1
00:01:15,140 --> 00:01:13,490
good morning Atlanta smear hey good

2
00:01:20,540 --> 00:01:15,150
morning dad I thought we talked to you a

3
00:01:22,610 --> 00:01:20,550
walk before this yeah I did too but it's

4
00:01:37,460 --> 00:01:22,620
real real happy to give you an on-time

5
00:01:42,140 --> 00:01:37,470
wake-up call this is Mission Control

6
00:01:50,330 --> 00:01:42,150
Houston this live picture male from the

7
00:01:52,609 --> 00:01:50,340
shuttle Space Lab module this picture

8
00:01:55,040 --> 00:01:52,619
showing mission specialists Ellen Baker

9
00:01:56,840 --> 00:01:55,050
and Bonnie Dunbar in the space lab

10
00:01:59,240 --> 00:01:56,850
science workshop in the rear of Atlantis

11
00:02:00,560 --> 00:01:59,250
is cargo bay beginning to set up the

12
00:02:02,900 --> 00:02:00,570
lower body negative pressure device

13
00:02:04,310 --> 00:02:02,910

that's the white sac that you see

14
00:02:08,380 --> 00:02:04,320
floating on the left side of the screen

15
00:02:12,170 --> 00:02:08,390
next to Baker that device so we've used

16
00:02:13,910 --> 00:02:12,180
in which near 18 crew members lat

17
00:02:15,710 --> 00:02:13,920
America's sure off Donati striking off

18
00:02:17,900 --> 00:02:15,720
the North a gird we'll each take turns

19
00:02:20,480 --> 00:02:17,910
climbing into over the next several days

20
00:02:22,970 --> 00:02:20,490
and in fact after Atlantis is undocking

21
00:02:25,100 --> 00:02:22,980
from the earth and to help draw fluids

22
00:02:26,960 --> 00:02:25,110
evenly throughout their bodies in a

23
00:02:29,750 --> 00:02:26,970
countermeasure activity designed to help

24
00:02:31,900 --> 00:02:29,760
them adapt to Earth's gravity once

25
00:02:34,250 --> 00:02:31,910
Atlantis returns to Earth on Friday

26
00:02:36,320 --> 00:02:34,260
Dunbar has also been involved in

27
00:02:38,300 --> 00:02:36,330
activities aboard the space lab this

28
00:02:41,000 --> 00:02:38,310
morning with a mere 18 crew who are in

29
00:02:42,710 --> 00:02:41,010
essence the three guinea pigs being

30
00:02:44,660 --> 00:02:42,720
perfect subjects for the study of the

31
00:02:56,050 --> 00:02:44,670
effect of long exposure to

32
00:03:00,820 --> 00:02:58,360
in this picture from the shuttle Space

33
00:03:02,230 --> 00:03:00,830
Lab module d'azyr off is putting his

34
00:03:04,000 --> 00:03:02,240
shirt back on after having been

35
00:03:07,090 --> 00:03:04,010
instrumented for the lower body negative

36
00:03:08,770 --> 00:03:07,100
pressure device by Bonnie Dunbar payload

37
00:03:11,740 --> 00:03:08,780
commander Ellen Baker is on the left

38
00:03:18,960 --> 00:03:11,750

side of the picture she is working to

39
00:03:22,510 --> 00:03:18,970
hook up all of the telemetry wires and

40
00:03:25,210 --> 00:03:22,520
and monitors for the lower body negative

41
00:03:28,960 --> 00:03:25,220
pressure device pilot Charlie Precourt

42
00:03:31,150 --> 00:03:28,970
in the foreground they're armed with a

43
00:03:33,280 --> 00:03:31,160
camera to document all the activity

44
00:03:45,600 --> 00:03:33,290
that's taking place in the shuttle space

45
00:03:48,630 --> 00:03:47,250
yeah and I understand you're also

46
00:03:53,400 --> 00:03:48,640
looking forward to getting a good

47
00:03:55,710 --> 00:03:53,410
old-fashioned American hot dog hot dogs

48
00:03:58,170 --> 00:03:55,720
and hamburgers and ice cream will be

49
00:04:00,240 --> 00:03:58,180
great all right if you would pass the

50
00:04:02,430 --> 00:04:00,250
microphone please back to commander

51
00:04:05,100 --> 00:04:02,440
Gibson I have a few questions for him

52
00:04:07,920 --> 00:04:05,110
about the work he's done this week

53
00:04:10,200 --> 00:04:07,930
commander Gibson you managed to dock the

54
00:04:13,230 --> 00:04:10,210
shuttle you brought it in on schedule

55
00:04:15,990 --> 00:04:13,240
under budget and within an inch of its

56
00:04:18,180 --> 00:04:16,000
life how much training did you get on

57
00:04:20,220 --> 00:04:18,190
the ground in a simulator for that and

58
00:04:26,370 --> 00:04:20,230
then how did the real thing compared to

59
00:04:27,930 --> 00:04:26,380
the training well Leon there's a there's

60
00:04:29,700 --> 00:04:27,940
a real important point that I want to

61
00:04:33,150 --> 00:04:29,710
make here and that is that we brought

62
00:04:35,700 --> 00:04:33,160
the shuttle in on time and successfully

63
00:04:37,740 --> 00:04:35,710

accomplished a docking I was the one who

64
00:04:40,470 --> 00:04:37,750
had his hand physically on the controls

65
00:04:43,500 --> 00:04:40,480
but I would not have gotten there

66
00:04:45,930 --> 00:04:43,510
without the help of a awful lot of folks

67
00:04:47,460 --> 00:04:45,940
who you're looking at right now and an

68
00:04:49,830 --> 00:04:47,470
awful lot of folks on the ground in

69
00:04:52,409 --> 00:04:49,840
Mission Control and the entire team that

70
00:04:55,350 --> 00:04:52,419
put that all together as you mentioned

71
00:04:57,510 --> 00:04:55,360
we have spent a tremendous amount of

72
00:05:00,480 --> 00:04:57,520
time in the simulators training to do

73
00:05:03,750 --> 00:05:00,490
this particular task and training to do

74
00:05:05,010 --> 00:05:03,760
it under ideal conditions and training

75
00:05:07,320 --> 00:05:05,020
to do it under less than ideal

76
00:05:09,450 --> 00:05:07,330
conditions and all of those things all

77
00:05:10,740 --> 00:05:09,460
of those things play together to to

78
00:05:12,150 --> 00:05:10,750
really prepare you to go out and

79
00:05:15,300 --> 00:05:12,160
actually do it

80
00:05:16,770 --> 00:05:15,310
we had somewhat ideal conditions in some

81
00:05:19,890 --> 00:05:16,780
ways and we had less than ideal

82
00:05:24,290 --> 00:05:19,900
conditions in other ways for the actual

83
00:05:27,480 --> 00:05:24,300
docking and the fact that the fact we

84
00:05:30,030 --> 00:05:27,490
wanted to make it look easy and the fact

85
00:05:32,070 --> 00:05:30,040
that we came close to making it look

86
00:05:33,870 --> 00:05:32,080
easy it was because of all that training

87
00:05:35,760 --> 00:05:33,880
and because of all the great and

88
00:05:38,880 --> 00:05:35,770

excellent work that got done by a lot of

89
00:05:41,550 --> 00:05:38,890
people on the ground and and the people

90
00:05:43,650 --> 00:05:41,560
that we had up here well of course now

91
00:05:45,000 --> 00:05:43,660
that you've put them together you the

92
00:05:48,030 --> 00:05:45,010
whole crew you're going to have to take

93
00:05:50,190 --> 00:05:48,040
them apart coming up this Tuesday if all

94
00:05:52,380 --> 00:05:50,200
goes according to schedule on July 4th

95
00:05:54,060 --> 00:05:52,390
why don't you tell us how that works or

96
00:05:57,920 --> 00:05:54,070
if you wish pass it to another crew

97
00:06:04,920 --> 00:06:00,330
I'd like to have our pilot Charlie

98
00:06:06,570 --> 00:06:04,930
Precourt talk about that well we're

99
00:06:10,110 --> 00:06:06,580
looking forward to the undocking for a

100
00:06:12,510 --> 00:06:10,120
couple of reasons we are going to be

101
00:06:15,480 --> 00:06:12,520
able to show it to you through video

102
00:06:17,640 --> 00:06:15,490
from both the Soyuz and from the shuttle

103
00:06:19,380 --> 00:06:17,650
and we'll be able to share with you the

104
00:06:21,810 --> 00:06:19,390
experience in a little more detail and

105
00:06:24,810 --> 00:06:21,820
you saw it during the docking it's

106
00:06:26,610 --> 00:06:24,820
basically operationally for us is pretty

107
00:06:30,450 --> 00:06:26,620
much the reverse of the process that got

108
00:06:34,560 --> 00:06:30,460
us to the docking the Soyuz commanded by

109
00:06:37,560 --> 00:06:34,570
Anatoly here and also accompanied by the

110
00:06:40,020 --> 00:06:37,570
flight engineer Nikolai they will undock

111
00:06:42,690 --> 00:06:40,030
the Sawyer's return capsule before we

112
00:06:44,160 --> 00:06:42,700
leave the station and they will move to

113
00:06:46,950 --> 00:06:44,170

a position where they can actually film

114
00:06:49,140 --> 00:06:46,960
our undocking of the shuttle and then we

115
00:06:52,170 --> 00:06:49,150
will move out further and distance from

116
00:06:54,000 --> 00:06:52,180
the station when we undock and we will

117
00:06:56,930 --> 00:06:54,010
station keep in a position where we can

118
00:07:00,720 --> 00:06:56,940
refill the docking of the soyuz capsule

119
00:07:02,970 --> 00:07:00,730
by anatoly all of that should make for

120
00:07:05,370 --> 00:07:02,980
some very interesting and be able to

121
00:07:08,370 --> 00:07:05,380
demonstrate on film the processes that

122
00:07:10,080 --> 00:07:08,380
we went through to coordinate bringing

123
00:07:11,940 --> 00:07:10,090
these two massive vehicles together in

124
00:07:13,170 --> 00:07:11,950
the first place so we're really looking

125
00:07:14,370 --> 00:07:13,180
forward to that we're really looking

126
00:07:14,880 --> 00:07:14,380
forward to sharing it with you on the

127
00:07:18,810 --> 00:07:14,890
ground

128
00:07:24,590 --> 00:07:18,820
let me ask anatoly then a few questions

129
00:07:24,600 --> 00:07:28,960
Natalia

130
00:07:43,990 --> 00:07:33,100
commander Folio I'm ready

131
00:07:51,110 --> 00:07:45,950
understand we're talking about the

132
00:07:53,300 --> 00:07:51,120
undocking about flying around the

133
00:08:02,950 --> 00:07:53,310
complex and taking pictures when the

134
00:08:08,300 --> 00:08:05,930
first of all I think it will be a very

135
00:08:11,510 --> 00:08:08,310
beautiful sight because when we were

136
00:08:14,840 --> 00:08:11,520
approaching the MIR station the entire

137
00:08:18,800 --> 00:08:14,850
complex is very beautiful and we can

138
00:08:19,970 --> 00:08:18,810

also see through the window and look

139
00:08:24,350 --> 00:08:19,980
through the window and see the shuttle

140
00:08:28,880 --> 00:08:24,360
which is very very close and it's a very

141
00:08:30,380 --> 00:08:28,890
beautiful bird so I think that when we

142
00:08:34,300 --> 00:08:30,390
see all of this from the Soyuz

143
00:08:37,580 --> 00:08:34,310
spacecraft if we how we see Atlantis

144
00:08:40,940 --> 00:08:37,590
depart from mere we will put this on

145
00:08:44,690 --> 00:08:40,950
film and share our feelings and opinions

146
00:08:46,820 --> 00:08:44,700
with you commander how long will you be

147
00:08:49,090 --> 00:08:46,830
on the mirror once the shuttle Atlantis

148
00:08:54,640 --> 00:08:49,100
depart

149
00:09:08,270 --> 00:09:03,530
dancing a rather short mission and on 30

150
00:09:15,770 --> 00:09:08,280
August we will return to Earth the next

151
00:09:18,550 --> 00:09:15,780
crew just slightly over two months and

152
00:09:22,310 --> 00:09:18,560
we'll be relieved by another crew

153
00:09:24,470 --> 00:09:22,320
commander briefly how do you think the

154
00:09:28,520 --> 00:09:24,480
history of this mission is going to be

155
00:09:33,170 --> 00:09:28,530
written in your country yes 'muslim of

156
00:09:40,240 --> 00:09:33,180
Duke Slava kakushita Vista reaches

157
00:09:49,300 --> 00:09:40,250
Campania darker history shows machine

158
00:09:54,370 --> 00:09:52,310
well even during training in many

159
00:09:56,930 --> 00:09:54,380
training and many interviews this

160
00:10:00,740 --> 00:09:56,940
question was encountered many times and

161
00:10:02,750 --> 00:10:00,750
I think that I think it is worthwhile

162
00:10:05,420 --> 00:10:02,760
revisiting it because it is very

163
00:10:08,900 --> 00:10:05,430

important we with this flight are

164
00:10:10,730 --> 00:10:08,910
beginning a great program and I would

165
00:10:14,050 --> 00:10:10,740
say it's more than a program it is an

166
00:10:20,389 --> 00:10:14,060
absolutely necessary cooperative effort

167
00:10:23,480 --> 00:10:20,399
to put forward cosmonautics and this

168
00:10:24,949 --> 00:10:23,490
process must proceed quickly because

169
00:10:28,850 --> 00:10:24,959
these two systems can supplement

170
00:10:33,350 --> 00:10:28,860
complement one another and this

171
00:10:43,220 --> 00:10:33,360
development process it's acceleration of

172
00:10:44,750 --> 00:10:43,230
this process will be significant you

173
00:10:46,400 --> 00:10:44,760
always want to be prepared we have an

174
00:10:49,400 --> 00:10:46,410
expression onboard the crew which is

175
00:10:51,019 --> 00:10:49,410
good Toby Thank You Toby but we have an

176
00:10:52,130 --> 00:10:51,029
extra which which means prepared always

177
00:10:54,199 --> 00:10:52,140
prepared

178
00:10:55,910 --> 00:10:54,209
we had two cakes with us we had an

179
00:10:57,769 --> 00:10:55,920
actual cake that one of our other

180
00:11:00,079 --> 00:10:57,779
astronauts Marsha Ivins made for us and

181
00:11:02,990 --> 00:11:00,089
we also had just in case it fell apart

182
00:11:04,880 --> 00:11:03,000
in during the launch we also had a an

183
00:11:06,530 --> 00:11:04,890
inflatable birthday cake with candles

184
00:11:09,590 --> 00:11:06,540
that we use so we were well prepared

185
00:11:11,329 --> 00:11:09,600
all right well to the crew of the mirror

186
00:11:15,680 --> 00:11:11,339
and the space shuttle Atlantis who are

187
00:11:23,550 --> 00:11:15,690
in orbit thank you spasiba and we hope

188
00:11:27,750 --> 00:11:25,620

this is Mission Control Houston work

189
00:11:29,550 --> 00:11:27,760
continues aboard the shuttle space Space

190
00:11:32,550 --> 00:11:29,560
Lab module in the rear of Atlantis as

191
00:11:35,810 --> 00:11:32,560
cargo bay as a mission specialist Bonnie

192
00:11:37,590 --> 00:11:35,820
Dunbar monitors the progress of

193
00:11:39,330 --> 00:11:37,600
biomechanical tests which have been

194
00:11:41,940 --> 00:11:39,340
ongoing most of the morning on the MIR

195
00:11:43,769 --> 00:11:41,950
18 crew members vladimir Doozer off

196
00:11:45,140 --> 00:11:43,779
gennady strike al off in u.s. astronaut

197
00:11:47,670 --> 00:11:45,150
norm thagard

198
00:11:49,380 --> 00:11:47,680
just two Dunbar's left is flight

199
00:11:50,970 --> 00:11:49,390
engineer gennady struck a LOF who has

200
00:11:54,450 --> 00:11:50,980
been in space for a hundred and ten days

201
00:11:57,210 --> 00:11:54,460
now he and his commander to giraffe and

202
00:11:59,130 --> 00:11:57,220
his crew mate thagard will be returning

203
00:12:00,840 --> 00:11:59,140
to earth next Friday aboard the shuttle

204
00:12:05,310 --> 00:12:00,850
Atlantis for a landing at the Kennedy

205
00:12:09,090 --> 00:12:05,320
Space Center the tests have been in two

206
00:12:12,570 --> 00:12:09,100
parts so far baroreflex testing using a

207
00:12:14,880 --> 00:12:12,580
special type of neck cuff which measures

208
00:12:16,890 --> 00:12:14,890
the arterial strength of the the veins

209
00:12:19,530 --> 00:12:16,900
and the neck muscles as well as blood

210
00:12:21,630 --> 00:12:19,540
pressure and other cardiovascular

211
00:12:24,000 --> 00:12:21,640
responses after long exposure to

212
00:12:25,320 --> 00:12:24,010
microgravity also on the left side of

213
00:12:26,880 --> 00:12:25,330

the screen and this picture coming to

214
00:12:28,770 --> 00:12:26,890
you from the shuttle Space Lab as the

215
00:12:31,440 --> 00:12:28,780
lower body negative pressure device a

216
00:12:34,079 --> 00:12:31,450
sort of silent cylindrical type sac in

217
00:12:36,150 --> 00:12:34,089
which crewmembers crawl into to use a

218
00:12:37,890 --> 00:12:36,160
negative pressure to more evenly

219
00:12:40,020 --> 00:12:37,900
distribute fluids flowing through their

220
00:12:42,990 --> 00:12:40,030
body preventing them from pooling in the

221
00:12:45,900 --> 00:12:43,000
subjects head and thus being used as a

222
00:12:53,250 --> 00:12:45,910
countermeasure against the effects of

223
00:13:06,449 --> 00:12:53,260
long exposure to microgravity let's go

224
00:13:08,900 --> 00:13:06,459
into the this is the flight deck this is

225
00:13:13,740 --> 00:13:08,910
just like a flight deck of an airplane

226
00:13:24,820 --> 00:13:13,750
this is the commander's seat please have

227
00:13:29,680 --> 00:13:27,710
note that the view is just the same as

228
00:13:34,250 --> 00:13:29,690
out of an airplane

229
00:13:41,540 --> 00:13:34,260
we have screens here for displaying data

230
00:13:50,450 --> 00:13:41,550
from computers that's the seat for the

231
00:13:59,550 --> 00:13:50,460
pilot commander is the pilot and the

232
00:14:09,610 --> 00:14:04,170
that linear ticket area that's the

233
00:14:20,590 --> 00:14:09,620
control for controlling the engines and

234
00:14:44,050 --> 00:14:20,600
a area for the life-support system for

235
00:14:57,019 --> 00:14:48,439
the commander controls the aircraft

236
00:15:07,220 --> 00:14:57,029
using these controls we have the rear

237
00:15:10,389 --> 00:15:07,230
deck or the aft deck and this is where

238
00:15:23,329 --> 00:15:10,399

the commander's was during the

239
00:15:25,040 --> 00:15:23,339
rendezvous and docking control the craft

240
00:15:31,460 --> 00:15:25,050
from this station and to make

241
00:15:34,129 --> 00:15:31,470
observations through these on the right

242
00:15:36,860 --> 00:15:34,139
hand we have on the right hand side we

243
00:15:43,430 --> 00:15:36,870
normally have panel to control the

244
00:15:46,189 --> 00:15:43,440
manipulator arm arm right now this has

245
00:15:53,809 --> 00:15:46,199
been converted for used by a mechanism

246
00:16:11,610 --> 00:15:53,819
for controlling docking view through the

247
00:16:39,150 --> 00:16:15,400
in the center we have a panel for

248
00:16:39,160 --> 00:16:52,590
Charlie was right here where we are

249
00:17:03,440 --> 00:16:55,810
normally however he would be found in

250
00:17:27,140 --> 00:17:11,970
don't charlie assisted in all aspects

251
00:17:38,580 --> 00:17:29,640
operation during rendezvous and docking

252
00:17:42,090 --> 00:17:38,590
is very complex however there were no

253
00:17:52,430 --> 00:17:42,100
problems during the rendezvous or during

254
00:17:58,220 --> 00:17:55,400
I bet the various yes that leads back

255
00:18:08,690 --> 00:17:58,230
and right now there is an excellent view

256
00:18:20,930 --> 00:18:12,470
oh you hit that plane that maybe we can

257
00:18:22,780 --> 00:18:20,940
show this view this is one of the

258
00:18:31,160 --> 00:18:22,790
modules of the MIR station

259
00:18:37,030 --> 00:18:31,170
it's the cristal module crystal the

260
00:18:51,550 --> 00:18:40,160
fortunately these mechanisms operated

261
00:19:08,650 --> 00:18:54,890
Peruggia here are the other modules of

262
00:19:16,120 --> 00:19:11,750
and this module contains a service

263
00:19:21,950 --> 00:19:16,130

module for doing performing

264
00:19:35,360 --> 00:19:21,960
extracurricular activity cosmonauts use

265
00:19:52,200 --> 00:19:35,370
this module during EPA's here we have

266
00:20:00,630 --> 00:19:56,000
middle deck the middle deck resembles

267
00:20:04,350 --> 00:20:00,640
the everyday deck or the housekeeping

268
00:20:09,000 --> 00:20:04,360
deck of the Soyuz the members of the

269
00:20:13,980 --> 00:20:09,010
crew spend much time here we have

270
00:20:22,680 --> 00:20:13,990
instruments here for providing food we

271
00:20:34,370 --> 00:20:22,690
have innocence a galley a toilet many

272
00:20:48,919 --> 00:20:38,070
in this metallic container on the right

273
00:21:00,570 --> 00:20:56,399
sometimes this is a laboratory that is

274
00:21:02,690 --> 00:21:00,580
found in the payload Bay and the access

275
00:21:08,100 --> 00:21:02,700
to this laboratory is through a tunnel

276
00:21:17,690 --> 00:21:08,110
which is approximately 8 meters or 25

277
00:21:28,789 --> 00:21:21,840
but the space lab is very bright there's

278
00:21:32,159 --> 00:21:28,799
a lot of light here course the primary

279
00:21:35,940 --> 00:21:32,169
reason for the laboratory is to perform

280
00:21:41,149 --> 00:21:35,950
all sorts of different scientific

281
00:21:45,409 --> 00:21:41,159
experiments for example we right now

282
00:22:02,279 --> 00:21:55,889
designed to study changes humans during

283
00:22:09,470 --> 00:22:02,289
long term exposure to the weightless

284
00:22:12,750 --> 00:22:09,480
conditions of space primarily this is a

285
00:22:16,649 --> 00:22:12,760
system for controlling all of these

286
00:22:18,570 --> 00:22:16,659
systems in the space lab this is Mission

287
00:22:20,220 --> 00:22:18,580
Control Houston once again this live

288
00:22:24,930 --> 00:22:20,230

picture coming from the shuttle space

289
00:22:26,580 --> 00:22:24,940
lab module showing mere 18 flight

290
00:22:28,500 --> 00:22:26,590
engineer gennady struggle off in the

291
00:22:32,430 --> 00:22:28,510
lower body negative pressure device this

292
00:22:35,129 --> 00:22:32,440
is the first use of the LB NP device on

293
00:22:39,570 --> 00:22:35,139
this joint phase of the shuttle-mir

294
00:22:42,629 --> 00:22:39,580
dockings mission strike Aleph will be

295
00:22:44,759 --> 00:22:42,639
using this device every day now for the

296
00:25:02,880 --> 00:22:44,769
next several days through landing with

297
00:25:09,550 --> 00:25:06,730
this abusing bar for Ellen not just TVC