



1  
00:00:02,030 --> 00:00:03,210  
>> [Background noise]  
Welcome back inside

2  
00:00:03,210 --> 00:00:05,920  
of Mission Control Houston,  
pretty special treat right now

3  
00:00:05,920 --> 00:00:08,960  
if former Exhibition 29  
Commander Mike Fossum with me.

4  
00:00:08,960 --> 00:00:11,110  
Mike, thanks so much for  
joining me here today.

5  
00:00:11,110 --> 00:00:11,610  
>> Hey, you bet.

6  
00:00:11,610 --> 00:00:13,210  
It's great to be back  
in Mission Control.

7  
00:00:13,210 --> 00:00:15,020  
>> Yeah, we always  
love having you on.

8  
00:00:15,020 --> 00:00:17,100  
So we have three more  
astronauts getting ready

9  
00:00:17,100 --> 00:00:18,650  
to launch this Saturday.

10  
00:00:18,650 --> 00:00:20,330  
So why don't you walk  
us through a little bit

11  
00:00:20,330 --> 00:00:22,990

about what they're doing, you know, the week before launch.

12

00:00:22,990 --> 00:00:23,600

>> Oh, you bet.

13

00:00:23,600 --> 00:00:26,170

It's exciting right

now for the --

14

00:00:26,170 --> 00:00:31,490

Yuri Malenchenko the

[inaudible] commander, Suni --

15

00:00:31,490 --> 00:00:34,500

Sunita or Suni Williams

and Aki Hoshide.

16

00:00:34,500 --> 00:00:35,980

They've been in training

17

00:00:35,980 --> 00:00:38,350

for about [background

noise] two and a half years.

18

00:00:38,350 --> 00:00:41,140

And so it's really a neat

time right now as they're --

19

00:00:41,140 --> 00:00:42,280

after all of this training.

20

00:00:42,280 --> 00:00:44,160

They've been training

around the globe, you know,

21

00:00:44,160 --> 00:00:49,150

the United States, Russia,

Japan, Canada, Germany and...

22

00:00:49,150 --> 00:00:49,910

>> All over the place.

23

00:00:49,910 --> 00:00:53,330

>> All over, and have been on  
-- for Suni and Aki they've been

24

00:00:53,330 --> 00:00:55,900

on the road about 50% of  
the time for the last two

25

00:00:55,900 --> 00:00:59,910

and a half years, and all  
those trainings finally coming

26

00:00:59,910 --> 00:01:02,710

together and they've  
been in Kazakhstan

27

00:01:02,710 --> 00:01:06,720

and Baikonur Cosmodrome for  
about a week and a half.

28

00:01:06,720 --> 00:01:09,060

We arrived there two  
weeks before the launch.

29

00:01:09,060 --> 00:01:10,660

And so it's really a --

30

00:01:10,660 --> 00:01:13,300

it's a fascinating time because  
it's [Background noise] very

31

00:01:13,300 --> 00:01:17,120

different and that two  
and a half years is busy

32

00:01:17,120 --> 00:01:22,260

but in ways it feels -- it  
feels like you're just moving

33

00:01:22,260 --> 00:01:23,840  
or you're not really moving.

34

00:01:23,840 --> 00:01:25,020  
You're not getting any closer.

35

00:01:25,020 --> 00:01:26,440  
You're just going  
through the motions,

36

00:01:26,440 --> 00:01:27,900  
you're packing your  
bag, you're going --

37

00:01:27,900 --> 00:01:31,170  
you're doing more training  
and you get closer and closer,

38

00:01:31,170 --> 00:01:34,810  
and at this point though,  
as they're in Baikonur going

39

00:01:34,810 --> 00:01:36,760  
through the fit checks --

40

00:01:36,760 --> 00:01:39,570  
final training and you can  
feel things picking up speed

41

00:01:39,570 --> 00:01:42,290  
and just your life seems  
to be accelerating.

42

00:01:42,290 --> 00:01:42,790  
>> Oh yes.

43

00:01:42,790 --> 00:01:45,750

>> As your -- I think of it as  
like floating on a big long,

44

00:01:45,750 --> 00:01:48,350

lazy river [background chuckle]  
and that river is dropping

45

00:01:48,350 --> 00:01:51,060

into a slight canon now  
and you can feel it.

46

00:01:51,060 --> 00:01:53,960

Everything's a little more  
-- a little more frantic.

47

00:01:53,960 --> 00:01:55,770

A little busier [Background  
noise] and you're going

48

00:01:55,770 --> 00:01:59,280

through some of these things  
for the last time finally

49

00:01:59,280 --> 00:02:02,100

and so your whole world is  
picking up speed and it's going

50

00:02:02,100 --> 00:02:05,090

to continue to accelerate  
for them all the way up to

51

00:02:05,090 --> 00:02:08,170

when they head out to the launch  
pad on Monday, and it's --

52

00:02:08,170 --> 00:02:10,660

there's a lot of  
traditions and stuff too.

53

00:02:10,660 --> 00:02:12,460  
So it's a very exciting time,

54

00:02:12,460 --> 00:02:16,120  
it's a neat thing  
[background noise] and Suni

55

00:02:16,120 --> 00:02:19,370  
and Aki both launched  
on the space shuttle

56

00:02:19,370 --> 00:02:20,820  
for their first flights.

57

00:02:20,820 --> 00:02:24,380  
And so this is very different  
for them to be going --

58

00:02:24,380 --> 00:02:26,010  
through the preparations  
to launch

59

00:02:26,010 --> 00:02:28,830  
on the Russian Soyuz  
Rocket and there's all --

60

00:02:28,830 --> 00:02:30,900  
but the training of  
course is very different,

61

00:02:30,900 --> 00:02:34,780  
as they have gone through  
so many different things.

62

00:02:34,780 --> 00:02:36,860  
When they get to  
Baikonur though,

63

00:02:36,860 --> 00:02:42,210  
part of what they do is actual

fit checks with the real rocket.

64

00:02:42,210 --> 00:02:45,090

We -- the crews don't -- we  
spend a lot of time in trainers

65

00:02:45,090 --> 00:02:48,430

which are actually flown Soyuz  
capsules that have been modified

66

00:02:48,430 --> 00:02:53,840

to make into trainers, but  
not a real -- a real ship.

67

00:02:53,840 --> 00:02:57,780

And so a couple of times during  
these two weeks here they go

68

00:02:57,780 --> 00:03:01,520

into the real ship in  
suits and make sure

69

00:03:01,520 --> 00:03:03,400

that everything is  
where they expect it.

70

00:03:03,400 --> 00:03:05,590

It gives them a chance to  
put a little bit of Velcro

71

00:03:05,590 --> 00:03:09,070

on the walls, to put their  
timers up and things like that.

72

00:03:09,070 --> 00:03:11,400

You become accustomed  
to what it's

73

00:03:11,400 --> 00:03:13,430

like to climb [background

noise] down into the ship

74

00:03:13,430 --> 00:03:14,910  
through the hatches  
up above you.

75

00:03:14,910 --> 00:03:18,250  
It's at the top of the  
capsule that we launch in

76

00:03:18,250 --> 00:03:22,410  
and in the trainers we usually  
come through an add-on hatch.

77

00:03:22,410 --> 00:03:24,000  
It's added to the side.

78

00:03:24,000 --> 00:03:26,530  
And so here you practice  
going, dropping down in there,

79

00:03:26,530 --> 00:03:29,150  
getting into your seat and it's  
really tight as you can see

80

00:03:29,150 --> 00:03:30,580  
from the videos that we have.

81

00:03:30,580 --> 00:03:30,900  
>> Oh yeah.

82

00:03:30,900 --> 00:03:34,230  
>> It's very tight inside  
the Soyuz and the crew is --

83

00:03:34,230 --> 00:03:36,270  
you know, they're not sitting  
in a chair; they're really lying

84

00:03:36,270 --> 00:03:40,490  
on their backs in a seat pan  
that's molded to their bodies

85  
00:03:40,490 --> 00:03:41,420  
to help protect them

86  
00:03:41,420 --> 00:03:44,230  
from landing loads --  
the dynamics of that.

87  
00:03:44,230 --> 00:03:45,610  
>> So really their first chance

88  
00:03:45,610 --> 00:03:47,840  
to get inside the space craft  
that's going to carry them

89  
00:03:47,840 --> 00:03:50,740  
to orbit and that like  
you said two years coming

90  
00:03:50,740 --> 00:03:53,260  
to fruition just this last  
week, moving really quickly.

91  
00:03:53,260 --> 00:03:54,650  
>> Right, that's exactly right.

92  
00:03:54,650 --> 00:03:59,080  
And so it's a very busy  
time, it's exciting and --

93  
00:03:59,080 --> 00:04:01,000  
you know, you go through  
it and you look at it

94  
00:04:01,000 --> 00:04:03,730  
and you just put your hands  
on everything, touch it,

95

00:04:03,730 --> 00:04:05,700

make sure that it's  
where you expect I,

96

00:04:05,700 --> 00:04:07,130

and kind of get comfortable.

97

00:04:07,130 --> 00:04:09,320

And that's a way of -- okay

98

00:04:09,320 --> 00:04:11,560

on launch day then okay  
I've already strapped

99

00:04:11,560 --> 00:04:12,760

in a couple of times.

100

00:04:12,760 --> 00:04:14,970

I've been in here; we're  
ready to rock and roll.

101

00:04:14,970 --> 00:04:15,820

We're ready for it.

102

00:04:15,820 --> 00:04:16,680

>> Ready for the ride.

103

00:04:16,680 --> 00:04:17,770

>> We're ready, yeah.

104

00:04:17,770 --> 00:04:19,960

>> Okay, well aside from  
some of these final tests

105

00:04:19,960 --> 00:04:22,010

and the fit checks and things  
like that I know there are a lot

106

00:04:22,010 --> 00:04:24,210

of ceremonies and different traditions that come

107

00:04:24,210 --> 00:04:26,820

when you're flying on these Russian vehicles.

108

00:04:26,820 --> 00:04:29,010

What are some of the things that they're doing this week?

109

00:04:29,010 --> 00:04:32,340

>> Yeah, some of those traditions are very different

110

00:04:32,340 --> 00:04:34,480

from the American side.

111

00:04:34,480 --> 00:04:37,050

One of the really neat ones is the crew is staying

112

00:04:37,050 --> 00:04:40,660

in a quarantine facility that we stay in Baikonur,

113

00:04:40,660 --> 00:04:43,260

it's called the Cosmonaut Hotel.

114

00:04:43,260 --> 00:04:45,050

It's not a classic hotel.

115

00:04:45,050 --> 00:04:46,720

>> It's not a five-star resort.

116

00:04:46,720 --> 00:04:47,880

>> No, no it's not a five star.

117

00:04:47,880 --> 00:04:49,680

It's definitely a  
government facility.

118

00:04:49,680 --> 00:04:51,580

It's nice, it's no problem.

119

00:04:51,580 --> 00:04:54,320

But out behind there this --

120

00:04:54,320 --> 00:04:58,290

this facility is  
kind of a compound.

121

00:04:58,290 --> 00:05:02,870

I mean it's fenced and guarded  
and stuff to a -- because we --

122

00:05:02,870 --> 00:05:05,340

the crew needs to be in a  
quarantine during that time.

123

00:05:05,340 --> 00:05:05,460

>> Yeah.

124

00:05:05,460 --> 00:05:07,250

>> So nobody comes in  
contact with the crew

125

00:05:07,250 --> 00:05:09,260

that hasn't been  
medically cleared

126

00:05:09,260 --> 00:05:11,660

and we minimize the amount of  
contact because you don't want

127

00:05:11,660 --> 00:05:13,990

to launch just on the

verge of getting sick.

128

00:05:13,990 --> 00:05:14,520

>> Yep.

129

00:05:14,520 --> 00:05:17,410

>> The transition to space is bad enough.

130

00:05:17,410 --> 00:05:20,050

We're not adding a cold or something on top of it too

131

00:05:20,050 --> 00:05:21,470

and sharing it with your crew mates

132

00:05:21,470 --> 00:05:23,110

which everybody would really love.

133

00:05:23,110 --> 00:05:26,870

So you're kind of cooped up in this facility, but out behind it

134

00:05:26,870 --> 00:05:29,670

within the compound walls and you're on the banks

135

00:05:29,670 --> 00:05:34,380

of the Syrdarya River that's a very historic place.

136

00:05:34,380 --> 00:05:35,800

It was actually the border

137

00:05:35,800 --> 00:05:38,800

of Alexandra the Great's domain right there.

138

00:05:38,800 --> 00:05:39,330

>> Wow.

139

00:05:39,330 --> 00:05:42,850

>> And this location is  
also on the Silk Highway

140

00:05:42,850 --> 00:05:45,300

for the ancient trade  
from China to Europe

141

00:05:45,300 --> 00:05:48,510

and so it's a very  
historic kind of location

142

00:05:48,510 --> 00:05:52,470

on a way -- on a post out there.

143

00:05:52,470 --> 00:05:57,680

But behind the cosmonaut hotel  
inside the compound it's called

144

00:05:57,680 --> 00:06:01,080

the Cosmonaut Allay  
or Cosmonaut Way

145

00:06:01,080 --> 00:06:03,710

and there's trees lining this.

146

00:06:03,710 --> 00:06:06,270

The first tree was  
planted by Yuri Gagarin.

147

00:06:06,270 --> 00:06:07,800

>> Oh, so this goes  
all the way back to...

148

00:06:07,800 --> 00:06:10,380

>> This goes all the way

back 50 years and so,

149

00:06:10,380 --> 00:06:12,410

I'm not sure Eerie  
planted it before he flew

150

00:06:12,410 --> 00:06:14,330

but it was pretty close there.

151

00:06:14,330 --> 00:06:17,320

And so each crew before --

152

00:06:17,320 --> 00:06:21,050

if you've not yet flown on a  
Russian rocket then as part

153

00:06:21,050 --> 00:06:23,910

of this final preparation you  
go out and plant your tree,

154

00:06:23,910 --> 00:06:26,890

[Background noise] and it's  
such a cool thing to go out

155

00:06:26,890 --> 00:06:32,550

and walking down these path ways  
here, is a walk through history

156

00:06:32,550 --> 00:06:36,530

as you see the names of the  
famous people from space history

157

00:06:36,530 --> 00:06:40,930

and the Apollo Soyuz crew have  
their names out there too.

158

00:06:40,930 --> 00:06:42,730

They were recognized  
by the Russians

159

00:06:42,730 --> 00:06:43,830

and have trees out there.

160

00:06:43,830 --> 00:06:47,040

And so it's really a cool thing  
to take part in and to go out

161

00:06:47,040 --> 00:06:50,290

and actually plant your tree  
and know that on this --

162

00:06:50,290 --> 00:06:53,260

and this place is on  
the edge of the earth.

163

00:06:53,260 --> 00:06:57,510

It is way out -- out there  
and there's now a tree

164

00:06:57,510 --> 00:07:00,200

with a little sign post  
on it with my name on it.

165

00:07:00,200 --> 00:07:00,390

>> Wow.

166

00:07:00,390 --> 00:07:03,400

>> As just one of these  
people that has stood there

167

00:07:03,400 --> 00:07:04,470

with these other explorers.

168

00:07:04,470 --> 00:07:08,930

And so it's really a -- kind of  
a neat tradition to be a part

169

00:07:08,930 --> 00:07:12,370

of that and [Background noise]

walk through and see the --

170

00:07:12,370 --> 00:07:16,360  
again the Russians and going  
way back to the Soviet days,

171

00:07:16,360 --> 00:07:18,730  
as well as many of the  
Americans now who have flown

172

00:07:18,730 --> 00:07:22,750  
with the Russians and other  
partners from around the globe.

173

00:07:22,750 --> 00:07:25,160  
>> So a place really  
just heaved in tradition.

174

00:07:25,160 --> 00:07:27,880  
What are some of the other  
things that you guys are doing?

175

00:07:27,880 --> 00:07:30,110  
During the weekend I know  
there's a Red Square visit

176

00:07:30,110 --> 00:07:30,950  
at some point.

177

00:07:30,950 --> 00:07:34,710  
>> Yeah a lot of the other  
things the Red Square visit

178

00:07:34,710 --> 00:07:36,420  
and the Kremlin visit  
takes place

179

00:07:36,420 --> 00:07:38,840  
in the Moscow region  
before we leave there.

180

00:07:38,840 --> 00:07:39,490

>> Okay.

181

00:07:39,490 --> 00:07:43,030

>> The crew goes through a final exams which they finish those

182

00:07:43,030 --> 00:07:47,380

up around three and a half to four weeks before launch.

183

00:07:47,380 --> 00:07:49,920

Their big final exams in Russia and then there's a little bit

184

00:07:49,920 --> 00:07:54,140

of down time week and a half or so, where you can finish --

185

00:07:54,140 --> 00:07:56,070

you're done with exams you're doing with training

186

00:07:56,070 --> 00:07:57,790

and you can get your stuff packed up.

187

00:07:57,790 --> 00:07:58,500

>> School's out.

188

00:07:58,500 --> 00:08:00,730

>> School's out, but you can't relax too much.

189

00:08:00,730 --> 00:08:02,100

Kind of get your things packed up.

190

00:08:02,100 --> 00:08:05,100

Take care of all the  
things you need to take care

191

00:08:05,100 --> 00:08:08,850

of before leaving the planet  
for half a year and included

192

00:08:08,850 --> 00:08:12,770

in that is a trip to Red  
Square to lay flowers

193

00:08:12,770 --> 00:08:16,290

on the Kremlin wall to  
recognize the graves of some

194

00:08:16,290 --> 00:08:22,110

of the early explorers like  
Yuri Gagarin and Serge Chaloff

195

00:08:22,110 --> 00:08:25,180

who was the chief rocket  
designer back in the day

196

00:08:25,180 --> 00:08:27,040

and it's a neat part  
of the tradition and --

197

00:08:27,040 --> 00:08:31,060

and as an American, it was  
pretty humbling to be part

198

00:08:31,060 --> 00:08:36,390

of that and to imagine  
because the --

199

00:08:36,390 --> 00:08:39,930

my early memories of seeing  
pictures of Red Square were not

200

00:08:39,930 --> 00:08:41,080  
in a positive light...

201  
00:08:41,080 --> 00:08:41,420  
>> Yeah.

202  
00:08:41,420 --> 00:08:44,590  
>> ...and it was an exotic place  
but it was also a scary place

203  
00:08:44,590 --> 00:08:46,900  
and we were at odds  
with each other.

204  
00:08:46,900 --> 00:08:50,680  
And so, now for me to actually  
be walking on Red Square

205  
00:08:50,680 --> 00:08:52,960  
and to be participating  
in these kinds

206  
00:08:52,960 --> 00:08:56,170  
of ceremonies is very humbling.

207  
00:08:56,170 --> 00:08:58,920  
Hard to -- would  
have been impossible

208  
00:08:58,920 --> 00:09:01,990  
to imagine twenty  
or so years ago.

209  
00:09:01,990 --> 00:09:02,650  
>> Oh yeah.

210  
00:09:02,650 --> 00:09:07,630  
>> But now we're doing those  
kinds of things and now also

211

00:09:07,630 --> 00:09:10,330

in Baikonur we're doing  
their quarantine time here.

212

00:09:10,330 --> 00:09:13,630

I know the crews -- Suni  
especially she's a runner

213

00:09:13,630 --> 00:09:17,110

and I know she's running along  
the banks of the Syrdarya River

214

00:09:17,110 --> 00:09:18,550

out there -- just  
about every day.

215

00:09:18,550 --> 00:09:19,420

>> I think she's training

216

00:09:19,420 --> 00:09:22,410

to do a triathlon [chuckle]  
during her space slide

217

00:09:22,410 --> 00:09:23,130

at some point.

218

00:09:23,130 --> 00:09:26,800

>> Summer Olympics are coming up  
and so I don't think she's going

219

00:09:26,800 --> 00:09:29,980

to run -- do a crazy  
long distance but --

220

00:09:29,980 --> 00:09:33,880

she's definitely athletic and  
for me that was a great thing.

221

00:09:33,880 --> 00:09:35,720

I really loved running there.

222

00:09:35,720 --> 00:09:40,570

With escort we can get out  
and take a jog along the river

223

00:09:40,570 --> 00:09:43,680

and it's a very different place.

224

00:09:43,680 --> 00:09:46,770

You don't -- there were times  
we had to change our route

225

00:09:46,770 --> 00:09:50,150

because there were camels,  
literally camels like,

226

00:09:50,150 --> 00:09:52,150

laying on the trail  
and it's like,

227

00:09:52,150 --> 00:09:53,420

"Okay, don't go too close."

228

00:09:53,420 --> 00:09:56,180

>> You were really out  
on the edge of nowhere

229

00:09:56,180 --> 00:09:56,810

when you're out there.

230

00:09:56,810 --> 00:09:58,450

>> Yeah, it really feels  
like it and that's --

231

00:09:58,450 --> 00:10:00,960

that's kind of a neat  
feeling and for me, you know,

232

00:10:00,960 --> 00:10:03,450

I like to get out and jog  
too, get out in the fresh air

233

00:10:03,450 --> 00:10:05,870

and do a lot of things outside  
and knowing that I was going

234

00:10:05,870 --> 00:10:08,120

to be inside half a year.

235

00:10:08,120 --> 00:10:08,650

>> Yep, yep.

236

00:10:08,650 --> 00:10:10,830

>> I wanted to go out there  
and soak up a little bit of sun

237

00:10:10,830 --> 00:10:13,670

and just to smell the earth  
and that kind of thing.

238

00:10:13,670 --> 00:10:16,640

So I know that they're doing  
those kinds of things too.

239

00:10:16,640 --> 00:10:18,590

They're doing final -- some

240

00:10:18,590 --> 00:10:22,410

of the training they were  
doing yesterday was some

241

00:10:22,410 --> 00:10:23,220

rendezvous training.

242

00:10:23,220 --> 00:10:25,470

So they're practicing  
the manual flying skills

243

00:10:25,470 --> 00:10:27,550

and that's mostly  
Yuri doing the flying

244

00:10:27,550 --> 00:10:31,070

with Suni and Aki assisting.

245

00:10:31,070 --> 00:10:31,230

>> Yeah.

246

00:10:31,230 --> 00:10:33,970

>> And actually Suni is  
practicing doing some other

247

00:10:33,970 --> 00:10:35,240

flying too.

248

00:10:35,240 --> 00:10:40,310

She's able to back him up if  
need be which we don't expect

249

00:10:40,310 --> 00:10:42,760

to happen, but you -- you  
train for those kind of things.

250

00:10:42,760 --> 00:10:46,060

And so they -- they're  
shown here training

251

00:10:46,060 --> 00:10:47,720

on the simulator  
on these controls.

252

00:10:47,720 --> 00:10:50,180

Of course it's not like  
laying on the Soyuz

253

00:10:50,180 --> 00:10:54,010

but those are the actual

controls that they use

254

00:10:54,010 --> 00:10:57,070

on the space craft and  
he's looking at a screen

255

00:10:57,070 --> 00:11:00,610

that shows him an image  
like the image you'll see

256

00:11:00,610 --> 00:11:02,940

through what we call  
the periscope.

257

00:11:02,940 --> 00:11:04,940

There's final procedure  
reviews where you're going

258

00:11:04,940 --> 00:11:08,310

through your final books, your  
main Soyuz instructor who's been

259

00:11:08,310 --> 00:11:11,820

with you a lot especially in  
that last year and he'll go

260

00:11:11,820 --> 00:11:14,490

through and you're going through  
everything you're going to do

261

00:11:14,490 --> 00:11:15,790

and reviewing it one more time

262

00:11:15,790 --> 00:11:17,750

and making sure you  
understand all the details

263

00:11:17,750 --> 00:11:19,610

and you're ready to go.

264

00:11:19,610 --> 00:11:22,510

>> The training really just does not stop until you are strapped

265

00:11:22,510 --> 00:11:24,910

into that space craft ready to go.

266

00:11:24,910 --> 00:11:27,590

Let's touch on that real quick, the difference between launching

267

00:11:27,590 --> 00:11:29,220

on the Soyuz and a shuttle.

268

00:11:29,220 --> 00:11:30,200

Different sensations?

269

00:11:30,200 --> 00:11:31,760

>> Oh yeah, it's very different.

270

00:11:31,760 --> 00:11:33,660

For me the first time I saw the [inaudible] Soyuz

271

00:11:33,660 --> 00:11:37,140

because we'd never seen it, was when I was there

272

00:11:37,140 --> 00:11:40,250

as a back crew member for Katy Colman [Background noise]

273

00:11:40,250 --> 00:11:46,220

and the -- "Wow that's it."

274

00:11:46,220 --> 00:11:48,960

[Laughter] I'm used to the signs of a shuttle

275

00:11:48,960 --> 00:11:50,600  
which is what the external tank

276

00:11:50,600 --> 00:11:52,140  
and solid rock boosters  
and everything.

277

00:11:52,140 --> 00:11:53,840  
It's a really massive a --

278

00:11:53,840 --> 00:11:57,010  
massive rocket and the  
Soyuz is not a big truck.

279

00:11:57,010 --> 00:12:00,340  
It's very efficient at  
delivering people though.

280

00:12:00,340 --> 00:12:03,470  
So it hauls people and a couple  
of hundred pounds of supplies

281

00:12:03,470 --> 00:12:07,500  
and it's very efficient at that  
but it's a lot smaller vehicle

282

00:12:07,500 --> 00:12:11,720  
to -- what it's like  
out there though --

283

00:12:11,720 --> 00:12:13,870  
there's a little  
bit of difference.

284

00:12:13,870 --> 00:12:17,090  
One thing that we'll see on  
Saturday [Background noise]

285

00:12:17,090 --> 00:12:22,200  
as the crew is going out to  
their launch is they'll go

286  
00:12:22,200 --> 00:12:25,030  
through a full suit up and a  
pressure check of their suits

287  
00:12:25,030 --> 00:12:28,680  
and where in the American  
program for shuttle flights

288  
00:12:28,680 --> 00:12:30,110  
that was all done in a suit room

289  
00:12:30,110 --> 00:12:32,380  
with just the technicians  
and stuff.

290  
00:12:32,380 --> 00:12:32,470  
>> Yeah.

291  
00:12:32,470 --> 00:12:35,020  
>> And then you do a final  
walkout and a wave to the crowd

292  
00:12:35,020 --> 00:12:39,450  
and get in the bus and go to  
the pad, and in Kazakhstan

293  
00:12:39,450 --> 00:12:42,420  
and in the Baikonur Cosmodrome,  
we're doing that with the press

294  
00:12:42,420 --> 00:12:43,780  
on the other side of glass.

295  
00:12:43,780 --> 00:12:44,360  
>> Oh wow.

296

00:12:44,360 --> 00:12:47,840

>> And our families and usually  
some of our guest that come

297

00:12:47,840 --> 00:12:49,720

over are allowed  
to watch this too.

298

00:12:49,720 --> 00:12:52,040

So it's really strange  
thing to have all

299

00:12:52,040 --> 00:12:54,260

of these people watching and  
observing as you're going

300

00:12:54,260 --> 00:12:56,820

through a real pressure  
check of the suit.

301

00:12:56,820 --> 00:13:00,490

The backup crew will be standing  
right behind them, they're ready

302

00:13:00,490 --> 00:13:04,210

to take their place if need be.

303

00:13:04,210 --> 00:13:08,870

And so, you know, you go through  
that and then they'll walk

304

00:13:08,870 --> 00:13:12,830

out of that building and they'll  
actually salute into the head

305

00:13:12,830 --> 00:13:15,810

of the Russian Space Agency  
or the space program depending

306

00:13:15,810 --> 00:13:18,740  
on who the highest ranking  
person there might be

307  
00:13:18,740 --> 00:13:20,220  
and the crew goes  
out and reports in.

308  
00:13:20,220 --> 00:13:22,950  
And this is the iconic image  
that we've seen, you know,

309  
00:13:22,950 --> 00:13:26,140  
in history and in all our lives  
what it's like for the Russians

310  
00:13:26,140 --> 00:13:29,940  
to walk out and salute in like  
that and then get in on the bus

311  
00:13:29,940 --> 00:13:33,610  
and go for a fairly short ride  
-- you know, to the launch pad.

312  
00:13:33,610 --> 00:13:36,210  
Another thing that  
surprised me about going

313  
00:13:36,210 --> 00:13:37,900  
out to the launch pad  
was just the number

314  
00:13:37,900 --> 00:13:40,560  
of people that were out there.

315  
00:13:40,560 --> 00:13:44,170  
There were quite a few people  
out there to document it

316  
00:13:44,170 --> 00:13:47,950

and a lot of the managers  
take you all the way

317  
00:13:47,950 --> 00:13:53,510  
out to the rocket itself and,  
you know, shake your hand

318  
00:13:53,510 --> 00:13:56,890  
and wave goodbye as you get  
on the elevator and head

319  
00:13:56,890 --> 00:13:58,420  
up to climb into the rocket.

320  
00:13:58,420 --> 00:13:59,820  
So I was a little surprised

321  
00:13:59,820 --> 00:14:01,910  
at how many people  
are actually involved

322  
00:14:01,910 --> 00:14:03,780  
and finally you get  
on the elevator.

323  
00:14:03,780 --> 00:14:07,520  
It's a really tiny elevator  
[chuckle] and go up to the top.

324  
00:14:07,520 --> 00:14:10,270  
And it's like, "Okay, now  
we're alone it's just us

325  
00:14:10,270 --> 00:14:12,960  
and a very small crew  
that's helping us strap in

326  
00:14:12,960 --> 00:14:15,390  
and secure the hatches  
behind us.

327

00:14:15,390 --> 00:14:18,770

As you drop in kind  
of a side hatch

328

00:14:18,770 --> 00:14:21,640

in the very top part there's  
two pieces to the Soyuz

329

00:14:21,640 --> 00:14:25,180

that we can get into the main  
capsule that we ride up and down

330

00:14:25,180 --> 00:14:26,980

in is kind of in the  
middle of the stack.

331

00:14:26,980 --> 00:14:27,610

>> Yeah.

332

00:14:27,610 --> 00:14:30,760

>> The orbit module up above  
has a side hatch that we go

333

00:14:30,760 --> 00:14:34,240

through there into that small  
volume and it's about a total

334

00:14:34,240 --> 00:14:39,410

of six cubic meters and  
then we drop down into the,

335

00:14:39,410 --> 00:14:43,790

descent module I call it and --  
so we have the orbit module it's

336

00:14:43,790 --> 00:14:46,810

at the very top and we come  
through a side hatch in that,

337

00:14:46,810 --> 00:14:51,120  
and then we drop down through  
a hatch into the middle part.

338

00:14:51,120 --> 00:14:54,350  
Kind of a gum drop  
shape descent module

339

00:14:54,350 --> 00:14:56,990  
and all three crew members  
are in the descent module

340

00:14:56,990 --> 00:15:00,090  
and you take turns, the two  
guys on the outside, you know,

341

00:15:00,090 --> 00:15:03,430  
getting strapped in and there's  
a lot of hoses and connectors

342

00:15:03,430 --> 00:15:06,990  
to have oxygen line and  
ventilation line, communication

343

00:15:06,990 --> 00:15:11,640  
and a bio medical so the doctors  
are actually monitoring heart

344

00:15:11,640 --> 00:15:16,600  
rate, some basic parameters and  
you do that you start strapping

345

00:15:16,600 --> 00:15:18,540  
in a little over -- about two

346

00:15:18,540 --> 00:15:20,400  
and a half hours  
prior to launch.

347

00:15:20,400 --> 00:15:23,950

>> Okay like I said  
you're not sitting up,

348

00:15:23,950 --> 00:15:25,290

you're down on your back.

349

00:15:25,290 --> 00:15:25,970

>> You're on your back.

350

00:15:25,970 --> 00:15:28,740

>> You're almost kind  
of tuned in there.

351

00:15:28,740 --> 00:15:32,220

>> Yeah, he seat itself  
it's a big metal pan

352

00:15:32,220 --> 00:15:35,750

that from your bottom up  
to the top of your head

353

00:15:35,750 --> 00:15:39,570

and your knees are  
up and actually held

354

00:15:39,570 --> 00:15:41,530

by straps up into position.

355

00:15:41,530 --> 00:15:45,250

And there's the seat right  
there and you see the liner

356

00:15:45,250 --> 00:15:47,750

around it is actually  
form-fitted.

357

00:15:47,750 --> 00:15:50,440

These are just training unit  
we see here but the ones

358

00:15:50,440 --> 00:15:52,420  
for flight are form-fitted  
to your body.

359

00:15:52,420 --> 00:15:55,520  
They actually pour a mold  
over your body and build it.

360

00:15:55,520 --> 00:15:57,510  
So it's like a Jell-O  
mold that's holding your

361

00:15:57,510 --> 00:15:59,200  
body perfectly.

362

00:15:59,200 --> 00:16:02,880  
And so at this point  
pre-launch you're getting in

363

00:16:02,880 --> 00:16:06,200  
and you just -- you just  
-- you fit in that thing.

364

00:16:06,200 --> 00:16:10,510  
You don't just -- [noise and  
chuckling] and a there's no --

365

00:16:10,510 --> 00:16:13,060  
the downside is there's  
very little room

366

00:16:13,060 --> 00:16:14,930  
to move around by intent.

367

00:16:14,930 --> 00:16:15,280  
>> Yeah.

368

00:16:15,280 --> 00:16:17,210

>> It's designed so  
it's really tight.

369  
00:16:17,210 --> 00:16:18,540  
You go through the  
system checks.

370  
00:16:18,540 --> 00:16:21,060  
You check all the parameters,  
you check that the handles

371  
00:16:21,060 --> 00:16:25,960  
and everything nothing bumped  
in the process of getting in.

372  
00:16:25,960 --> 00:16:28,810  
You have flight procedures  
that you're looking

373  
00:16:28,810 --> 00:16:30,680  
at strapping those down

374  
00:16:30,680 --> 00:16:33,240  
and making sure you've  
got the right pages kind

375  
00:16:33,240 --> 00:16:35,350  
of earmarked there,  
little tabs on them

376  
00:16:35,350 --> 00:16:40,210  
so you can find important  
things and to through.

377  
00:16:40,210 --> 00:16:43,930  
And then as the close-out crew  
is closing hatches behind you

378  
00:16:43,930 --> 00:16:47,040  
or activating the systems

inside the space craft --

379

00:16:47,040 --> 00:16:50,180  
make sure ventilation radios  
all this carbonate oxide removal

380

00:16:50,180 --> 00:16:52,510  
system is working  
and stuff like that

381

00:16:52,510 --> 00:16:56,340  
and the close-out crew  
is backing their way out.

382

00:16:56,340 --> 00:17:00,380  
And the hatch at the top here  
is the one that we will not open

383

00:17:00,380 --> 00:17:02,710  
until after we've  
attached to the station.

384

00:17:02,710 --> 00:17:07,310  
It's a great video of the  
inside of the orbit module.

385

00:17:07,310 --> 00:17:08,540  
There's a little  
more room in here

386

00:17:08,540 --> 00:17:11,330  
that the silver container  
has a --

387

00:17:11,330 --> 00:17:14,340  
has a few days' worth  
of food and stuff.

388

00:17:14,340 --> 00:17:16,380  
This looks like there's a

lot of room in the capsule

389

00:17:16,380 --> 00:17:18,220

but there's really not --

390

00:17:18,220 --> 00:17:21,810

that little shelf area

there is covered --

391

00:17:21,810 --> 00:17:24,040

filled up with supplies

that are all tied down.

392

00:17:24,040 --> 00:17:24,440

>> Oh, okay.

393

00:17:24,440 --> 00:17:27,700

>> That was a little surprise

when you get into the real one.

394

00:17:27,700 --> 00:17:30,100

But anyway you get

strapped in about two

395

00:17:30,100 --> 00:17:30,930

and a half hours prior.

396

00:17:30,930 --> 00:17:32,690

You go through the

system checks and stuff

397

00:17:32,690 --> 00:17:37,760

and then there's extra time

added in to the scheduling

398

00:17:37,760 --> 00:17:40,780

in case something

needs to be repaired,

399

00:17:40,780 --> 00:17:43,230  
a communication line's not  
working or something like that.

400  
00:17:43,230 --> 00:17:43,440  
>> Yep.

401  
00:17:43,440 --> 00:17:45,050  
>> So they leave a little  
bit of time and every once

402  
00:17:45,050 --> 00:17:47,950  
in a while something  
comes up and you need it.

403  
00:17:47,950 --> 00:17:49,570  
So it's a good thing to do.

404  
00:17:49,570 --> 00:17:52,320  
Ours went perfectly  
fine, so we had time

405  
00:17:52,320 --> 00:17:54,690  
to just sit there kind  
of talk a little bit.

406  
00:17:54,690 --> 00:17:56,540  
The ground is talking to us

407  
00:17:56,540 --> 00:17:58,390  
and you spend a little  
quiet time too kind

408  
00:17:58,390 --> 00:18:01,590  
of heading the game and  
looking at the procedures again,

409  
00:18:01,590 --> 00:18:02,710  
going through it one more time.

410

00:18:02,710 --> 00:18:06,710

Thinking, okay this is going to  
happen this is going to happen

411

00:18:06,710 --> 00:18:11,880

and making sure I can touch my  
controls that I was responsible

412

00:18:11,880 --> 00:18:13,730

for -- that kind of stuff.

413

00:18:13,730 --> 00:18:16,160

When it's going really  
well, they have time

414

00:18:16,160 --> 00:18:17,220

to play a little music...

415

00:18:17,220 --> 00:18:17,510

>[Inaudible].

416

00:18:17,510 --> 00:18:18,720

>> ...that's it.

417

00:18:18,720 --> 00:18:22,390

Kind of a neat tradition  
that the Russians have.

418

00:18:22,390 --> 00:18:25,120

They actually pump  
some crew choice music

419

00:18:25,120 --> 00:18:28,020

out to the launch pad  
as just a way of kind

420

00:18:28,020 --> 00:18:29,470

of helping the crew  
relax a little bit.

421

00:18:29,470 --> 00:18:31,400

>> Do they take requests  
before you guys hop out?

422

00:18:31,400 --> 00:18:34,710

>> They do take requests,  
that's right [chuckle].

423

00:18:34,710 --> 00:18:38,840

>> Well that's an  
amazingly in depth.

424

00:18:38,840 --> 00:18:42,370

So we know our next three  
crew members are going

425

00:18:42,370 --> 00:18:44,210

to be looking forward  
to doing that.

426

00:18:44,210 --> 00:18:47,250

They have all their ceremonies  
this week, steeped in tradition,

427

00:18:47,250 --> 00:18:48,870

it sounds like an amazing place.

428

00:18:48,870 --> 00:18:51,670

>> Oh yeah I missed some  
of them for the walk out.

429

00:18:51,670 --> 00:18:54,660

The crew is staying in  
this quarantined facility

430

00:18:54,660 --> 00:18:58,330

and when it's actually  
time to walk

431

00:18:58,330 --> 00:19:00,380

out they sign the  
door to their rooms...

432

00:19:00,380 --> 00:19:00,710

>> Oh.

433

00:19:00,710 --> 00:19:03,080

>> ...and so we'll  
see that Saturday.

434

00:19:03,080 --> 00:19:05,380

There's a door signing ceremony.

435

00:19:05,380 --> 00:19:08,060

So everybody gets to sign  
the door to their room

436

00:19:08,060 --> 00:19:09,860

and then these doors  
are getting.

437

00:19:09,860 --> 00:19:12,620

When they fill up I guess they  
remove the doors to a museum

438

00:19:12,620 --> 00:19:16,160

and they get start -- the next  
crew starts with a fresh door.

439

00:19:16,160 --> 00:19:17,150

>> Are they getting full yet?

440

00:19:19,130 --> 00:19:18,060

>> They're getting there.

441

00:19:19,130 --> 00:19:21,410

>> Yeah, and then you walk out

442

00:19:21,410 --> 00:19:27,020

and they'll be a Russian  
Orthodox priest will bless

443

00:19:27,020 --> 00:19:28,270

the crew.

444

00:19:28,270 --> 00:19:29,210

>> Okay.

445

00:19:29,210 --> 00:19:32,300

>> And then that's part  
of their tradition there.

446

00:19:32,300 --> 00:19:36,510

It involves kind of a liberal  
application of holy water

447

00:19:36,510 --> 00:19:39,520

which is always a little bit  
amusing to watch the crew

448

00:19:39,520 --> 00:19:41,470

as they get slightly drenched.

449

00:19:41,470 --> 00:19:46,230

[Chuckle] And from there,  
its walk out to the --

450

00:19:46,230 --> 00:19:48,840

there's a large crowd  
of people there...

451

00:19:48,840 --> 00:19:49,320

>> Yeah.

452

00:19:49,320 --> 00:19:51,820

>> ...waving and as  
the crew heads out.

453

00:19:51,820 --> 00:19:53,490

So it's all part  
of the tradition

454

00:19:53,490 --> 00:19:55,880

so we're living up to it.

455

00:19:55,880 --> 00:19:58,170

And once you get, you  
know, into the rocket

456

00:19:58,170 --> 00:20:01,500

and it's finally go  
time, the big difference

457

00:20:01,500 --> 00:20:05,340

from a shuttle flight  
was how quiet it is.

458

00:20:05,340 --> 00:20:07,700

On a space shuttle a  
lot of the dynamics were

459

00:20:07,700 --> 00:20:12,410

from the solid rocket boosters  
that burn with a lot of popping

460

00:20:12,410 --> 00:20:14,600

and crackling and the people  
that were fortunate enough

461

00:20:14,600 --> 00:20:17,140

to see one in person you  
could actually feel that.

462

00:20:17,140 --> 00:20:19,320

>> I remember it just  
hits you like a weight

463

00:20:19,320 --> 00:20:21,200

when the sound wave gets to you.

464

00:20:21,200 --> 00:20:25,240

>> Yeah exactly, and it -- it  
kind a -- you know, pounds on,

465

00:20:25,240 --> 00:20:28,620

you can feel it and  
you can feel that --

466

00:20:28,620 --> 00:20:32,250

those dynamics coming up  
through the shuttle stack

467

00:20:32,250 --> 00:20:36,120

and it actually makes it,  
you know, a little hard

468

00:20:36,120 --> 00:20:37,660

to read the displays  
and controls

469

00:20:37,660 --> 00:20:41,150

because everything's moving  
for the first two minutes.

470

00:20:41,150 --> 00:20:42,920

For the Soyuz it's real quiet.

471

00:20:42,920 --> 00:20:45,700

It starts off and it's a  
little disconcerting to people

472

00:20:45,700 --> 00:20:46,970

that are used to  
watching the shuttle

473

00:20:46,970 --> 00:20:49,720

because the main engines  
come up and a few seconds

474

00:20:49,720 --> 00:20:51,500  
of checking and then boom.

475

00:20:51,500 --> 00:20:54,610  
The Soyuz' light and  
you leap off the pad.

476

00:20:54,610 --> 00:20:57,060  
Soyuz moves off the  
pad more slowly

477

00:20:57,060 --> 00:20:58,370  
and the engines are running --

478

00:20:58,370 --> 00:21:02,490  
it's about eight seconds  
before it starts to move

479

00:21:02,490 --> 00:21:05,220  
and so it seems -- like  
is everything okay?

480

00:21:05,220 --> 00:21:05,850  
>> Is it going?

481

00:21:05,850 --> 00:21:06,910  
Is it really going?

482

00:21:06,910 --> 00:21:09,090  
>> Yep. And -- it's kind of neat

483

00:21:09,090 --> 00:21:12,340  
because the way the launch pad  
works is the rocket it's not

484

00:21:12,340 --> 00:21:14,680

really bolted down the  
way we would bolt --

485

00:21:14,680 --> 00:21:16,380  
traditionally bolted ours down.

486

00:21:16,380 --> 00:21:19,250  
It's held down by the weight.

487

00:21:19,250 --> 00:21:23,860  
There's these big pads that are  
literally push-holding the side

488

00:21:23,860 --> 00:21:26,420  
of the rocket and the way that  
the rocket pushes them down

489

00:21:26,420 --> 00:21:28,430  
and creates the friction  
that holds it in place.

490

00:21:28,430 --> 00:21:32,150  
So the rocket is suspended  
there and once the rocket starts

491

00:21:32,150 --> 00:21:39,050  
to lift off it releases this  
and it releases the arms

492

00:21:39,050 --> 00:21:41,440  
which just spring  
out of the way then.

493

00:21:41,440 --> 00:21:47,610  
And so it's a very  
odd looking thing.

494

00:21:47,610 --> 00:21:51,090  
As they -- the first arms that  
are coming back that's just some

495

00:21:51,090 --> 00:21:52,030  
of the support stuff

496

00:21:52,030 --> 00:21:55,000  
that includes elevator  
and everything.

497

00:21:55,000 --> 00:21:58,910  
At this point the rockets is  
just held in place by these --

498

00:21:58,910 --> 00:22:02,830  
by these smaller arms that  
are literally just held there

499

00:22:02,830 --> 00:22:05,790  
by the weight of the rocket  
itself and you see those

500

00:22:05,790 --> 00:22:08,900  
down around the base as  
the rocket comes to life

501

00:22:08,900 --> 00:22:11,750  
and it starts to light up.

502

00:22:11,750 --> 00:22:16,550  
It's about eight seconds and  
it's a little slow motion here

503

00:22:16,550 --> 00:22:21,700  
but it's -- and just watch as  
the rocket starts to lift off

504

00:22:21,700 --> 00:22:23,250  
and then those are released.

505

00:22:23,250 --> 00:22:24,940

Now they're not bolted  
on it's just held there

506  
00:22:24,940 --> 00:22:28,330  
by just the mechanics  
of the weight.

507  
00:22:28,330 --> 00:22:30,730  
The ride's smooth.

508  
00:22:30,730 --> 00:22:33,530  
There are very little  
vibration in it,

509  
00:22:33,530 --> 00:22:36,360  
very little really sensation  
of sound or anything.

510  
00:22:36,360 --> 00:22:38,170  
I mean you are inside  
the capsule...

511  
00:22:38,170 --> 00:22:38,240  
>> Yeah.

512  
00:22:38,240 --> 00:22:41,640  
>> ...inside the comet and  
everything but after the --

513  
00:22:41,640 --> 00:22:48,620  
in about a minute and a half or  
so the escape rocket fires off,

514  
00:22:48,620 --> 00:22:53,410  
the Soyuz have some strap-on  
boosters, four boosters

515  
00:22:53,410 --> 00:22:57,050  
that around the base to help  
get moving, get off the pad

516

00:22:57,050 --> 00:22:59,420  
and start to clear  
the atmosphere too.

517

00:22:59,420 --> 00:23:01,270  
And so it's multiple stages.

518

00:23:01,270 --> 00:23:05,930  
This is the end of the second  
stage here, as it falls away.

519

00:23:05,930 --> 00:23:09,260  
We call it the second stage and  
then the third stage lights up

520

00:23:09,260 --> 00:23:10,570  
and that pushes you to orbit.

521

00:23:10,570 --> 00:23:13,580  
The whole thing just  
takes about nine minutes.

522

00:23:13,580 --> 00:23:14,640  
>> Really quick really cool.

523

00:23:14,640 --> 00:23:18,080  
>> It's like you go from sitting  
still on the ground to going

524

00:23:18,080 --> 00:23:19,860  
over 17,000 miles an hour

525

00:23:19,860 --> 00:23:25,120  
and you are zero G weightless  
then in just nine minutes.

526

00:23:25,120 --> 00:23:29,580  
And the way we do it now, well

once the vehicle gets to orbit

527

00:23:29,580 --> 00:23:32,830

of course it has to get  
activated now and things

528

00:23:32,830 --> 00:23:37,120

like unfurling the solar rays  
which the Soyuz uses sunlight

529

00:23:37,120 --> 00:23:38,250

to generate electricity.

530

00:23:38,250 --> 00:23:40,180

So you have to unfurl  
the solar rays,

531

00:23:40,180 --> 00:23:42,940

go through the other systems  
checks and then there's a couple

532

00:23:42,940 --> 00:23:47,060

of burns typically to  
circularize the orbit and then

533

00:23:47,060 --> 00:23:49,330

to set up the [Background  
noise] rendezvous

534

00:23:49,330 --> 00:23:52,490

and what they'll be doing  
is setting up a rendezvous

535

00:23:52,490 --> 00:23:54,620

about two days after  
launch, almost --

536

00:23:54,620 --> 00:23:57,150

it's about 50 hours  
after launch,

537

00:23:57,150 --> 00:24:01,870  
the crew will be docking  
to the space station.

538

00:24:01,870 --> 00:24:04,120  
And so that's a real  
precise maneuver

539

00:24:04,120 --> 00:24:06,490  
to get the orbit fine-tuned.

540

00:24:06,490 --> 00:24:09,770  
So after the first few  
orbits surround the earth

541

00:24:09,770 --> 00:24:11,210  
after launch they'll  
be doing some

542

00:24:11,210 --> 00:24:13,330  
of those little maneuver  
corrections.

543

00:24:13,330 --> 00:24:16,610  
>> Just a little cramped in  
there for two days I'd imagine.

544

00:24:16,610 --> 00:24:20,440  
>> Well if you were just inside  
the capsule it would be almost

545

00:24:20,440 --> 00:24:22,490  
intolerable because  
there's just --

546

00:24:22,490 --> 00:24:25,670  
there's no room to stretch your  
legs out it's really tight.

547

00:24:25,670 --> 00:24:29,520

Once you get to orbit and  
take care of the maneuvers

548

00:24:29,520 --> 00:24:31,590

that you need to do and  
there's some pressure checks

549

00:24:31,590 --> 00:24:33,720

to make sure that  
that orbital module,

550

00:24:33,720 --> 00:24:36,420

the top part is holding  
pressure.

551

00:24:36,420 --> 00:24:38,330

So you go through  
very careful checks.

552

00:24:38,330 --> 00:24:39,640

>> Yeah.

553

00:24:39,640 --> 00:24:43,050

>> Once that all checks out  
then you could open up the hatch

554

00:24:43,050 --> 00:24:47,280

and get out of your seats and  
get changed out of the suits.

555

00:24:47,280 --> 00:24:49,640

You don't spend the full  
two days in the suits...

556

00:24:49,640 --> 00:24:50,600

>> Yeah.

557

00:24:50,600 --> 00:24:53,610

>> ...and it's nice to have a little bit of room to stretch

558

00:24:53,610 --> 00:24:55,400  
out and get a bite to eat.

559

00:24:55,400 --> 00:24:59,100  
And your food and your water are up there, things like that.

560

00:24:59,100 --> 00:25:02,170  
>> Then once you dock you have more room than you know to do it

561

00:25:02,170 --> 00:25:02,880  
since you're on board.

562

00:25:02,880 --> 00:25:05,850  
>> Oh, it's such a big difference, you bet.

563

00:25:05,850 --> 00:25:09,330  
Even the two habitable parts

564

00:25:09,330 --> 00:25:13,170  
of the Soyuz space craft have just 10 cubic meters total

565

00:25:13,170 --> 00:25:16,780  
before you add seats, instrument panels and all of these...

566

00:25:16,780 --> 00:25:18,100  
>> It takes up a lot.

567

00:25:18,100 --> 00:25:20,130  
>> ...which take up half of it.

568

00:25:20,130 --> 00:25:23,110

So there's not much  
volume to work with.

569

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

Once you get to the  
station it's really fun

570

00:25:25,110 --> 00:25:29,100

to watch especially new guys as  
they're coming across the hatch

571

00:25:29,100 --> 00:25:30,760

because it's like wow.

572

00:25:30,760 --> 00:25:33,630

In the Soyuz you can stick  
[Background noise] out your arms

573

00:25:33,630 --> 00:25:37,990

and touch both walls  
and there's not --

574

00:25:37,990 --> 00:25:40,480

you're floating but  
you're not traveling.

575

00:25:40,480 --> 00:25:40,550

>> Yeah.

576

00:25:40,550 --> 00:25:41,750

>> You're not flying anywhere.

577

00:25:41,750 --> 00:25:44,670

You're floating there but you're  
not really propelling yourself

578

00:25:44,670 --> 00:25:45,030

and moving around.

579

00:25:45,030 --> 00:25:46,360

>> You don't get to  
have fun with it yet.

580

00:25:46,360 --> 00:25:47,830

>> You're not having  
fun with it yet.

581

00:25:47,830 --> 00:25:50,010

No time for stupid  
astronaut tricks yet.

582

00:25:50,010 --> 00:25:52,040

But when you get into the  
station though it's actually

583

00:25:52,040 --> 00:25:55,640

very disorienting first because  
it's so big and you're trying

584

00:25:55,640 --> 00:25:56,850

to figure out how to move,

585

00:25:56,850 --> 00:25:58,580

because you haven't had  
any practice moving.

586

00:25:58,580 --> 00:25:59,200

>> Yeah.

587

00:25:59,200 --> 00:26:02,140

>> And so it's like you  
watch -- you watch them.

588

00:26:02,140 --> 00:26:03,400

Of course none of these --

589

00:26:03,400 --> 00:26:06,130

none of these guys going  
up this time are rookies.

590  
00:26:06,130 --> 00:26:06,230  
>> Yeah.

591  
00:26:06,230 --> 00:26:07,500  
>> So they're -- I guarantee  
there's going to be...

592  
00:26:07,500 --> 00:26:09,090  
>> So they'll all be  
pros by the time --

593  
00:26:09,090 --> 00:26:11,120  
they don't have to  
crawl before they run.

594  
00:26:11,120 --> 00:26:12,410  
>> No, no, they'll be fine.

595  
00:26:12,410 --> 00:26:15,430  
They'll be a little  
bit tentative right

596  
00:26:15,430 --> 00:26:15,940  
at [Background noise] first

597  
00:26:15,940 --> 00:26:17,920  
as they're getting  
their space legs back.

598  
00:26:17,920 --> 00:26:19,270  
>> It's like riding  
a bike though.

599  
00:26:19,270 --> 00:26:22,040  
>> It's like riding a  
bike, oh yeah [chuckle].

600  
00:26:22,040 --> 00:26:24,420

>> All right, well we'll  
certainly be looking forward

601  
00:26:24,420 --> 00:26:26,590  
to that launch coming  
up this Saturday.

602  
00:26:26,590 --> 00:26:26,690  
>> Yeah.

603  
00:26:26,690 --> 00:26:28,570  
>> Expedition 29  
Commander Mike Foss.

604  
00:26:28,570 --> 00:26:31,380  
Thanks so much for coming on  
and giving us this great insight

605  
00:26:31,380 --> 00:26:33,070  
into everything that they're  
going through this week

606  
00:26:33,070 --> 00:26:35,280  
and what they have to look  
forward to a little bit later.

607  
00:26:35,280 --> 00:26:37,750  
>> It's exciting times, so  
I'm really excited for them.

608  
00:26:37,750 --> 00:26:41,720  
It's a long training road and  
a, you know, I wish I was there.

609  
00:26:41,720 --> 00:26:44,050  
It's a good time and I  
can't wait to watch it.

610  
00:26:44,050 --> 00:26:45,750  
>> Yep, well we'll

be following on.

611

00:26:45,750 --> 00:26:48,690

Hopefully we see you up  
there again sometimes soon.