



1
00:00:06,389 --> 00:00:04,390
and with us today here in mission

2
00:00:08,629 --> 00:00:06,399
control to talk a little bit about uh

3
00:00:11,110 --> 00:00:08,639
that as well as uh the

4
00:00:13,509 --> 00:00:11,120
intricacies of a soyuz landing is

5
00:00:17,189 --> 00:00:13,519
america's most experienced astronaut

6
00:00:19,349 --> 00:00:17,199
mike fink mike glad to be with you today

7
00:00:21,189 --> 00:00:19,359
rob always uh glad to work with you and

8
00:00:23,109 --> 00:00:21,199
it's a it's a beautiful day when you can

9
00:00:24,870 --> 00:00:23,119
get in to be into the mission control

10
00:00:28,070 --> 00:00:24,880
center here in houston

11
00:00:31,109 --> 00:00:28,080
mike fink a veteran of three flights 382

12
00:00:32,549 --> 00:00:31,119
days in space on his three missions

13
00:00:35,350 --> 00:00:32,559

exceeding

14

00:00:37,590 --> 00:00:35,360

peggy whitson and mike foale behind him

15

00:00:40,229 --> 00:00:37,600

and when he lands on sunday in

16

00:00:42,069 --> 00:00:40,239

kazakhstan don pettit will take up the

17

00:00:44,869 --> 00:00:42,079

number four spot on the all-time list

18

00:00:45,990 --> 00:00:44,879

with an aggregate total of 371 days in

19

00:00:47,910 --> 00:00:46,000

space

20

00:00:51,110 --> 00:00:47,920

gennady padalka was your commander on

21

00:00:52,630 --> 00:00:51,120

expedition 9 several years ago

22

00:00:54,709 --> 00:00:52,640

as he takes over the reins of the

23

00:00:56,790 --> 00:00:54,719

international space station and command

24

00:00:59,910 --> 00:00:56,800

of the complex what is he going to bring

25

00:01:02,389 --> 00:00:59,920

to the table for what's shaping up to be

26

00:01:05,109 --> 00:01:02,399

one of the most complicated four-month

27

00:01:07,429 --> 00:01:05,119

periods in space station history

28

00:01:09,830 --> 00:01:07,439

well rob gennady ivanic

29

00:01:11,910 --> 00:01:09,840

padalka is extremely experienced when i

30

00:01:14,310 --> 00:01:11,920

flew with him he had flown

31

00:01:15,670 --> 00:01:14,320

once on space station mir and that

32

00:01:18,149 --> 00:01:15,680

brings a lot of

33

00:01:19,990 --> 00:01:18,159

historical uh and a depth of knowledge

34

00:01:22,789 --> 00:01:20,000

that he brings to the space station

35

00:01:25,030 --> 00:01:22,799

today and it's funny because gennady and

36

00:01:27,429 --> 00:01:25,040

my paths have crossed along with a lot

37

00:01:30,550 --> 00:01:27,439

of these other guys here so gennady i

38

00:01:32,870 --> 00:01:30,560

and andre uh calpers we flew uh together

39

00:01:35,030 --> 00:01:32,880

uh for uh for ten days till andre came

40

00:01:37,590 --> 00:01:35,040

back uh on uh down to earth and it's so

41

00:01:39,350 --> 00:01:37,600

nice to see gennady and andre up there

42

00:01:41,670 --> 00:01:39,360

along with uh you know my friend oleg

43

00:01:43,749 --> 00:01:41,680

kononenko gennady oleg and i were the

44

00:01:45,109 --> 00:01:43,759

original expedition 9 crew and then

45

00:01:47,109 --> 00:01:45,119

colombia happened and things moved

46

00:01:49,590 --> 00:01:47,119

around but i got to see oleg on

47

00:01:50,550 --> 00:01:49,600

expedition 17 to 18 transition and of

48

00:01:53,510 --> 00:01:50,560

course

49

00:01:55,670 --> 00:01:53,520

don pettit and joe acaba both came up

50

00:01:57,830 --> 00:01:55,680

during my expedition 18 so i know five i

51
00:02:00,630 --> 00:01:57,840
phoned with five of these six guys uh

52
00:02:02,389 --> 00:02:00,640
but about gennady he's uh he's has a

53
00:02:03,830 --> 00:02:02,399
great deal of experience and you're

54
00:02:04,870 --> 00:02:03,840
gonna need a really experienced guy to

55
00:02:06,389 --> 00:02:04,880
take you through

56
00:02:08,229 --> 00:02:06,399
the the tougher times that are ahead and

57
00:02:09,589 --> 00:02:08,239
they're not tough in terms of anything

58
00:02:11,110 --> 00:02:09,599
except complexity we've got a lot of

59
00:02:12,949 --> 00:02:11,120
stuff going on you need to have the crew

60
00:02:14,470 --> 00:02:12,959
to be really

61
00:02:16,229 --> 00:02:14,480
ready to go understanding what's

62
00:02:17,589 --> 00:02:16,239
important what's not so important so

63
00:02:19,910 --> 00:02:17,599

they can be the most efficient and

64

00:02:22,550 --> 00:02:19,920

gennady is the guy to help with that

65

00:02:25,830 --> 00:02:22,560

july and august uh shaping up uh to be

66

00:02:27,990 --> 00:02:25,840

extraordinarily uh busy for this crew uh

67

00:02:30,070 --> 00:02:28,000

the uh expedition 32 crew who will be

68

00:02:33,110 --> 00:02:30,080

joined in a few weeks by suni williams

69

00:02:34,710 --> 00:02:33,120

and aki hoshide and yuri malenchenko

70

00:02:35,830 --> 00:02:34,720

also one of the most experienced space

71

00:02:37,910 --> 00:02:35,840

travelers on the planet there's

72

00:02:39,910 --> 00:02:37,920

something like seven or eight different

73

00:02:41,670 --> 00:02:39,920

visiting vehicle comings and goings

74

00:02:44,070 --> 00:02:41,680

between progress

75

00:02:47,670 --> 00:02:44,080

vehicles for the russian resupply the

76

00:02:50,390 --> 00:02:47,680

japanese konatori 3 the h2 transfer

77

00:02:53,030 --> 00:02:50,400

vehicle and then two evas two spacewalks

78

00:02:55,350 --> 00:02:53,040

in august one by padalka and malenchenko

79

00:02:58,550 --> 00:02:55,360

on august 16th followed two weeks later

80

00:03:00,630 --> 00:02:58,560

by suni williams and aki hoshide in what

81

00:03:02,550 --> 00:03:00,640

we discussed earlier was the change out

82

00:03:04,550 --> 00:03:02,560

of that power switching unit on the

83

00:03:07,190 --> 00:03:04,560

truss of the station but the business at

84

00:03:09,670 --> 00:03:07,200

hand over the next 48 hours is getting

85

00:03:11,589 --> 00:03:09,680

kononenko kuipers and pet at home

86

00:03:14,550 --> 00:03:11,599

so let's start off with what the crew is

87

00:03:16,630 --> 00:03:14,560

going to be doing late saturday night

88

00:03:18,630 --> 00:03:16,640

namely wrapping up their packing of

89

00:03:20,790 --> 00:03:18,640

their soyuz vehicle that is docked to

90

00:03:23,270 --> 00:03:20,800

the earth-facing port of the zarya

91

00:03:25,750 --> 00:03:23,280

module the ross fiat module

92

00:03:27,910 --> 00:03:25,760

as well as the final farewells and the

93

00:03:30,149 --> 00:03:27,920

hatch closure how how complicated is all

94

00:03:32,229 --> 00:03:30,159

of that

95

00:03:34,309 --> 00:03:32,239

in the air force we used to say hurry up

96

00:03:36,309 --> 00:03:34,319

and wait so there's going to be a period

97

00:03:39,110 --> 00:03:36,319

of intense activity where we would get

98

00:03:40,789 --> 00:03:39,120

the last important payloads aboard the

99

00:03:43,430 --> 00:03:40,799

last minute payloads aboard the the

100

00:03:45,589 --> 00:03:43,440

soyuz things like blood samples other

101
00:03:47,670 --> 00:03:45,599
biological samples that way the

102
00:03:49,270 --> 00:03:47,680
scientists on earth can see exactly how

103
00:03:50,550 --> 00:03:49,280
our bodies look like right before we

104
00:03:52,470 --> 00:03:50,560
came back home

105
00:03:54,070 --> 00:03:52,480
um and things that you know don't that

106
00:03:55,589 --> 00:03:54,080
need a lot of refrigeration so you take

107
00:03:57,190 --> 00:03:55,599
them out you put them in the soyuz at

108
00:03:59,110 --> 00:03:57,200
the last minute

109
00:04:01,750 --> 00:03:59,120
things like making sure that you got all

110
00:04:03,589 --> 00:04:01,760
your uh your gear ready to go like your

111
00:04:04,949 --> 00:04:03,599
your spacesuit your underwear that you

112
00:04:06,789 --> 00:04:04,959
wear under the spacesuit things like

113
00:04:08,470 --> 00:04:06,799

that and so you get all that ready to go

114

00:04:09,670 --> 00:04:08,480

you make sure you're ready uh to be on

115

00:04:10,470 --> 00:04:09,680

time because you don't want to be late

116

00:04:12,149 --> 00:04:10,480

because

117

00:04:14,149 --> 00:04:12,159

the soyuz won't wait for you kind of

118

00:04:15,429 --> 00:04:14,159

thing and on the other hand once you

119

00:04:17,670 --> 00:04:15,439

have that all done then you're kind of

120

00:04:19,030 --> 00:04:17,680

waiting and then what do you do well you

121

00:04:21,509 --> 00:04:19,040

kind of look out the window one last

122

00:04:23,670 --> 00:04:21,519

time you maybe if you can if there's a

123

00:04:24,550 --> 00:04:23,680

calm coverage you call your family say

124

00:04:26,870 --> 00:04:24,560

hey

125

00:04:29,189 --> 00:04:26,880

see you guys real soon and it's kind of

126

00:04:31,270 --> 00:04:29,199

a it's kind of a really um strange time

127

00:04:32,950 --> 00:04:31,280

it's just bittersweet you say i want to

128

00:04:34,790 --> 00:04:32,960

go home i can't wait to see everyone

129

00:04:36,070 --> 00:04:34,800

can't wait for that earth food and then

130

00:04:37,430 --> 00:04:36,080

on the other hand it's like man i like

131

00:04:39,749 --> 00:04:37,440

it up here i just was getting good i

132

00:04:42,310 --> 00:04:39,759

don't want to go and so it's a really

133

00:04:43,990 --> 00:04:42,320

interesting bittersweet time again

134

00:04:45,749 --> 00:04:44,000

everything is in contrast you want to

135

00:04:48,070 --> 00:04:45,759

stay you want to go you have to hurry up

136

00:04:50,070 --> 00:04:48,080

but you have to wait

137

00:04:52,310 --> 00:04:50,080

now after uh six and a half months of

138

00:04:54,070 --> 00:04:52,320

the spacious spread of the international

139

00:04:57,030 --> 00:04:54,080

space station uh

140

00:04:59,110 --> 00:04:57,040

kuipers kononenko and pettit uh will uh

141

00:05:01,590 --> 00:04:59,120

be in the cozy confines of their soyuz

142

00:05:03,270 --> 00:05:01,600

spacecraft they'll have to suit up uh is

143

00:05:05,189 --> 00:05:03,280

it a situation where it's every man for

144

00:05:06,629 --> 00:05:05,199

himself or do they help each other get

145

00:05:07,749 --> 00:05:06,639

into their so-called launch and entry

146

00:05:10,390 --> 00:05:07,759

suits

147

00:05:13,350 --> 00:05:10,400

so yeah after we've uh pretty much

148

00:05:15,270 --> 00:05:13,360

shut the hatch between the two modules

149

00:05:17,510 --> 00:05:15,280

in the habitation module kind of one

150

00:05:19,590 --> 00:05:17,520

that looks like a sphere on top

151
00:05:21,990 --> 00:05:19,600
we get dressed and usually there's only

152
00:05:23,909 --> 00:05:22,000
room for about two people so we help

153
00:05:25,670 --> 00:05:23,919
each other get dressed so usually the

154
00:05:27,110 --> 00:05:25,680
commander stays there and helps the the

155
00:05:28,950 --> 00:05:27,120
two flight engineers get dressed and

156
00:05:31,510 --> 00:05:28,960
then one of them stays on and helps uh

157
00:05:33,270 --> 00:05:31,520
helps the the commander get dressed and

158
00:05:34,629 --> 00:05:33,280
it's uh by that this time in their

159
00:05:35,990 --> 00:05:34,639
training this time and everything that

160
00:05:37,909 --> 00:05:36,000
they're really good at getting the

161
00:05:39,990 --> 00:05:37,919
social suit on and off it's pretty easy

162
00:05:41,830 --> 00:05:40,000
to get on and off um definitely helps

163
00:05:42,870 --> 00:05:41,840

when some other person's helping you and

164

00:05:43,990 --> 00:05:42,880

it's just kind of funny because you're

165

00:05:45,909 --> 00:05:44,000

kind of floating in the middle of a

166

00:05:48,150 --> 00:05:45,919

module and you can put your your pants

167

00:05:51,830 --> 00:05:48,160

on so to speak the bottom half two legs

168

00:05:54,629 --> 00:05:51,840

at a time unlike here on planet earth

169

00:05:56,550 --> 00:05:54,639

at 11 48 p.m central time on saturday

170

00:05:59,590 --> 00:05:56,560

night just after midnight eastern time

171

00:06:01,670 --> 00:05:59,600

sunday morning the undocking will occur

172

00:06:03,749 --> 00:06:01,680

uh the physical separation between the

173

00:06:05,990 --> 00:06:03,759

soyuz vehicle and the international

174

00:06:08,150 --> 00:06:06,000

space station

175

00:06:10,710 --> 00:06:08,160

andre kuipers as board engineer will be

176
00:06:12,550 --> 00:06:10,720
in the left seat oleg kononenko is the

177
00:06:13,830 --> 00:06:12,560
soyuz commander don pettit will be in

178
00:06:15,830 --> 00:06:13,840
the right seat

179
00:06:19,350 --> 00:06:15,840
as you back away from this massive

180
00:06:22,230 --> 00:06:19,360
complex the international space station

181
00:06:23,670 --> 00:06:22,240
what strikes you uh after being on board

182
00:06:26,070 --> 00:06:23,680
you're looking back at what has been

183
00:06:28,390 --> 00:06:26,080
your home for about a half a year or so

184
00:06:30,950 --> 00:06:28,400
uh the vista of what you're seeing the

185
00:06:32,309 --> 00:06:30,960
size of this thing what is so striking

186
00:06:35,110 --> 00:06:32,319
about it

187
00:06:37,029 --> 00:06:35,120
well the soyuz has for the the guys

188
00:06:39,270 --> 00:06:37,039

sitting on the on the side so both

189

00:06:40,469 --> 00:06:39,280

flight engineers uh on the left seat and

190

00:06:41,909 --> 00:06:40,479

the right seat

191

00:06:43,110 --> 00:06:41,919

they have windows

192

00:06:44,390 --> 00:06:43,120

and on one hand you say well they're

193

00:06:46,070 --> 00:06:44,400

side looking windows you shouldn't be

194

00:06:48,469 --> 00:06:46,080

able to see the space station

195

00:06:49,830 --> 00:06:48,479

and so at first like on my first mission

196

00:06:51,270 --> 00:06:49,840

when the space station was only half the

197

00:06:53,589 --> 00:06:51,280

size now the only thing you could see

198

00:06:56,070 --> 00:06:53,599

was looking out the the tv screen you're

199

00:06:57,430 --> 00:06:56,080

the monitor right in front of you and uh

200

00:06:59,589 --> 00:06:57,440

and that's the only way you could see

201
00:07:01,990 --> 00:06:59,599
station but now it's so big you can kind

202
00:07:03,830 --> 00:07:02,000
of see it from the side windows and

203
00:07:06,469 --> 00:07:03,840
that's what really goes to our minds as

204
00:07:08,870 --> 00:07:06,479
we pull away it's like wow what a big

205
00:07:10,790 --> 00:07:08,880
space station i was living on what a

206
00:07:12,629 --> 00:07:10,800
great thing that we've built and and how

207
00:07:14,950 --> 00:07:12,639
amazing that it was working just about

208
00:07:16,710 --> 00:07:14,960
all the time you know very few hiccups

209
00:07:18,469 --> 00:07:16,720
along the way and it's just a it's a

210
00:07:20,469 --> 00:07:18,479
very beautiful piece of work it's

211
00:07:22,390 --> 00:07:20,479
aesthetically beautiful it's

212
00:07:24,950 --> 00:07:22,400
a special place because it was home and

213
00:07:26,870 --> 00:07:24,960

it's also just uh it's just uh just

214

00:07:29,990 --> 00:07:26,880

amazing that uh that it could that it

215

00:07:31,909 --> 00:07:30,000

works so well and it's so big it's human

216

00:07:34,790 --> 00:07:31,919

humans humanity is only outpost to the

217

00:07:36,629 --> 00:07:34,800

stars right now it's just amazing

218

00:07:39,430 --> 00:07:36,639

over a two and a half hour period after

219

00:07:41,670 --> 00:07:39,440

undocking the soyuz will drift uh away

220

00:07:43,270 --> 00:07:41,680

to a distance of about 12 kilometers

221

00:07:45,510 --> 00:07:43,280

from the space station in preparation

222

00:07:48,150 --> 00:07:45,520

for the deorbit burn which in this case

223

00:07:50,070 --> 00:07:48,160

will be about 4 minutes and 16 seconds

224

00:07:51,909 --> 00:07:50,080

in duration

225

00:07:53,350 --> 00:07:51,919

you've experienced that twice you've

226

00:07:54,950 --> 00:07:53,360

also been on a space shuttle for a

227

00:07:56,710 --> 00:07:54,960

deorbit burn

228

00:07:59,110 --> 00:07:56,720

which has taken a lot of energy away

229

00:08:00,070 --> 00:07:59,120

from a huge vehicle heading back to

230

00:08:02,150 --> 00:08:00,080

earth

231

00:08:03,990 --> 00:08:02,160

can you compare and contrast what that

232

00:08:06,710 --> 00:08:04,000

feels like is it the same kick in the

233

00:08:08,710 --> 00:08:06,720

pan sensation a breaking sensation

234

00:08:10,790 --> 00:08:08,720

yeah the deorbit burn is

235

00:08:13,110 --> 00:08:10,800

perhaps the most important part of entry

236

00:08:14,710 --> 00:08:13,120

because you're going about 17

237

00:08:17,430 --> 00:08:14,720

500 miles an hour and you're going to

238

00:08:18,670 --> 00:08:17,440

take it down to 17 000 miles an hour on

239

00:08:22,150 --> 00:08:18,680

the soyuz it's

240

00:08:24,070 --> 00:08:22,160

115.2 meters per second slowing down and

241

00:08:26,309 --> 00:08:24,080

that helps you fall into the atmosphere

242

00:08:28,469 --> 00:08:26,319

a lot faster than it does on the shuttle

243

00:08:31,589 --> 00:08:28,479

uh it's definitely a kick in the pants

244

00:08:33,990 --> 00:08:31,599

but i don't remember the the physical

245

00:08:35,909 --> 00:08:34,000

sensation as much as just the intensity

246

00:08:37,509 --> 00:08:35,919

of our watching both on the shuttle and

247

00:08:38,870 --> 00:08:37,519

on the soyuz because it's such an

248

00:08:41,190 --> 00:08:38,880

important burn you don't want your

249

00:08:43,110 --> 00:08:41,200

engines to to fail on you you're ready

250

00:08:44,230 --> 00:08:43,120

for in case they do you have the plan

251
00:08:45,910 --> 00:08:44,240
you have the backup plan you have the

252
00:08:48,070 --> 00:08:45,920
third backup plan because it's so

253
00:08:49,670 --> 00:08:48,080
important and so i just remember you

254
00:08:51,910 --> 00:08:49,680
know those being one of the longest four

255
00:08:53,750 --> 00:08:51,920
minutes on the soyuz and uh for the

256
00:08:55,269 --> 00:08:53,760
shuttle definitely the shuttle slows

257
00:08:57,110 --> 00:08:55,279
down a little bit uh

258
00:08:59,910 --> 00:08:57,120
a little bit slower so we have a more

259
00:09:02,470 --> 00:08:59,920
much more gentle uh entry back in only

260
00:09:05,030 --> 00:09:02,480
1.2 g's kind of maximum whereas the

261
00:09:06,870 --> 00:09:05,040
soyuz gets into six g's as it slows down

262
00:09:10,389 --> 00:09:06,880
really fast in the earth's atmosphere

263
00:09:11,829 --> 00:09:10,399

but the deorbit burns very intense

264

00:09:14,150 --> 00:09:11,839

it's probably worth mentioning at this

265

00:09:16,150 --> 00:09:14,160

point that on thursday a contingent of

266

00:09:17,990 --> 00:09:16,160

nasa support personnel that includes

267

00:09:19,910 --> 00:09:18,000

peggy whitson the chief of the astronaut

268

00:09:22,150 --> 00:09:19,920

office here at the johnson space center

269

00:09:24,630 --> 00:09:22,160

arrived in karaganda kazakhstan and

270

00:09:27,430 --> 00:09:24,640

southeast kazakhstan to join the euros

271

00:09:30,150 --> 00:09:27,440

aviyatsa search and recovery forces as

272

00:09:32,710 --> 00:09:30,160

they are planning for their trips out on

273

00:09:35,670 --> 00:09:32,720

russian mi8 helicopters as part of the

274

00:09:37,910 --> 00:09:35,680

landing support team that will recover

275

00:09:40,150 --> 00:09:37,920

the crew on sunday afternoon kazakhstan

276
00:09:42,630 --> 00:09:40,160
time in the wee hours here on sunday

277
00:09:45,190 --> 00:09:42,640
morning so the deorbit burn is complete

278
00:09:47,750 --> 00:09:45,200
you begin to drop out of orbit uh your

279
00:09:50,070 --> 00:09:47,760
acceleration has decelerated now so

280
00:09:51,990 --> 00:09:50,080
you're captured by

281
00:09:54,710 --> 00:09:52,000
the earth's gravity and begin to drop

282
00:09:57,190 --> 00:09:54,720
back into the earth's atmosphere some 28

283
00:09:59,829 --> 00:09:57,200
minutes after the deorbit burn your

284
00:10:01,750 --> 00:09:59,839
modules are separating

285
00:10:03,670 --> 00:10:01,760
walk us through that pyrotechnic

286
00:10:05,670 --> 00:10:03,680
experience which has got to be something

287
00:10:08,470 --> 00:10:05,680
spectacular

288
00:10:10,550 --> 00:10:08,480

so uh you start to note that uh you know

289

00:10:12,550 --> 00:10:10,560

you're waiting for the first touch of uh

290

00:10:14,870 --> 00:10:12,560

atmosphere and uh

291

00:10:17,350 --> 00:10:14,880

and then then the next big event uh like

292

00:10:19,590 --> 00:10:17,360

you said is the the separation

293

00:10:21,910 --> 00:10:19,600

and separation is the second really big

294

00:10:23,990 --> 00:10:21,920

important thing after deorbit burns

295

00:10:25,750 --> 00:10:24,000

it's a big relief and you start feeling

296

00:10:26,870 --> 00:10:25,760

happy because it's like cool good we

297

00:10:29,269 --> 00:10:26,880

have a good orbit burn we're going to

298

00:10:30,470 --> 00:10:29,279

slow down enough to hit the atmosphere

299

00:10:31,670 --> 00:10:30,480

and then

300

00:10:33,590 --> 00:10:31,680

then the separation you have to have a

301

00:10:35,590 --> 00:10:33,600

good separation we um

302

00:10:37,430 --> 00:10:35,600

um had previous flights where the

303

00:10:40,230 --> 00:10:37,440

separation wasn't quite right and it

304

00:10:42,389 --> 00:10:40,240

made the uh it took the capsule a little

305

00:10:43,829 --> 00:10:42,399

bit off a trajectory the capsule backed

306

00:10:46,069 --> 00:10:43,839

into a a

307

00:10:48,630 --> 00:10:46,079

another mode was kind of a backup mode

308

00:10:50,389 --> 00:10:48,640

and landed safely but we didn't want

309

00:10:51,670 --> 00:10:50,399

that to happen again so everyone always

310

00:10:54,069 --> 00:10:51,680

holds their breath a little bit for

311

00:10:55,829 --> 00:10:54,079

separation separation happens we have

312

00:10:56,790 --> 00:10:55,839

three modules that are together we have

313

00:10:58,550 --> 00:10:56,800

the

314

00:11:01,350 --> 00:10:58,560

orbital living

315

00:11:02,790 --> 00:11:01,360

module up top you have the uh entry or

316

00:11:05,990 --> 00:11:02,800

crew module in the middle and at the

317

00:11:07,750 --> 00:11:06,000

bottom you have the the service module

318

00:11:09,190 --> 00:11:07,760

and we uh we get rid of the service

319

00:11:11,190 --> 00:11:09,200

module we get rid of it because we don't

320

00:11:12,550 --> 00:11:11,200

need its engines or it's oxygen anymore

321

00:11:14,470 --> 00:11:12,560

we get rid of the habitation module

322

00:11:16,550 --> 00:11:14,480

because we've filled it up full of trash

323

00:11:18,389 --> 00:11:16,560

to dispose and then the center module is

324

00:11:19,509 --> 00:11:18,399

only one that remains and once that

325

00:11:21,190 --> 00:11:19,519

happens it's

326

00:11:23,350 --> 00:11:21,200

you don't know anything on board you

327

00:11:24,949 --> 00:11:23,360

hear a few clunks you hear you see a

328

00:11:26,389 --> 00:11:24,959

little flash outside and you don't know

329

00:11:28,150 --> 00:11:26,399

if anything happens you can't see the

330

00:11:30,310 --> 00:11:28,160

modules float away or anything like that

331

00:11:31,990 --> 00:11:30,320

because i've tried uh but you do know on

332

00:11:33,750 --> 00:11:32,000

your on your panel all of a sudden you

333

00:11:35,990 --> 00:11:33,760

know half your electronics kind of go

334

00:11:38,310 --> 00:11:36,000

away because there's no long it's all in

335

00:11:40,150 --> 00:11:38,320

the service module and uh you can't uh

336

00:11:41,590 --> 00:11:40,160

you can't communicate with its computer

337

00:11:43,269 --> 00:11:41,600

you don't have those oxygen tanks that

338

00:11:45,030 --> 00:11:43,279

you can see how much oxygen they have

339

00:11:46,790 --> 00:11:45,040

left or anything so that's one way we

340

00:11:48,790 --> 00:11:46,800

know it's like half the computer screen

341

00:11:50,230 --> 00:11:48,800

goes down or half the parameters that we

342

00:11:52,389 --> 00:11:50,240

look at disappear and they say all right

343

00:11:54,389 --> 00:11:52,399

that's probably a good separation

344

00:11:56,710 --> 00:11:54,399

and then then you wait then you wait to

345

00:12:00,150 --> 00:11:56,720

see to start screaming into the

346

00:12:01,829 --> 00:12:00,160

atmosphere and and lighting up the night

347

00:12:04,150 --> 00:12:01,839

as you light up the night about three

348

00:12:05,990 --> 00:12:04,160

minutes after uh the module separation

349

00:12:08,710 --> 00:12:06,000

you're actually hitting the first traces

350

00:12:11,829 --> 00:12:08,720

of the earth's atmosphere about 400 000

351
00:12:14,790 --> 00:12:11,839
feet above the above the planet um

352
00:12:16,870 --> 00:12:14,800
can you physically discern a tug against

353
00:12:18,470 --> 00:12:16,880
you as the start of g-forces beginning

354
00:12:19,750 --> 00:12:18,480
to build up in those circle launch and

355
00:12:21,590 --> 00:12:19,760
entry suits

356
00:12:23,829 --> 00:12:21,600
well the computers detect it before we

357
00:12:25,430 --> 00:12:23,839
do we have a little acceleration sensors

358
00:12:28,069 --> 00:12:25,440
that feed our computers and so we start

359
00:12:30,710 --> 00:12:28,079
to see a one light that kind of flashes

360
00:12:32,389 --> 00:12:30,720
it flashes um every once every six

361
00:12:34,389 --> 00:12:32,399
seconds uh for

362
00:12:36,790 --> 00:12:34,399
uh let's see how was it six times a

363
00:12:38,470 --> 00:12:36,800

second uh if you have one g so

364

00:12:40,629 --> 00:12:38,480

you have to do some math in your head

365

00:12:41,670 --> 00:12:40,639

but uh it's a old soyuz

366

00:12:43,350 --> 00:12:41,680

way of doing things and that

367

00:12:45,030 --> 00:12:43,360

accelerometer tells you about how many

368

00:12:47,110 --> 00:12:45,040

g's you're pulling and then the computer

369

00:12:48,470 --> 00:12:47,120

screen you know calculates that for you

370

00:12:49,750 --> 00:12:48,480

you can see that light blink and the

371

00:12:51,430 --> 00:12:49,760

first blink everyone's all right now

372

00:12:53,590 --> 00:12:51,440

we're getting close and then things

373

00:12:55,269 --> 00:12:53,600

start to build up relatively quickly and

374

00:12:57,110 --> 00:12:55,279

you start to really tell not by the

375

00:12:59,110 --> 00:12:57,120

feeling in the seat of your pants but

376

00:13:00,710 --> 00:12:59,120

you start to see uh light around you

377

00:13:03,190 --> 00:13:00,720

even if you're in the dark part of the

378

00:13:05,670 --> 00:13:03,200

the planet because you're actually i

379

00:13:08,310 --> 00:13:05,680

know plasmifying burning the atmosphere

380

00:13:09,829 --> 00:13:08,320

uh stripping it of its uh electrons and

381

00:13:12,230 --> 00:13:09,839

it's just uh you're going so fast the

382

00:13:13,990 --> 00:13:12,240

atmosphere is in great shock and so

383

00:13:15,269 --> 00:13:14,000

you're making a big ball of plasma

384

00:13:18,230 --> 00:13:15,279

around you and you can see that right

385

00:13:20,470 --> 00:13:18,240

out your window and it's really hot and

386

00:13:21,910 --> 00:13:20,480

so thank goodness uh the soyuz has a

387

00:13:23,750 --> 00:13:21,920

really nice

388

00:13:25,430 --> 00:13:23,760

heat shield on it the heat shield is

389

00:13:27,110 --> 00:13:25,440

ablative heat shield that means it it

390

00:13:28,870 --> 00:13:27,120

melts away takes takes the heat away

391

00:13:30,629 --> 00:13:28,880

with it and you can actually see pieces

392

00:13:32,550 --> 00:13:30,639

of your spacecraft kind of melt away

393

00:13:33,990 --> 00:13:32,560

around you and it comes out in beautiful

394

00:13:36,069 --> 00:13:34,000

colors red and green so maybe it's kind

395

00:13:39,590 --> 00:13:36,079

of like an early fourth of july for for

396

00:13:41,189 --> 00:13:39,600

don and uh and uh andre and uh oleg they

397

00:13:43,030 --> 00:13:41,199

can see you kind of see little fireworks

398

00:13:44,310 --> 00:13:43,040

outside and it's just amazing when you

399

00:13:45,750 --> 00:13:44,320

look out the window you realize that's

400

00:13:46,829 --> 00:13:45,760

all happening maybe a foot and a half in

401
00:13:50,389 --> 00:13:46,839
front of your

402
00:13:52,310 --> 00:13:50,399
nose one final part of this the e-ticket

403
00:13:55,430 --> 00:13:52,320
yet to come is the deployment of the

404
00:13:57,350 --> 00:13:55,440
parachutes again the e-ticket described

405
00:13:58,310 --> 00:13:57,360
by several astronauts

406
00:14:01,110 --> 00:13:58,320
as

407
00:14:03,030 --> 00:14:01,120
one of the wildest rides of all when the

408
00:14:04,790 --> 00:14:03,040
shoots begin to deploy and you're

409
00:14:06,710 --> 00:14:04,800
cantered and cocked to an angle and then

410
00:14:09,189 --> 00:14:06,720
you rotate around and

411
00:14:11,670 --> 00:14:09,199
walk us through all those types of

412
00:14:13,750 --> 00:14:11,680
gyrations as you settle down under the

413
00:14:14,790 --> 00:14:13,760

shoots for the final few minutes before

414

00:14:17,829 --> 00:14:14,800

touchdown

415

00:14:19,509 --> 00:14:17,839

yeah one reason why this is so uh so

416

00:14:21,110 --> 00:14:19,519

exciting for us is because this is the

417

00:14:22,870 --> 00:14:21,120

third big thing that needs to happen you

418

00:14:24,870 --> 00:14:22,880

have a good de-orbit burn good module

419

00:14:25,990 --> 00:14:24,880

separation and now if parachutes come

420

00:14:27,750 --> 00:14:26,000

out then you know you're going to land

421

00:14:29,910 --> 00:14:27,760

somewhere and you you're going to be

422

00:14:31,430 --> 00:14:29,920

fine because you need the parachute so

423

00:14:33,829 --> 00:14:31,440

it's a big relief when they start to

424

00:14:35,670 --> 00:14:33,839

come out however you know the parachutes

425

00:14:37,750 --> 00:14:35,680

are not at the very top of the vehicle

426

00:14:39,430 --> 00:14:37,760

at this time the parachutes are off to

427

00:14:41,430 --> 00:14:39,440

the side we need the top of the vehicle

428

00:14:42,870 --> 00:14:41,440

for the hatch to get between modules and

429

00:14:44,949 --> 00:14:42,880

things like that

430

00:14:47,590 --> 00:14:44,959

so the the parachute kind of pops off to

431

00:14:50,069 --> 00:14:47,600

the side which kind of spins us around

432

00:14:51,509 --> 00:14:50,079

and then eventually it re-hooks itself

433

00:14:53,670 --> 00:14:51,519

to the top of the module and then we get

434

00:14:56,870 --> 00:14:53,680

nice and nice and calm it's that period

435

00:14:58,710 --> 00:14:56,880

of time where you can imagine being in

436

00:15:00,710 --> 00:14:58,720

weightless environment for you know four

437

00:15:03,030 --> 00:15:00,720

five six months and uh not having any

438

00:15:05,030 --> 00:15:03,040

gravity on you and uh going through you

439

00:15:07,430 --> 00:15:05,040

know four four five six g's as you you

440

00:15:09,189 --> 00:15:07,440

come you you slow down in the atmosphere

441

00:15:11,030 --> 00:15:09,199

and then all of a sudden they start

442

00:15:12,949 --> 00:15:11,040

whipping around like a i guess a dog

443

00:15:15,990 --> 00:15:12,959

with a rag doll or something like that

444

00:15:18,470 --> 00:15:16,000

and uh it's a it's very um disconcerting

445

00:15:20,629 --> 00:15:18,480

at first but it's also very happy time

446

00:15:21,910 --> 00:15:20,639

because um because you know the

447

00:15:24,069 --> 00:15:21,920

parachutes are coming out you need to

448

00:15:26,230 --> 00:15:24,079

have the parachute so i remember gennady

449

00:15:29,509 --> 00:15:26,240

and i when we landed uh on expedition 9

450

00:15:31,829 --> 00:15:29,519

we were whooping it up literally saying

451

00:15:33,829 --> 00:15:31,839

as we were spinning around and uh it

452

00:15:35,670 --> 00:15:33,839

lasts for a little bit some people feel

453

00:15:38,230 --> 00:15:35,680

it lasts a lot longer than it than it

454

00:15:39,509 --> 00:15:38,240

really does because it is very

455

00:15:41,269 --> 00:15:39,519

interesting especially not being in

456

00:15:43,269 --> 00:15:41,279

gravity to be all of a sudden

457

00:15:45,350 --> 00:15:43,279

uh shaking around but when it's all said

458

00:15:47,189 --> 00:15:45,360

and done you're kind of calm the

459

00:15:48,790 --> 00:15:47,199

parachutes have re re-hooked themselves

460

00:15:51,110 --> 00:15:48,800

on top and you're gently floating down

461

00:15:52,470 --> 00:15:51,120

to the to the ground and it's a big sign

462

00:15:54,470 --> 00:15:52,480

of relief because you know i'm coming

463

00:15:57,189 --> 00:15:54,480

home

464

00:15:58,790 --> 00:15:57,199

at this point uh the russian mi8

465

00:16:00,069 --> 00:15:58,800

helicopters and the search and recovery

466

00:16:02,310 --> 00:16:00,079

forces are

467

00:16:05,030 --> 00:16:02,320

circling in a racetrack pattern around

468

00:16:06,550 --> 00:16:05,040

the intended nominal landing zone and

469

00:16:07,990 --> 00:16:06,560

they're just waiting for you guys to

470

00:16:11,269 --> 00:16:08,000

show up

471

00:16:13,350 --> 00:16:11,279

you're in your seats you're reclined on

472

00:16:14,389 --> 00:16:13,360

custom-made soyuz seat liners that have

473

00:16:15,670 --> 00:16:14,399

cushioning

474

00:16:18,150 --> 00:16:15,680

capability

475

00:16:20,550 --> 00:16:18,160

and then in the final seconds literally

476

00:16:23,590 --> 00:16:20,560

the few seconds before touchdown soft

477

00:16:26,550 --> 00:16:23,600

landing engines boom one more one more

478

00:16:29,110 --> 00:16:26,560

opportunity for uh a sensation that is

479

00:16:31,350 --> 00:16:29,120

uh not common so

480

00:16:33,670 --> 00:16:31,360

uh explain to us what happens here with

481

00:16:35,749 --> 00:16:33,680

your seats with the soft landing engine

482

00:16:38,150 --> 00:16:35,759

firing and finally the touchdown

483

00:16:39,910 --> 00:16:38,160

assuming that conditions are calm which

484

00:16:42,069 --> 00:16:39,920

they're expected to be by the way on

485

00:16:43,749 --> 00:16:42,079

sunday at the landing site it's great to

486

00:16:45,990 --> 00:16:43,759

know that the conditions are supposed to

487

00:16:48,470 --> 00:16:46,000

be calm if it gets a little too windy

488

00:16:49,829 --> 00:16:48,480

that makes it just a little more complex

489

00:16:51,670 --> 00:16:49,839

but you know we're we're on our

490

00:16:53,509 --> 00:16:51,680

parachutes things have calmed down and

491

00:16:55,829 --> 00:16:53,519

you're absolutely right the next next

492

00:16:57,269 --> 00:16:55,839

big step is uh the helicopters in fact i

493

00:16:59,350 --> 00:16:57,279

remember you were on some helicopters

494

00:17:01,269 --> 00:16:59,360

for uh watching getting ready for me to

495

00:17:02,550 --> 00:17:01,279

land a couple of times and uh it's

496

00:17:04,150 --> 00:17:02,560

always nice to know your friends are out

497

00:17:06,549 --> 00:17:04,160

there looking for you the search and

498

00:17:07,909 --> 00:17:06,559

rescue crew uh they're some of russia's

499

00:17:10,630 --> 00:17:07,919

finest and that we know that we're in

500

00:17:12,630 --> 00:17:10,640

good hands with them uh for to find us

501
00:17:14,549 --> 00:17:12,640
and uh to get us out of our capsules

502
00:17:16,069 --> 00:17:14,559
correctly and and uh we know you know

503
00:17:17,669 --> 00:17:16,079
most of those guys already we've met him

504
00:17:19,350 --> 00:17:17,679
before so it's it's you know you kind of

505
00:17:20,949 --> 00:17:19,360
know it's going to be met by some

506
00:17:22,870 --> 00:17:20,959
friends so that's exciting so you're on

507
00:17:24,309 --> 00:17:22,880
the you're on the you're listening for

508
00:17:25,669 --> 00:17:24,319
the be able to talk to the the

509
00:17:27,429 --> 00:17:25,679
helicopters

510
00:17:28,950 --> 00:17:27,439
on the radio and it's important to talk

511
00:17:31,270 --> 00:17:28,960
to the helicopters because they give us

512
00:17:32,870 --> 00:17:31,280
one piece of information that's really

513
00:17:34,470 --> 00:17:32,880

important and then they also can watch

514

00:17:37,350 --> 00:17:34,480

us if we're lucky they can tell us what

515

00:17:39,750 --> 00:17:37,360

the local altimeter setting is what the

516

00:17:42,230 --> 00:17:39,760

pressure is on the planet below and that

517

00:17:43,430 --> 00:17:42,240

way we can use our onboard instruments

518

00:17:45,029 --> 00:17:43,440

because we don't really have a radar

519

00:17:46,710 --> 00:17:45,039

altimeter that tells us how far above

520

00:17:48,390 --> 00:17:46,720

the ground we are but we can measure the

521

00:17:50,310 --> 00:17:48,400

pressure outside and compare it to what

522

00:17:52,390 --> 00:17:50,320

it is on the on the surface to tell us

523

00:17:53,830 --> 00:17:52,400

how high above the ground we are most

524

00:17:56,070 --> 00:17:53,840

airplanes have these uh this kind of

525

00:17:57,270 --> 00:17:56,080

capability in addition the commander has

526

00:18:00,310 --> 00:17:57,280

kind of like a

527

00:18:02,710 --> 00:18:00,320

a parachuters watch and so he also can

528

00:18:04,710 --> 00:18:02,720

put in the pressure setting uh from the

529

00:18:06,549 --> 00:18:04,720

ground onto it and he can tell us how

530

00:18:08,150 --> 00:18:06,559

high above the ground we are so between

531

00:18:11,350 --> 00:18:08,160

the computers and the parachute watch we

532

00:18:13,590 --> 00:18:11,360

know about uh how long it is to landing

533

00:18:15,270 --> 00:18:13,600

sometimes we land just right around

534

00:18:17,110 --> 00:18:15,280

sunrise so it's kind of dark outside

535

00:18:18,470 --> 00:18:17,120

sometimes i'm like on my second mission

536

00:18:19,830 --> 00:18:18,480

it's right in the middle of the day and

537

00:18:21,750 --> 00:18:19,840

you can kind of look out and guess how

538

00:18:23,830 --> 00:18:21,760

far above the ground you are but uh

539

00:18:25,110 --> 00:18:23,840

that's uh that's what we're starting to

540

00:18:26,390 --> 00:18:25,120

think about next okay when are we going

541

00:18:28,870 --> 00:18:26,400

to land where are we going to land do

542

00:18:30,710 --> 00:18:28,880

the do the helicopters know where we are

543

00:18:32,710 --> 00:18:30,720

and once that all kind of works together

544

00:18:34,549 --> 00:18:32,720

it's a it's a nice uh

545

00:18:36,630 --> 00:18:34,559

relaxing feeling in fact it's uh we're

546

00:18:38,070 --> 00:18:36,640

floating down to us so slowly compared

547

00:18:40,390 --> 00:18:38,080

to you know how fast we were going

548

00:18:42,070 --> 00:18:40,400

before it's uh it's like well i wonder

549

00:18:43,909 --> 00:18:42,080

if we'll ever get there yeah the last i

550

00:18:46,950 --> 00:18:43,919

guess the last 500 feet are the longest

551
00:18:48,789 --> 00:18:46,960
in terms of time so as we get close to

552
00:18:51,830 --> 00:18:48,799
the ground our seats actually uh

553
00:18:53,590 --> 00:18:51,840
automatically kind of uh uh push up so

554
00:18:55,990 --> 00:18:53,600
all of a sudden whereas uh where maybe

555
00:18:58,150 --> 00:18:56,000
our noses are about a foot uh from the

556
00:19:00,390 --> 00:18:58,160
from the dashboard in front of us the

557
00:19:02,230 --> 00:19:00,400
the uh the cosmonaut panel that the

558
00:19:04,310 --> 00:19:02,240
control panel all of a sudden we're you

559
00:19:06,549 --> 00:19:04,320
know three or four inches away from uh

560
00:19:08,150 --> 00:19:06,559
away from it and that the seats up

561
00:19:08,950 --> 00:19:08,160
so that as soon as we hit the ground

562
00:19:11,590 --> 00:19:08,960
it'll

563
00:19:13,029 --> 00:19:11,600

reduce the force big shock absorber

564

00:19:15,029 --> 00:19:13,039

so we know that you know that's a big

565

00:19:17,430 --> 00:19:15,039

sign that things are going to happen um

566

00:19:20,150 --> 00:19:17,440

and then uh then also right before we

567

00:19:21,830 --> 00:19:20,160

land there are those soft uh

568

00:19:23,270 --> 00:19:21,840

the soft landing engines now the thing

569

00:19:25,510 --> 00:19:23,280

about the soft landing engines this is

570

00:19:27,750 --> 00:19:25,520

my personal experience everybody has a

571

00:19:29,029 --> 00:19:27,760

different experience but soft landing

572

00:19:31,350 --> 00:19:29,039

engines uh

573

00:19:33,029 --> 00:19:31,360

uh i never felt them i never saw them i

574

00:19:34,310 --> 00:19:33,039

know they worked because i saw the

575

00:19:36,470 --> 00:19:34,320

bottom of the spacecraft and you could

576

00:19:38,710 --> 00:19:36,480

see that the engines had fired but they

577

00:19:40,549 --> 00:19:38,720

have a gamma-ray altimeter that one

578

00:19:42,950 --> 00:19:40,559

meter above the ground they they ignite

579

00:19:45,029 --> 00:19:42,960

but we're going down so fast and then it

580

00:19:46,789 --> 00:19:45,039

happens right before we hit that uh

581

00:19:48,710 --> 00:19:46,799

there's a you know that flash of light

582

00:19:50,870 --> 00:19:48,720

and that that deceleration

583

00:19:53,110 --> 00:19:50,880

feels a lot like we just hit the ground

584

00:19:55,110 --> 00:19:53,120

and so sure enough uh you know we hit

585

00:19:56,789 --> 00:19:55,120

the ground it feels pretty hard um like

586

00:19:58,789 --> 00:19:56,799

we hit like if you're in a car going

587

00:20:00,950 --> 00:19:58,799

about 20 miles an hour uh hitting a

588

00:20:02,789 --> 00:20:00,960

hitting a wall or something but it's

589

00:20:04,230 --> 00:20:02,799

amazing the seats really absorb the

590

00:20:06,230 --> 00:20:04,240

impact and

591

00:20:07,590 --> 00:20:06,240

we roll around a little bit and and

592

00:20:09,990 --> 00:20:07,600

there we are and just a few minutes

593

00:20:11,750 --> 00:20:10,000

later on both my uh experiences there

594

00:20:13,909 --> 00:20:11,760

was the rescue crews were there to meet

595

00:20:16,230 --> 00:20:13,919

us and again our friends are out there

596

00:20:18,549 --> 00:20:16,240

for us and we're in good hands

597

00:20:20,549 --> 00:20:18,559

and one characteristic for our viewers

598

00:20:22,149 --> 00:20:20,559

uh to keep in mind is that because of

599

00:20:25,510 --> 00:20:22,159

the altitude of the space station at

600

00:20:27,669 --> 00:20:25,520

about 250 miles and the look angle of

601
00:20:28,630 --> 00:20:27,679
the trajectory of the soyuz during its

602
00:20:31,270 --> 00:20:28,640
entry

603
00:20:32,549 --> 00:20:31,280
there could be likely would be some

604
00:20:34,390 --> 00:20:32,559
periods of blackout in the

605
00:20:37,350 --> 00:20:34,400
communications between

606
00:20:40,149 --> 00:20:37,360
the crew on board the soyuz tma-03m

607
00:20:42,710 --> 00:20:40,159
and what amounts to a couple of flying

608
00:20:44,789 --> 00:20:42,720
command and control aircraft antonov

609
00:20:45,909 --> 00:20:44,799
russian antonov aircraft that would

610
00:20:48,789 --> 00:20:45,919
relay

611
00:20:50,310 --> 00:20:48,799
status reports if you will to the flight

612
00:20:52,390 --> 00:20:50,320
russian flight control team at the

613
00:20:55,990 --> 00:20:52,400

russian mission control center uh in

614

00:20:58,390 --> 00:20:56,000

karl yaff outside of moscow uh

615

00:20:59,190 --> 00:20:58,400

mike is going to pick up his microphone

616

00:21:01,830 --> 00:20:59,200

here

617

00:21:03,750 --> 00:21:01,840

no soft landing engines fired this time

618

00:21:06,549 --> 00:21:03,760

and we'll get mike back in the saddle

619

00:21:10,230 --> 00:21:08,390

once you land

620

00:21:11,190 --> 00:21:10,240

then the helicopters in sequential

621

00:21:13,830 --> 00:21:11,200

fashion

622

00:21:16,630 --> 00:21:13,840

will land in a circular pattern

623

00:21:18,630 --> 00:21:16,640

around the capsule and

624

00:21:21,510 --> 00:21:18,640

it's really only a matter of minutes

625

00:21:24,390 --> 00:21:21,520

before they begin to disposition the

626
00:21:26,630 --> 00:21:24,400
initial extraction of you guys from the

627
00:21:28,950 --> 00:21:26,640
soyuz to put you in reclining chairs and

628
00:21:30,390 --> 00:21:28,960
then bring you into a medical tent so

629
00:21:33,830 --> 00:21:30,400
walk us through a little bit about the

630
00:21:36,310 --> 00:21:33,840
aftermath of landing how do you feel

631
00:21:38,630 --> 00:21:36,320
and the sensations of smelling fresh air

632
00:21:41,029 --> 00:21:38,640
on the earth and all of the earth-bound

633
00:21:43,750 --> 00:21:41,039
smells that you will smell grass and so

634
00:21:47,270 --> 00:21:43,760
forth in those first minutes

635
00:21:48,549 --> 00:21:47,280
so um it's really uh it's a sign of i

636
00:21:50,710 --> 00:21:48,559
don't know for me it was always relief

637
00:21:51,909 --> 00:21:50,720
it's like hey we're back home no and

638
00:21:53,510 --> 00:21:51,919

there's people outside they're going to

639

00:21:56,470 --> 00:21:53,520

take care of things so i can kind of

640

00:21:58,070 --> 00:21:56,480

relax and not not have to worry anymore

641

00:21:59,909 --> 00:21:58,080

and not have to do any duties the

642

00:22:01,830 --> 00:21:59,919

commander has to of course as soon as we

643

00:22:03,270 --> 00:22:01,840

land uh on the parachutes we don't want

644

00:22:05,830 --> 00:22:03,280

the parachutes dragging us around in

645

00:22:08,630 --> 00:22:05,840

case it's windy so the commander hits a

646

00:22:10,390 --> 00:22:08,640

uh parachute release cord and it goes uh

647

00:22:12,149 --> 00:22:10,400

and that parachute becomes released and

648

00:22:14,470 --> 00:22:12,159

then then we just wait for the ground

649

00:22:16,789 --> 00:22:14,480

guys we have the ability on board i

650

00:22:18,230 --> 00:22:16,799

think don pettit needed this on his last

651

00:22:19,830 --> 00:22:18,240

soyuz landing

652

00:22:21,990 --> 00:22:19,840

to be able to climb out ourselves in

653

00:22:23,669 --> 00:22:22,000

case the search and rescue guys are uh

654

00:22:25,750 --> 00:22:23,679

unintentionally delayed

655

00:22:27,510 --> 00:22:25,760

but on the other hand most of the time

656

00:22:30,310 --> 00:22:27,520

not always those guys are there for us

657

00:22:32,230 --> 00:22:30,320

so we just sit and and relax and wait uh

658

00:22:35,029 --> 00:22:32,240

though you can hear them outside and

659

00:22:36,470 --> 00:22:35,039

they start knocking on the on the on the

660

00:22:38,149 --> 00:22:36,480

on the hatch we kind of reach up and

661

00:22:40,470 --> 00:22:38,159

knock back a little bit so they know

662

00:22:42,310 --> 00:22:40,480

we're okay and then what happens is that

663

00:22:43,830 --> 00:22:42,320

they take out the commander first they

664

00:22:45,669 --> 00:22:43,840

open the hatch they have to take out

665

00:22:47,909 --> 00:22:45,679

some payloads that are in the way just

666

00:22:49,270 --> 00:22:47,919

because it's a very narrow hat opening

667

00:22:51,190 --> 00:22:49,280

and they make some room so they take out

668

00:22:53,669 --> 00:22:51,200

a few of the things that we had packed

669

00:22:55,350 --> 00:22:53,679

with us and get that out of the way pull

670

00:22:57,029 --> 00:22:55,360

out the commander first and then usually

671

00:22:59,110 --> 00:22:57,039

we get the right seeder out and then the

672

00:22:59,990 --> 00:22:59,120

left cedar i was left cedar

673

00:23:02,230 --> 00:23:00,000

both

674

00:23:03,990 --> 00:23:02,240

times i landed on the soyuz so i was

675

00:23:05,430 --> 00:23:04,000

always the last guy out i was kind of

676
00:23:07,669 --> 00:23:05,440
felt a little bit proud about that like

677
00:23:10,549 --> 00:23:07,679
hey this is uh the soyuz took us into

678
00:23:12,789 --> 00:23:10,559
space and brought us safely back home

679
00:23:14,789 --> 00:23:12,799
and uh you know good job good job to the

680
00:23:16,549 --> 00:23:14,799
russian engineers good job to our team

681
00:23:18,630 --> 00:23:16,559
to get us back safely and so i was

682
00:23:20,230 --> 00:23:18,640
always you know kind of proud to be the

683
00:23:22,549 --> 00:23:20,240
last guy coming out and then you come

684
00:23:24,549 --> 00:23:22,559
out and it's like light outside um

685
00:23:26,950 --> 00:23:24,559
there's so many people there so i can't

686
00:23:28,470 --> 00:23:26,960
see this many people in months and uh

687
00:23:30,789 --> 00:23:28,480
and uh they're all happy to see you

688
00:23:32,950 --> 00:23:30,799

you're happy to see them it's uh you

689

00:23:35,990 --> 00:23:32,960

smell the the completely beautiful fresh

690

00:23:38,310 --> 00:23:36,000

air in kazakhstan and it's like wow it's

691

00:23:39,669 --> 00:23:38,320

good to be back to to planet earth i

692

00:23:41,350 --> 00:23:39,679

always wanted to get up and walk around

693

00:23:42,950 --> 00:23:41,360

i was so happy to be back in there oh

694

00:23:44,310 --> 00:23:42,960

you can't you know just be careful they

695

00:23:45,750 --> 00:23:44,320

don't want us to fall and break a leg or

696

00:23:47,590 --> 00:23:45,760

anything like that so they carry us and

697

00:23:49,669 --> 00:23:47,600

put us in some seats and take our blood

698

00:23:50,950 --> 00:23:49,679

pressure and make sure we're okay and we

699

00:23:52,789 --> 00:23:50,960

sit there and one of the first things

700

00:23:54,549 --> 00:23:52,799

that happens is there's always someone

701
00:23:56,149 --> 00:23:54,559
there with a telephone they say hey you

702
00:23:57,990 --> 00:23:56,159
want to go call your wife and and

703
00:24:00,230 --> 00:23:58,000
getting a chance to talk to our families

704
00:24:03,190 --> 00:24:00,240
from planet earth saying honey i'm home

705
00:24:05,430 --> 00:24:03,200
it's a is a really good feeling

706
00:24:07,510 --> 00:24:05,440
and once uh the crew has been brought

707
00:24:09,990 --> 00:24:07,520
into this inflatable medical tent at the

708
00:24:11,350 --> 00:24:10,000
landing site to uh get out of their uh

709
00:24:13,190 --> 00:24:11,360
launch and entry suits into more

710
00:24:15,510 --> 00:24:13,200
comfortable clothing each of the crew

711
00:24:17,750 --> 00:24:15,520
members will be flown in

712
00:24:20,390 --> 00:24:17,760
three different helicopters in this case

713
00:24:22,470 --> 00:24:20,400

back to karaganda the staging city for

714

00:24:24,710 --> 00:24:22,480

sunday's landing operations

715

00:24:25,909 --> 00:24:24,720

they'll uh kuipers and pettit will board

716

00:24:28,710 --> 00:24:25,919

a nasa

717

00:24:30,549 --> 00:24:28,720

plane to fly back to houston kononenko

718

00:24:32,470 --> 00:24:30,559

will board a gagarin cosmonaut training

719

00:24:34,630 --> 00:24:32,480

center plane to fly back to tcoloski

720

00:24:38,070 --> 00:24:34,640

airfield outside of star city and a

721

00:24:40,230 --> 00:24:38,080

return and a reunion with his family

722

00:24:42,549 --> 00:24:40,240

back at star city along with other

723

00:24:44,870 --> 00:24:42,559

russian officials mike appreciate it

724

00:24:47,190 --> 00:24:44,880

very much soyuz landing day is always

725

00:24:49,830 --> 00:24:47,200

it's a long day but it's a it's a very

726

00:24:51,830 --> 00:24:49,840

interesting day and a rewarding day

727

00:24:53,909 --> 00:24:51,840

culminating a six and a half month

728

00:24:55,669 --> 00:24:53,919

mission for pettit kuipers and kononenko

729

00:24:57,750 --> 00:24:55,679

the start of a new increment onboard the

730

00:25:00,789 --> 00:24:57,760

international space station it's hard to

731

00:25:02,310 --> 00:25:00,799

believe it's been almost 13 years since

732

00:25:04,950 --> 00:25:02,320

the space station was permanently

733

00:25:06,870 --> 00:25:04,960

occupied with bill shepard and sergey

734

00:25:09,590 --> 00:25:06,880

krikeloff and yuri gzenko and the beat

735

00:25:12,149 --> 00:25:09,600

goes on with an unbroken presence on

736

00:25:13,750 --> 00:25:12,159

board that international outpost thanks

737

00:25:15,750 --> 00:25:13,760

very much for joining us today mike

738

00:25:17,269 --> 00:25:15,760

appreciate it oh thank you rob and it's

739

00:25:18,630 --> 00:25:17,279

a it's a great adventure that we're on

740

00:25:20,549 --> 00:25:18,640

and it's always a pleasure to get a

741

00:25:23,590 --> 00:25:20,559

chance to share it with our our friends

742

00:25:25,830 --> 00:25:23,600

on nasa tv and uh give them the bird's

743

00:25:27,510 --> 00:25:25,840

eye view or the first person view on it

744

00:25:29,110 --> 00:25:27,520

and like you said it's we've been in

745

00:25:31,510 --> 00:25:29,120

doing the space station for a long time

746

00:25:33,029 --> 00:25:31,520

and it's uh it's just amazing what we

747

00:25:34,870 --> 00:25:33,039

what we've accomplished and looking

748

00:25:36,630 --> 00:25:34,880

forward to the future