PORT

1
00:00:07,269 --> 00:00:03,429
station houston onto are you ready for

2
00:00:11,589 --> 00:00:08,470
international space station is

3
00:00:13,669 --> 00:00:11,599
definitely ready for the event

4
00:00:16,150 --> 00:00:13,679
copy that abc nightline this is mission

5
00:00:18,710 --> 00:00:16,160
control houston please call the station

6
00:00:20,790 --> 00:00:18,720
for a voice check

7
00:00:24,070 --> 00:00:20,800
station this is abc nightline how do you

8
00:00:29,429 --> 00:00:25,349
it's a pleasure to talk to you and i

9
00:00:32,950 --> 00:00:31,349
great thank you so much for uh giving us

10
00:00:35,510 --> 00:00:32,960
some time today to talk we really

11
00:00:37,510 --> 00:00:35,520
appreciate it um just wanted to start

12
00:00:39,830 --> 00:00:37,520
off with the space station itself is

13
00:00:41,510 --> 00:00:39,840

kind of like a living laboratory you

14
00:00:43,830 --> 00:00:41,520
know exploring the challenges of

15
00:00:45,830 --> 00:00:43,840
long-term uh space travel and what are

16
00:00:51,029 --> 00:00:45,840
some of the lessons that you have

17
00:00:53,910 --> 00:00:52,389
well i guess the first lesson that i've

18
00:00:55,590 --> 00:00:53,920
already learned for sure is it's pretty

19
00:00:57,110 --> 00:00:55,600
difficult to work when you take away the

20
00:00:58,389 --> 00:00:57,120
one constant you've had your whole life

21
00:01:00,229 --> 00:00:58,399
and that is gravity

22
00:01:02,790 --> 00:01:00,239
uh so just as a human being coming up

23
00:01:04,390 --> 00:01:02,800
here now you're you're working in this

24
00:01:06,070 --> 00:01:04,400
crazy three-dimensional environment

25
00:01:07,750 --> 00:01:06,080
where there are no ceilings floors or

26
00:01:09,350 --> 00:01:07,760
walls everything is a workspace as you

27
00:01:11,109 --> 00:01:09,360
can see in the video

28
00:01:13,510 --> 00:01:11,119
uh behind me and then the other thing

29
00:01:15,270 --> 00:01:13,520
that i i've really learned is uh

30
00:01:17,270 --> 00:01:15,280
we'll never make it to mars we'll never

31
00:01:19,990 --> 00:01:17,280
make it deep into space if we don't have

32
00:01:22,070 --> 00:01:20,000
a really robust life support system and

33
00:01:24,230 --> 00:01:22,080
that that's for the human body and also

34
00:01:25,990 --> 00:01:24,240
for the environment in the space station

35
00:01:30,550 --> 00:01:26,000
and i've gotten to see that first hand

36
00:01:35,749 --> 00:01:32,950
great and i mean what sort of things

37
00:01:39,749 --> 00:01:35,759
happen long term to the human body in

38
00:01:43,030 --> 00:01:41,670

well the biggest thing that the biggest

39
00:01:44,710 --> 00:01:43,040
challenge i guess i could say that we've

40
00:01:46,310 --> 00:01:44,720
had to overcome is what happens to our

41
00:01:48,069 --> 00:01:46,320
muscle and more importantly what happens

42
00:01:50,389 --> 00:01:48,079
to our bone since we're not walking

43
00:01:52,389 --> 00:01:50,399
around every day we're not putting any

44
00:01:55,030 --> 00:01:52,399
sort of impact loads onto our legs we're

45
00:01:57,190 --> 00:01:55,040
not compressing our spine our pelvis so

46
00:01:59,749 --> 00:01:57,200
these bones we really see a almost

47
00:02:02,310 --> 00:01:59,759
osteoporosis-like loss of bone density

48
00:02:04,149 --> 00:02:02,320
when we're on the space station so

49
00:02:05,670 --> 00:02:04,159
through some really great science great

50
00:02:08,389 --> 00:02:05,680
engineering we've developed two main

51
00:02:10,790 --> 00:02:08,399
countermeasures and that is a fantastic

52
00:02:13,110 --> 00:02:10,800
treadmill and the treadmill alone wasn't

53
00:02:15,270 --> 00:02:13,120
really enough so we've also got a

54
00:02:17,670 --> 00:02:15,280
resistance device called a red and on

55
00:02:19,110 --> 00:02:17,680
that we can do really heavyweight squats

56
00:02:20,630 --> 00:02:19,120
deadlifts

57
00:02:22,710 --> 00:02:20,640
bench press shoulder press and that

58
00:02:24,630 --> 00:02:22,720
gives us the kind of spinal compression

59
00:02:26,790 --> 00:02:24,640
full body loading that we need and

60
00:02:28,390 --> 00:02:26,800
astronauts are coming home now in as

61
00:02:31,350 --> 00:02:28,400
good a shape as when they left so that's

62
00:02:32,949 --> 00:02:31,360
a huge development for us

63
00:02:35,110 --> 00:02:32,959

and you guys are up there for a

64
00:02:37,830 --> 00:02:35,120
relatively short term are there any

65
00:02:40,550 --> 00:02:37,840
dangers of you know being up there in

66
00:02:42,710 --> 00:02:40,560
the long term like living up in space

67
00:02:47,910 --> 00:02:42,720
for the rest of your life if the you

68
00:02:50,630 --> 00:02:48,790
well

69
00:02:52,470 --> 00:02:50,640
six months six months a pretty long time

70
00:02:54,309 --> 00:02:52,480
and next year we'll have scott kelly who

71
00:02:55,910 --> 00:02:54,319
will live up here for an entire year and

72
00:02:57,750 --> 00:02:55,920
it'll be really interesting to see what

73
00:03:00,070 --> 00:02:57,760
we learn medically from him when he

74
00:03:03,030 --> 00:03:00,080
comes back uh how's his body adapt over

75
00:03:05,190 --> 00:03:03,040
an entire year i would say uh to live up

76
00:03:06,949 --> 00:03:05,200
here for the rest of my life that would

77
00:03:08,390 --> 00:03:06,959
be pretty excessive uh there's there's

78
00:03:10,710 --> 00:03:08,400
changes in the heart changes in the

79
00:03:13,589 --> 00:03:10,720
blood i can feel changes in my head

80
00:03:14,869 --> 00:03:13,599
eyesight uh so there's a lot of

81
00:03:16,309 --> 00:03:14,879
unanswered questions and i don't think

82
00:03:20,070 --> 00:03:16,319
we're anywhere near sending someone up

83
00:03:25,110 --> 00:03:22,630
part of our story also focuses on some

84
00:03:27,110 --> 00:03:25,120
experiments that are going on here on

85
00:03:28,470 --> 00:03:27,120
earth where people are simulating living

86
00:03:30,789 --> 00:03:28,480
on mars

87
00:03:35,990 --> 00:03:30,799
how can those experiments kind of

88
00:03:39,589 --> 00:03:37,509

well i have a few friends that have

89
00:03:41,430 --> 00:03:39,599
participated in some of these a few

90
00:03:43,830 --> 00:03:41,440
europeans a few american and a couple

91
00:03:46,550 --> 00:03:43,840
russian friends of mine and i think one

92
00:03:48,149 --> 00:03:46,560
of the most commonly known was a 500-day

93
00:03:50,550 --> 00:03:48,159
earth-based mission which simulated

94
00:03:51,990 --> 00:03:50,560
going to mars and on that

95
00:03:53,270 --> 00:03:52,000
well there's a lot you can learn on

96
00:03:55,350 --> 00:03:53,280
earth

97
00:03:57,190 --> 00:03:55,360
first of all how how does a small group

98
00:04:00,149 --> 00:03:57,200
of people get along in a really confined

99
00:04:02,550 --> 00:04:00,159
environment for 500 days

100
00:04:03,910 --> 00:04:02,560
what gets to you over a long term like

101
00:04:06,309 --> 00:04:03,920
food how's the food how's your

102
00:04:07,910 --> 00:04:06,319
relationship how's your medical

103
00:04:09,589 --> 00:04:07,920
do you have the

104
00:04:11,670 --> 00:04:09,599
the maintainability of your hardware to

105
00:04:13,429 --> 00:04:11,680
keep you going for 500 days so i think

106
00:04:15,429 --> 00:04:13,439
all these basic questions can start to

107
00:04:16,949 --> 00:04:15,439
be investigated on earth and then you

108
00:04:18,150 --> 00:04:16,959
take the lessons learned there and apply

109
00:04:20,310 --> 00:04:18,160
them on the space station which we're

110
00:04:22,150 --> 00:04:20,320
doing right now and hopefully we can

111
00:04:24,070 --> 00:04:22,160
answer these these riddles before we set

112
00:04:26,150 --> 00:04:24,080
off on a 500 plus day mission out to

113
00:04:28,790 --> 00:04:26,160

mars

114
00:04:31,510 --> 00:04:28,800
and how does everyone manage in your

115
00:04:37,270 --> 00:04:31,520
tiny uh compact environment you know to

116
00:04:40,710 --> 00:04:38,790
well without going stir crazy it's

117
00:04:42,230 --> 00:04:40,720
pretty easy because we have uh we have

118
00:04:43,590 --> 00:04:42,240
windows that look back on our earth and

119
00:04:46,310 --> 00:04:43,600
it's the most amazing view you could

120
00:04:48,070 --> 00:04:46,320
ever imagine and so any chance we get we

121
00:04:49,830 --> 00:04:48,080
run down there and take a glimpse back

122
00:04:51,590 --> 00:04:49,840
at our home planet and that solves most

123
00:04:53,270 --> 00:04:51,600
of your problems i would also say i'm

124
00:04:55,830 --> 00:04:53,280
one of the luckiest astronauts to have

125
00:04:57,670 --> 00:04:55,840
flown because our six-person crew we

126
00:04:59,510 --> 00:04:57,680
have a german another american and three

127
00:05:00,550 --> 00:04:59,520
russians and we're all super good

128
00:05:01,990 --> 00:05:00,560
friends

129
00:05:03,270 --> 00:05:02,000
every friday night we gather around the

130
00:05:04,870 --> 00:05:03,280
dinner table

131
00:05:07,189 --> 00:05:04,880
we talk about what's going on in our

132
00:05:08,870 --> 00:05:07,199
lives how our families are doing and i

133
00:05:11,189 --> 00:05:08,880
think because of that we have an amazing

134
00:05:15,350 --> 00:05:11,199
cohesion and i would i would go anywhere

135
00:05:20,790 --> 00:05:17,749
so what would you say are you know some

136
00:05:22,870 --> 00:05:20,800
of the things that you miss most and

137
00:05:27,029 --> 00:05:22,880
some of the things you appreciate most

138
00:05:30,870 --> 00:05:28,950

well the things i miss most first of all

139
00:05:33,270 --> 00:05:30,880
definitely family my wife kids my

140
00:05:36,550 --> 00:05:33,280
parents my brother i miss all those

141
00:05:37,909 --> 00:05:36,560
earthly treasures that are human beings

142
00:05:40,629 --> 00:05:37,919
i was thinking the other day i

143
00:05:42,870 --> 00:05:40,639
definitely missed pizza i i really right

144
00:05:44,790 --> 00:05:42,880
now after two months in space i miss

145
00:05:46,790 --> 00:05:44,800
this simple act of just sitting down on

146
00:05:48,230 --> 00:05:46,800
a couch and that relaxing feeling you

147
00:05:49,670 --> 00:05:48,240
get when you sit down

148
00:05:51,029 --> 00:05:49,680
i look around the space station there's

149
00:05:52,550 --> 00:05:51,039
not a chair up here because we just

150
00:05:54,150 --> 00:05:52,560
don't need it you just lift your legs up

151
00:05:56,790 --> 00:05:54,160
and you're sitting

152
00:05:58,790 --> 00:05:56,800
so i missed some of those little things

153
00:06:01,110 --> 00:05:58,800
but there are so many ways to compensate

154
00:06:03,189 --> 00:06:01,120
for that up here in space i just living

155
00:06:04,790 --> 00:06:03,199
without gravity the things you can do

156
00:06:06,870 --> 00:06:04,800
floating around

157
00:06:09,029 --> 00:06:06,880
moving 500 pound objects with your

158
00:06:11,430 --> 00:06:09,039
fingertips and like i already said just

159
00:06:12,950 --> 00:06:11,440
take one glimpse of the earth and uh and

160
00:06:16,309 --> 00:06:12,960
your heart runs kind of crazy it's

161
00:06:18,629 --> 00:06:17,189
great

162
00:06:23,749 --> 00:06:18,639
are there any other moments of

163
00:06:28,309 --> 00:06:26,070

yeah that's a really good question

164
00:06:30,309 --> 00:06:28,319
i have a navy background and i spent

165
00:06:31,590 --> 00:06:30,319
many many well two and a half years of

166
00:06:33,350 --> 00:06:31,600
my life at sea

167
00:06:34,950 --> 00:06:33,360
and i would say there were moments of

168
00:06:37,029 --> 00:06:34,960
loneliness there but up here this is a

169
00:06:38,790 --> 00:06:37,039
pretty small area and although you can

170
00:06:40,469 --> 00:06:38,800
be alone in your little bedroom which is

171
00:06:43,189 --> 00:06:40,479
about the size of a telephone booth

172
00:06:45,189 --> 00:06:43,199
overall i'd say uh we almost seek out

173
00:06:46,830 --> 00:06:45,199
socializing up here so lonely time

174
00:06:48,550 --> 00:06:46,840
really uh doesn't happen

175
00:06:50,390 --> 00:06:48,560
much

176
00:06:56,309 --> 00:06:50,400
what would you think would surprise most

177
00:06:59,990 --> 00:06:58,150
everyone would definitely be surprised

178
00:07:02,390 --> 00:07:00,000
at how crazy it is when you remove

179
00:07:04,469 --> 00:07:02,400
gravity from everyday life it becomes

180
00:07:05,749 --> 00:07:04,479
hard to eat peanuts it's tough to go to

181
00:07:07,909 --> 00:07:05,759
the bathroom

182
00:07:10,309 --> 00:07:07,919
your head fills up with fluid as there's

183
00:07:12,550 --> 00:07:10,319
no gravity to pull it down so your first

184
00:07:14,469 --> 00:07:12,560
week or two on the space station

185
00:07:17,189 --> 00:07:14,479
it's like just running straight into a

186
00:07:19,749 --> 00:07:17,199
brick wall at high speed everything is

187
00:07:20,790 --> 00:07:19,759
is out of sorts you lose tools you lose

188
00:07:22,550 --> 00:07:20,800

food

189
00:07:23,749 --> 00:07:22,560
you go into one module you end up on the

190
00:07:25,510 --> 00:07:23,759
ceiling when you think you're on the

191
00:07:27,029 --> 00:07:25,520
floor and you get lost

192
00:07:28,950 --> 00:07:27,039
it's just simple things when you take

193
00:07:31,110 --> 00:07:28,960
away gravity it changes the way the

194
00:07:34,230 --> 00:07:31,120
human mind works and it took me a good

195
00:07:37,270 --> 00:07:34,240
month to adapt but now i'm there

196
00:07:40,469 --> 00:07:37,280
can you walk me through a typical day on

197
00:07:45,029 --> 00:07:42,710
sure a typical day we work on england

198
00:07:46,790 --> 00:07:45,039
time greenwich mean time and it looks a

199
00:07:48,950 --> 00:07:46,800
lot like a regular earth day i wake up

200
00:07:51,350 --> 00:07:48,960
at around six o'clock brush my teeth

201
00:07:53,110 --> 00:07:51,360
take a quick simulated shower which is

202
00:07:55,270 --> 00:07:53,120
just a wet wet towel but it's good

203
00:07:56,790 --> 00:07:55,280
enough and then we eat we eat breakfast

204
00:07:57,990 --> 00:07:56,800
and then we all gather around for a

205
00:08:00,629 --> 00:07:58,000
meeting with the control centers

206
00:08:02,309 --> 00:08:00,639
throughout the world and that's about a

207
00:08:03,909 --> 00:08:02,319
20-minute evolution and then we jump

208
00:08:05,909 --> 00:08:03,919
right into the workday

209
00:08:08,230 --> 00:08:05,919
it's a mixture between physical activity

210
00:08:10,150 --> 00:08:08,240
to keep our body strong and then science

211
00:08:12,550 --> 00:08:10,160
and you can see around me there's we're

212
00:08:14,950 --> 00:08:12,560
in the u.s laboratory here and we do

213
00:08:17,189 --> 00:08:14,960

about eight hours of science a day

214
00:08:18,710 --> 00:08:17,199
you have a short lunch break

215
00:08:20,390 --> 00:08:18,720
do some more work in the afternoon and

216
00:08:22,150 --> 00:08:20,400
then we all tag you up again at the end

217
00:08:23,430 --> 00:08:22,160
of the day with the control centers and

218
00:08:25,430 --> 00:08:23,440
then they give us about an hour and a

219
00:08:27,510 --> 00:08:25,440
half to two hours before bedtime where

220
00:08:29,589 --> 00:08:27,520
we can just hang out be ourselves talk

221
00:08:30,869 --> 00:08:29,599
to our buddies watch tv if we want and

222
00:08:33,509 --> 00:08:30,879
then it's off to sleep and start up

223
00:08:35,269 --> 00:08:33,519
again the next day

224
00:08:37,350 --> 00:08:35,279
great and one final question you

225
00:08:39,350 --> 00:08:37,360
mentioned that view can you tell me

226
00:08:43,909 --> 00:08:39,360
about that view of looking back on earth

227
00:08:48,230 --> 00:08:45,910
well the first time i got to see it was

228
00:08:50,389 --> 00:08:48,240
about an hour after i launched the sun

229
00:08:52,550 --> 00:08:50,399
came up and the earth came into view

230
00:08:54,150 --> 00:08:52,560
over on my my buddy's side first and i

231
00:08:56,310 --> 00:08:54,160
couldn't see it but all i could

232
00:08:57,990 --> 00:08:56,320
experience was his reaction and i wanted

233
00:08:59,829 --> 00:08:58,000
to unstrap and just climb over there and

234
00:09:02,389 --> 00:08:59,839
look out the window but

235
00:09:04,070 --> 00:09:02,399
about five minutes later our spacecraft

236
00:09:06,550 --> 00:09:04,080
rotated and i was able to look down the

237
00:09:08,230 --> 00:09:06,560
left side back at the planet and the

238
00:09:10,310 --> 00:09:08,240

first thing you see is just all this

239
00:09:13,030 --> 00:09:10,320
blackness of space just black as black

240
00:09:15,430 --> 00:09:13,040
could be and then there's this tiny tiny

241
00:09:18,070 --> 00:09:15,440
band of this crazy light blue and it

242
00:09:21,030 --> 00:09:18,080
runs into our earth and it's the deepest

243
00:09:22,710 --> 00:09:21,040
blue it's so crisp and clear when you

244
00:09:26,630 --> 00:09:22,720
look back on no picture could ever do it

245
00:09:28,310 --> 00:09:26,640
justice and you can't help but just go

246
00:09:30,150 --> 00:09:28,320
it's just amazing to look down on the

247
00:09:31,829 --> 00:09:30,160
earth

248
00:09:34,470 --> 00:09:31,839
commander weissman we really appreciate

249
00:09:35,829 --> 00:09:34,480
your time today thank you so much for

250
00:09:37,829 --> 00:09:35,839
you know giving us all this great

251
00:09:40,070 --> 00:09:37,839
information for our story this great

252
00:09:41,990 --> 00:09:40,080
information for our story absolutely my

253
00:09:46,550 --> 00:09:42,000
pleasure to talk to nightline and uh