on

183

00:09:37,269 --> 00:09:34,240

there tell me from your position on

184

00:09:39,509 --> 00:09:37,279

board mir uh what it felt like when uh

185

00:09:43,350 --> 00:09:39,519

when hoot piloted the shuttle into the

186

00:09:47,110 --> 00:09:45,350

well i've got some good comparisons i've

187

00:09:48,790 --> 00:09:47,120

been here when we had a progress

188

00:09:50,389 --> 00:09:48,800

resupply ship back and when that

189

00:09:52,470 --> 00:09:50,399

occurred i was probably a foot away from

190

00:09:54,070 --> 00:09:52,480

the node where it impacted i felt

191

00:09:56,070 --> 00:09:54,080

nothing i heard nothing

192

00:09:58,550 --> 00:09:56,080

when the spectre module docked with the

193

00:10:01,030 --> 00:09:58,560

station that's about 20 tons we felt a

194

00:10:03,910 --> 00:10:01,040

very slight vibration but really felt

195

00:10:07,269 --> 00:10:03,920

nothing when the shuttle docked we felt

196

00:10:09,430 --> 00:10:07,279

it the 100 tons uh hitting the station

197

00:10:11,509 --> 00:10:09,440

had some uh impact on us and it was

198

00:10:13,910 --> 00:10:11,519

pretty impressive given the mild uh

199

00:10:15,190 --> 00:10:13,920

sensations with the previous vehicles

200

00:10:16,630 --> 00:10:15,200

yeah okay this is a question for

201  
00:10:17,829 --> 00:10:16,640  
vladimir then i'm going to come back to

202  
00:10:20,470 --> 00:10:17,839  
norm just to let you know where we're

203  
00:10:23,350 --> 00:10:20,480  
going here um vladimir

204  
00:10:25,590 --> 00:10:23,360  
you uh had never spent time on board a

205  
00:10:27,430 --> 00:10:25,600  
space station with americans before was

206  
00:10:29,829 --> 00:10:27,440  
it much different and is was it much

207  
00:10:31,590 --> 00:10:29,839  
different with uh dr norm taggart there

208  
00:10:32,870 --> 00:10:31,600  
doing all these sophisticated medical

209  
00:10:36,870 --> 00:10:32,880  
tests on you the whole time you were

210  
00:10:58,470 --> 00:10:43,829  
um

211  
00:10:58,480 --> 00:11:01,509  
we

212  
00:11:59,430 --> 00:11:02,230  
a

213  
00:12:01,750 --> 00:11:59,440

help with uh

214

00:12:04,630 --> 00:12:01,760

with the problem of fluid redistribution

215

00:12:07,590 --> 00:12:04,640

after uh return to earth we exercise two

216

00:12:10,069 --> 00:12:07,600

times a day and i actually for many days

217

00:12:12,230 --> 00:12:10,079

exercised a full hour and that's actual

218

00:12:13,829 --> 00:12:12,240

time either turning on a bicycle or

219

00:12:15,190 --> 00:12:13,839

running on a treadmill or walking on a

220

00:12:17,590 --> 00:12:15,200

treadmill

221

00:12:19,430 --> 00:12:17,600

and uh in addition to that they also use

222

00:12:20,870 --> 00:12:19,440

a device that folks may not be familiar

223

00:12:23,430 --> 00:12:20,880

with called a lower body negative

224

00:12:25,670 --> 00:12:23,440

pressure device we've used it many times

225

00:12:27,670 --> 00:12:25,680

in the past to evaluate the status of

226

00:12:29,350 --> 00:12:27,680

the heart and zero g the russians

227

00:12:31,590 --> 00:12:29,360

actually use it for training thinking

228

00:12:33,829 --> 00:12:31,600

that it helps people with again the

229

00:12:35,670 --> 00:12:33,839

problem of orthostatic hypertension

230

00:12:37,430 --> 00:12:35,680

medical term but in practical terms that

231

00:12:39,190 --> 00:12:37,440

means when you stand up the tendency to

232

00:12:40,949 --> 00:12:39,200

feel like you're going to pass out and

233

00:12:43,030 --> 00:12:40,959

fall over

234

00:12:44,870 --> 00:12:43,040

and what that does is you get inside a

235

00:12:46,629 --> 00:12:44,880

device that completely encloses the

236

00:12:48,710 --> 00:12:46,639

lower half of your body a differential

237

00:12:51,030 --> 00:12:48,720

pressure is created and actually sucks

238

00:12:52,629 --> 00:12:51,040

the blood into the legs to create the

239

00:12:54,870 --> 00:12:52,639

same sort of distribution of blood and

240

00:12:57,110 --> 00:12:54,880

zero g that the normal person would have

241

00:12:59,190 --> 00:12:57,120

standing in 1g i've done all those

242

00:13:01,269 --> 00:12:59,200

things and i hope it i hope it helps and

243

00:13:03,430 --> 00:13:01,279

i guess i'll find out in about a week

244

00:13:04,870 --> 00:13:03,440

yep you expected to be in space about 90

245

00:13:07,030 --> 00:13:04,880

days you've been up

246

00:13:08,870 --> 00:13:07,040

nearly nearly four months now how much

247

00:13:13,430 --> 00:13:08,880

of a hardship has that been for you and

248

00:13:18,150 --> 00:13:15,990

i miss my family a lot

249

00:13:19,990 --> 00:13:18,160

i've depended on them for support and

250

00:13:21,670 --> 00:13:20,000

i've gotten it through the years it's

251  
00:13:23,750 --> 00:13:21,680  
tough to be away from home i spent a

252  
00:13:25,269 --> 00:13:23,760  
year in vietnam i guess i spent nearly

253  
00:13:26,870 --> 00:13:25,279  
four months here

254  
00:13:27,670 --> 00:13:26,880  
it's something that you feel you have to

255  
00:13:29,269 --> 00:13:27,680  
do

256  
00:13:30,710 --> 00:13:29,279  
but you also realize you're making

257  
00:13:33,350 --> 00:13:30,720  
sacrifices when you do it and they

258  
00:13:36,470 --> 00:13:33,360  
sacrifice too and i feel badly sometimes

259  
00:13:38,550 --> 00:13:36,480  
that i get to have all this fun so to

260  
00:13:40,870 --> 00:13:38,560  
some extent the sacrifice is worth it

261  
00:13:42,389 --> 00:13:40,880  
they don't get that benefit well i'm

262  
00:13:44,550 --> 00:13:42,399  
going to come home and probably stay

263  
00:13:46,069 --> 00:13:44,560

home a little longer this time and i i

264

00:13:48,150 --> 00:13:46,079

miss them and i look forward to seeing

265

00:13:49,430 --> 00:13:48,160

them take a couple of cop days why don't

266

00:13:51,190 --> 00:13:49,440

you do this what i'm going to do at the

267

00:13:53,350 --> 00:13:51,200

end of this vision as well

268

00:13:55,269 --> 00:13:53,360

this question for nick budaran is the um

269

00:13:57,430 --> 00:13:55,279

the rookie in the uh in the atlantic

270

00:14:00,150 --> 00:13:57,440

crew you've been there for uh about a

271

00:14:13,670 --> 00:14:00,160

week now what do you miss most about the

272

00:14:13,680 --> 00:14:21,829

um

273

00:14:25,350 --> 00:14:23,430

well tell you the truth i don't have an

274

00:14:28,150 --> 00:14:25,360

opportunity to miss anything there's a

275

00:14:30,790 --> 00:14:28,160

lot of work we have a period of changing

276

00:14:35,670 --> 00:14:30,800

the guard as it were and a lot of things

277

00:14:38,949 --> 00:14:37,590

we will immediately

278

00:14:42,629 --> 00:14:38,959

prepare

279

00:14:46,230 --> 00:14:42,639

our spacesuits for an eva

280

00:14:49,430 --> 00:14:47,990

so we're not going to have too much i'm

281

00:14:51,269 --> 00:14:49,440

not going to have too much time to miss

282

00:14:54,150 --> 00:14:51,279

anything

283

00:14:56,230 --> 00:14:54,160

well you must be beautiful from up there

284

00:14:58,310 --> 00:14:56,240

we all watched the docking the other day

285

00:15:00,949 --> 00:14:58,320

and it was thrilling to see it went so

286

00:15:02,790 --> 00:15:00,959

flawlessly commander i am curious you

287

00:15:05,350 --> 00:15:02,800

had practiced it in simulation so many

288

00:15:09,990 --> 00:15:05,360

times how did the real thing compared to

289

00:15:13,430 --> 00:15:12,069

that's a real good question the the real

290

00:15:15,829 --> 00:15:13,440

thing was

291

00:15:18,870 --> 00:15:15,839

if anything perhaps a little bit easier

292

00:15:21,670 --> 00:15:18,880

than all of the simulations because uh

293

00:15:23,990 --> 00:15:21,680

in all of the simulations we have a

294

00:15:26,550 --> 00:15:24,000

visual system that that displays what

295

00:15:28,710 --> 00:15:26,560

the view out the window would look like

296

00:15:31,269 --> 00:15:28,720

we have a number of computer systems in

297

00:15:32,550 --> 00:15:31,279

the simulator that have to play together

298

00:15:34,310 --> 00:15:32,560

and they

299

00:15:37,269 --> 00:15:34,320

frequently are how do i put it they're

300

00:15:39,350 --> 00:15:37,279

frequently less than perfect and we wind

301  
00:15:41,030 --> 00:15:39,360  
up having to extrapolate a little bit

302  
00:15:42,470 --> 00:15:41,040  
and assume a little bit when we're doing

303  
00:15:44,550 --> 00:15:42,480  
the simulations

304  
00:15:46,470 --> 00:15:44,560  
in actually flying the flight and

305  
00:15:47,750 --> 00:15:46,480  
actually flying with the onboard systems

306  
00:15:49,749 --> 00:15:47,760  
and all of the

307  
00:15:51,350 --> 00:15:49,759  
the computers working correctly and

308  
00:15:53,269 --> 00:15:51,360  
working properly

309  
00:15:55,829 --> 00:15:53,279  
in addition to being able to look

310  
00:15:57,910 --> 00:15:55,839  
outside and see where the station really

311  
00:15:58,710 --> 00:15:57,920  
is see what the view really is telling

312  
00:16:00,629 --> 00:15:58,720  
us

313  
00:16:03,590 --> 00:16:00,639

we have a whole lot better information

314

00:16:05,430 --> 00:16:03,600

than what we have in the simulator so in

315

00:16:07,189 --> 00:16:05,440

in some ways it's easier to do when you

316

00:16:08,389 --> 00:16:07,199

actually fly it

317

00:16:10,790 --> 00:16:08,399

commander if you would pass the

318

00:16:13,110 --> 00:16:10,800

microphone to uh norm sagart i would

319

00:16:15,189 --> 00:16:13,120

like to ask the doctor about his

320

00:16:16,949 --> 00:16:15,199

experience in space after so many months

321

00:16:18,550 --> 00:16:16,959

three months i understand that there are

322

00:16:20,790 --> 00:16:18,560

some physical changes on the body

323

00:16:23,829 --> 00:16:20,800

there's concern about what is it anemia

324

00:16:25,829 --> 00:16:23,839

and maybe some some weight loss

325

00:16:26,710 --> 00:16:25,839

have you noticed any changes in your

326

00:16:31,110 --> 00:16:26,720

body

327

00:16:33,990 --> 00:16:32,389

you do get

328

00:16:36,069 --> 00:16:34,000

perhaps what would be considered an

329

00:16:38,629 --> 00:16:36,079

anemia

330

00:16:40,069 --> 00:16:38,639

i suppose what happens is uh you get

331

00:16:41,749 --> 00:16:40,079

almost what would amount to a blood

332

00:16:43,030 --> 00:16:41,759

transfusion because all the blood that's

333

00:16:44,790 --> 00:16:43,040

normally sequestered in the legs

334

00:16:46,550 --> 00:16:44,800

redistributes to the upper body and i

335

00:16:48,310 --> 00:16:46,560

think blood cell production probably

336

00:16:50,230 --> 00:16:48,320

shuts down for a while but as soon as

337

00:16:52,069 --> 00:16:50,240

those blood cells start dying off then

338

00:16:53,350 --> 00:16:52,079

you start producing humans so i doubt

339

00:16:55,749 --> 00:16:53,360

that there are really fundamental

340

00:16:57,990 --> 00:16:55,759

changes in the blood some question about

341

00:16:59,990 --> 00:16:58,000

whether there are immuno immunological

342

00:17:01,910 --> 00:17:00,000

changes the white cells at least in the

343

00:17:04,230 --> 00:17:01,920

test tube don't seem to be as active as

344

00:17:05,909 --> 00:17:04,240

they would be in a person who had not

345

00:17:08,390 --> 00:17:05,919

gone into zero g

346

00:17:10,470 --> 00:17:08,400

uh my true crewmates lost no weight in

347

00:17:12,230 --> 00:17:10,480

fact uh village and gennady i think it

348

00:17:13,829 --> 00:17:12,240

first actually may be gained a little i

349

00:17:15,590 --> 00:17:13,839

lost a little bit of weight but i bet

350

00:17:17,669 --> 00:17:15,600

i'll put that back on right away after i

351  
00:17:19,909 --> 00:17:17,679  
get back there are changes but none of

352  
00:17:21,829 --> 00:17:19,919  
them seem to preclude staying in space

353  
00:17:23,669 --> 00:17:21,839  
for about as long as you would want to

354  
00:17:26,309 --> 00:17:23,679  
if there are limitations they may have

355  
00:17:27,909 --> 00:17:26,319  
to do with calcium loss from bone and

356  
00:17:31,270 --> 00:17:27,919  
obviously the radiation that you

357  
00:17:35,990 --> 00:17:32,630  
dr packard if you would pass the

358  
00:17:40,950 --> 00:17:37,830  
good morning atlantis mir this is terry

359  
00:17:44,470 --> 00:17:40,960  
casey wjks jacksonville how do you hear

360  
00:17:47,350 --> 00:17:45,990  
good morning terry we have you loud and

361  
00:17:49,350 --> 00:17:47,360  
clear

362  
00:17:51,270 --> 00:17:49,360  
wonderful good to talk to you all thank

363  
00:17:53,669 --> 00:17:51,280

you for the time question for norm

364

00:17:55,350 --> 00:17:53,679

taggart and nikolai budaran and if both

365

00:17:56,870 --> 00:17:55,360

of you would respond in english it would

366

00:17:58,390 --> 00:17:56,880

be appreciated

367

00:18:02,870 --> 00:17:58,400

who's running that thing up there right

368

00:18:07,270 --> 00:18:05,350

the shuttle is uh actually running it

369

00:18:08,549 --> 00:18:07,280

and i assume the shuttle's on autopilot

370

00:18:10,950 --> 00:18:08,559

maintaining the orientation of the

371

00:18:12,470 --> 00:18:10,960

shuttle uh the host complex rather and

372

00:18:14,390 --> 00:18:12,480

it has to do that because the mirror

373

00:18:16,150 --> 00:18:14,400

station depends on its solar batteries

374

00:18:18,230 --> 00:18:16,160

for electrical energy and they have to

375

00:18:19,669 --> 00:18:18,240

point to the sun

376

00:18:21,750 --> 00:18:19,679

this is actually what i'd like to hear

377

00:18:24,390 --> 00:18:21,760

the response from both you dr thangard

378

00:18:26,310 --> 00:18:24,400

and uh your comrade budaran

379

00:18:27,990 --> 00:18:26,320

nasa's budget is facing dramatic cuts

380

00:18:29,669 --> 00:18:28,000

over the next several years we've got

381

00:18:32,150 --> 00:18:29,679

some head hunters in congress who want

382

00:18:34,710 --> 00:18:32,160

to kill this mission you're in phase one

383

00:18:37,669 --> 00:18:34,720

of it russia is politically unstable

384

00:18:38,470 --> 00:18:37,679

anything could happen anytime given all

385

00:18:43,190 --> 00:18:38,480

that

386

00:18:47,430 --> 00:18:43,200

odds up there both both you personally

387

00:18:51,270 --> 00:18:49,110

well just think for a moment what it

388

00:18:52,789 --> 00:18:51,280

took to make all of this happen

389

00:18:54,830 --> 00:18:52,799

think of the technology that were

390

00:18:57,830 --> 00:18:54,840

required and remember that a lot of that

391

00:18:59,830 --> 00:18:57,840

technology has other uses on earth and

392

00:19:02,310 --> 00:18:59,840

in fact a lot of what we take is

393

00:19:03,990 --> 00:19:02,320

commonplace on earth is directly

394

00:19:05,990 --> 00:19:04,000

attributable to developments that came

395

00:19:07,830 --> 00:19:06,000

about through space research the

396

00:19:09,430 --> 00:19:07,840

communication satellites we use when you

397

00:19:11,990 --> 00:19:09,440

pick up a phone to make a long distance

398

00:19:13,909 --> 00:19:12,000

call that's dependent on satellites that

399

00:19:15,430 --> 00:19:13,919

came out of space research

400

00:19:17,350 --> 00:19:15,440

the number of

401  
00:19:21,029 --> 00:19:17,360  
medical items

402  
00:19:22,549 --> 00:19:21,039  
nonetheless useful that have been

403  
00:19:24,870 --> 00:19:22,559  
developed first

404  
00:19:27,029 --> 00:19:24,880  
and depend on research and developments

405  
00:19:29,110 --> 00:19:27,039  
that occurred in space research there

406  
00:19:31,110 --> 00:19:29,120  
are a whole long list of things uh but

407  
00:19:33,590 --> 00:19:31,120  
at the last i think it's the spirit of

408  
00:19:35,590 --> 00:19:33,600  
human adventure the desire to explore

409  
00:19:37,590 --> 00:19:35,600  
and you need to move forward or you move

410  
00:19:40,310 --> 00:19:37,600  
backward you can't stand still this

411  
00:19:44,390 --> 00:19:40,320  
program moves forward

412  
00:19:53,270 --> 00:19:46,789  
space lab abuse and pack we have a good