



1
00:00:03,136 --> 00:00:06,636
>> Dr. Tom Marshburn will
be making his second flight

2
00:00:06,636 --> 00:00:09,726
and his first long-duration
stay aboard the station as well,

3
00:00:09,726 --> 00:00:15,196
his first flight was as
a crew member on STS-127,

4
00:00:15,616 --> 00:00:20,716
which flew back in July
of 2009 to the ISS,

5
00:00:20,716 --> 00:00:24,546
and in fact we do have
an opportunity to talk

6
00:00:24,586 --> 00:00:29,326
to Dr. Marshburn, he is as
I mentioned in Star City,

7
00:00:29,766 --> 00:00:35,396
awaiting I guess departure
for Baikonur on Thursday,

8
00:00:35,986 --> 00:00:38,186
good morning Tom, are you there?

9
00:00:38,186 --> 00:00:39,706
>> Hey, good morning Kyle,
good to hear your voice.

10
00:00:39,706 --> 00:00:40,256
Yep, I'm here.

11
00:00:40,396 --> 00:00:42,726

>> Hey, that's great, it's
great to talk to you about --

12

00:00:42,726 --> 00:00:45,686

I appreciate you joining us
here in the control center

13

00:00:46,786 --> 00:00:49,646

for a few minutes to talk

14

00:00:49,646 --> 00:00:52,566

about all the work that's
been going on, your training

15

00:00:52,566 --> 00:00:56,566

and basically what got you
here to be ready to go.

16

00:00:56,566 --> 00:00:58,166

It probably doesn't feel like --

17

00:00:58,166 --> 00:01:01,516

feel like that it's
actually here now, huh?

18

00:01:01,516 --> 00:01:03,396

>> Oh, you're absolutely
right, two and a half years

19

00:01:03,396 --> 00:01:05,396

of training overall, and it's --

20

00:01:05,396 --> 00:01:09,916

and for the last few months it's
been a series of final exams

21

00:01:09,916 --> 00:01:14,286

in the U.S. in the early fall,
and then final exams here

22

00:01:14,286 --> 00:01:16,736

in Russia for the soviets and
the Russian segment studies.

23

00:01:17,386 --> 00:01:19,866

We've been saying goodbye
to our instructors as we go

24

00:01:19,866 --> 00:01:23,336

from these training
centers, so it's been a bit

25

00:01:23,336 --> 00:01:28,146

of an emotional step down each
time, so we're a bit used to it,

26

00:01:28,216 --> 00:01:31,106

but now it's starting to dawn
on us that we're going to launch

27

00:01:31,106 --> 00:01:34,076

in about two weeks and we're
getting very excited about it.

28

00:01:34,256 --> 00:01:34,956

>> Yeah, I bet.

29

00:01:34,956 --> 00:01:37,636

We're going to have an
opportunity I think to talk

30

00:01:37,636 --> 00:01:44,356

to Chris tomorrow, but you have
a kind of a special background

31

00:01:44,356 --> 00:01:46,446

because you're obviously
a medical doctor,

32

00:01:47,006 --> 00:01:49,046
and in fact you actually
have worked

33
00:01:49,286 --> 00:01:51,546
in probably both
control centers, right?

34
00:01:51,546 --> 00:01:53,176
You supported shuttle flights

35
00:01:53,176 --> 00:01:55,936
when you were a flight surgeon
here at NASA on this side,

36
00:01:56,516 --> 00:02:01,556
and then you also supported one
of our mirror crew members on --

37
00:02:02,076 --> 00:02:04,116
from that control center
over there correct?

38
00:02:04,696 --> 00:02:07,616
>> That's right, a
really unique experience,

39
00:02:07,686 --> 00:02:09,686
a chance that few
people get to get.

40
00:02:09,996 --> 00:02:12,666
I was sitting surgeon
consult for shuttle flights

41
00:02:12,666 --> 00:02:14,866
and for station flights,
but I was one

42
00:02:14,866 --> 00:02:17,906

of the prime capsule
communicators, which is a rare

43

00:02:17,906 --> 00:02:20,246

for a non-astronaut, I was
flight surgeon at the time,

44

00:02:20,696 --> 00:02:23,156

from the mission
control center in Moscow.

45

00:02:23,526 --> 00:02:25,796

And that happened simply
because we didn't have a lot

46

00:02:25,796 --> 00:02:28,516

of NASA personnel at the
time over here in Moscow.

47

00:02:28,996 --> 00:02:33,116

So for most of the US
astronauts that flew

48

00:02:33,116 --> 00:02:35,926

to the mirror space station in
the '90s, I got to talk to them

49

00:02:35,926 --> 00:02:39,036

from the mission control
center, very interesting

50

00:02:39,036 --> 00:02:42,976

to see the way the two
control teams worked together,

51

00:02:43,366 --> 00:02:45,276

a lot of similarities,
a lot of overlap,

52

00:02:45,316 --> 00:02:46,806

but also a good number
of differences.

53

00:02:46,806 --> 00:02:48,026

It was a lot of fun.

54

00:02:48,026 --> 00:02:48,456

>> Yeah, I bet.

55

00:02:48,456 --> 00:02:51,896

And so then you, you know,
you became an astronaut

56

00:02:51,896 --> 00:02:53,586

so you've had that
background working

57

00:02:53,586 --> 00:02:57,786

with all the flight controllers
and of course you flew,

58

00:02:57,966 --> 00:03:03,366

as I mentioned leading into
discussion, back on Endeavor

59

00:03:03,796 --> 00:03:07,626

on the 2-JA mission, which on

60

00:03:07,626 --> 00:03:10,796

that flight you did three space
walks I believe, so you've got

61

00:03:10,796 --> 00:03:16,326

that experience too, but what do
you take from your flight then

62

00:03:16,326 --> 00:03:19,346

and now looking forward to
going back to the station,

63

00:03:19,346 --> 00:03:21,016

only this time long-duration?

64

00:03:21,016 --> 00:03:23,156

I mean, as a medical
doctor that's got

65

00:03:23,156 --> 00:03:26,976

to be I won't say a lifelong
dream, but certainly something

66

00:03:27,606 --> 00:03:30,256

that is very beneficial
to your background.

67

00:03:31,596 --> 00:03:35,106

>> Oh yeah, as a flight
surgeon we would --

68

00:03:35,106 --> 00:03:37,656

one of the jobs of the flight
surgeon is to imagine what it's

69

00:03:37,656 --> 00:03:42,306

like to be in space, you're
treating astronauts and you --

70

00:03:42,386 --> 00:03:46,176

the best flight surgeons are
the ones that are able to sort

71

00:03:46,176 --> 00:03:48,786

of predict, even though
they're never able to get there,

72

00:03:48,876 --> 00:03:51,986

predict what it's going to
be like for the astronaut,

73

00:03:52,066 --> 00:03:53,886

and predict what the
challenges the physical --

74

00:03:53,886 --> 00:03:55,706

the physiological
challenges are going to be.

75

00:03:55,956 --> 00:03:58,376

And we do that by interviewing
astronauts when they come back,

76

00:03:58,376 --> 00:03:59,656

it's part of their
medical record,

77

00:03:59,686 --> 00:04:01,246

part of their medical debrief.

78

00:04:01,516 --> 00:04:04,856

So very exciting to get up
there myself, and a number

79

00:04:04,856 --> 00:04:06,926

of flight surgeons have
been selected as astronauts,

80

00:04:06,926 --> 00:04:10,706

Mike Barrett's another,
and to get up there

81

00:04:10,706 --> 00:04:13,986

and to actually be able to
experience that ourselves,

82

00:04:13,986 --> 00:04:16,006

it gives a huge amount
of insight.

83

00:04:16,056 --> 00:04:18,516

What it feels like when you hit
zero gravity for the first time,

84

00:04:18,916 --> 00:04:21,526

the rush of fluids to
the head, what it feels

85

00:04:21,526 --> 00:04:25,106

like to have just a sensory
overload of floating in space

86

00:04:25,106 --> 00:04:26,906

and having important
things to do right away,

87

00:04:27,806 --> 00:04:30,586

so what I'm looking forward to
on this long duration flight,

88

00:04:30,586 --> 00:04:34,366

which would be unique for
me is to feel my body adapt.

89

00:04:34,366 --> 00:04:36,636

I hear it takes a good
month for the body to adapt

90

00:04:36,636 --> 00:04:39,716

to zero gravity, so I'm going
to be experiencing that,

91

00:04:39,716 --> 00:04:42,336

and then over the flow of
several months what it will feel

92

00:04:42,336 --> 00:04:44,786

like to live in a confined area,

93

00:04:45,186 --> 00:04:48,566

to have similar surroundings

during that time,

94

00:04:48,956 --> 00:04:51,636

so I'm just looking forward
to seeing what happens,

95

00:04:51,636 --> 00:04:52,946

I'll be keeping a journal

96

00:04:53,676 --> 00:04:55,386

and making observations
the whole way.

97

00:04:55,886 --> 00:04:58,416

>> Has Roman given you --

98

00:04:58,786 --> 00:05:02,276

or other crew members that
are launched on a Soyuz

99

00:05:02,276 --> 00:05:06,516

versus a space shuttle given
you any differences to sort

100

00:05:06,516 --> 00:05:10,226

of look forward to or do they
kind of tell you that you want

101

00:05:10,226 --> 00:05:11,656

to experience it on your own

102

00:05:11,786 --> 00:05:13,846

and don't give you a
whole lot of information?

103

00:05:14,526 --> 00:05:17,226

>> I get a little bit of
information, particularly

104

00:05:17,226 --> 00:05:19,236
from the astronauts
that did flow shuttle,

105
00:05:19,606 --> 00:05:21,976
because very few Russians
have flown shuttle and Soyuz,

106
00:05:22,376 --> 00:05:24,526
but the astronauts that have
gone before me that have flown

107
00:05:24,526 --> 00:05:26,796
to the station have
flown shuttle

108
00:05:27,216 --> 00:05:29,896
and then Soyuz understand
that the Soyuz launch,

109
00:05:29,896 --> 00:05:33,466
while it's similar in duration
to a shuttle launch for time

110
00:05:33,466 --> 00:05:35,266
from the ground to
getting on orbit.

111
00:05:35,586 --> 00:05:40,076
Understand that the Soyuz
launch is a little bit smoother.

112
00:05:40,076 --> 00:05:41,266
Those solid rocket boosters

113
00:05:41,266 --> 00:05:43,836
on the shuttle really
give you a good shaking,

114
00:05:43,836 --> 00:05:46,976

and you can feel the power of
those things lifting the shuttle

115

00:05:46,976 --> 00:05:49,416

and its external tank
off the pad and up

116

00:05:49,746 --> 00:05:50,826

out of the atmosphere.

117

00:05:51,266 --> 00:05:55,156

So I suspect similar
G-forces, but not quite

118

00:05:55,156 --> 00:05:56,006

as much shaking around.

119

00:05:56,346 --> 00:05:57,716

I'll tell you what I'm
really looking forward

120

00:05:57,716 --> 00:06:01,176

to is the living space inside
the Soyuz, you may know

121

00:06:01,176 --> 00:06:03,446

that it's very tiny
for three people

122

00:06:03,836 --> 00:06:09,256

in the landing little
gumdrop shape craft,

123

00:06:09,256 --> 00:06:10,786

and then there's a living area.

124

00:06:11,136 --> 00:06:13,916

Both of them together are not
much bigger than a closet,

125

00:06:14,306 --> 00:06:16,296

particularly with
equipment stuffed in there.

126

00:06:16,426 --> 00:06:19,486

So I suspect it's going to be
a little bit like the mercury

127

00:06:19,486 --> 00:06:22,156

and Gemini astronauts,
perhaps the Apollo astronauts

128

00:06:22,156 --> 00:06:23,286

experienced on launch.

129

00:06:23,666 --> 00:06:25,036

The same confined living.

130

00:06:25,446 --> 00:06:27,606

We're only going to be that
way for about two days,

131

00:06:28,256 --> 00:06:30,986

but I'm very much
looking forward to that,

132

00:06:30,986 --> 00:06:33,216

and it'll be a huge
piece of history

133

00:06:33,216 --> 00:06:35,336

that I'm getting to
experience there.

134

00:06:35,406 --> 00:06:36,626

>> Yeah, no kidding.

135

00:06:36,996 --> 00:06:42,426

Obviously your expedition

scheduled probably

136

00:06:42,426 --> 00:06:45,186

for about the same as
the three guys that are

137

00:06:45,186 --> 00:06:48,916

up there right now, about
147 days or so if all goes

138

00:06:49,356 --> 00:06:51,836

as it's currently planned

139

00:06:51,836 --> 00:06:54,726

and your shuttle flight
obviously was ten days,

140

00:06:54,726 --> 00:06:58,956

and that was to some
people described it

141

00:06:59,056 --> 00:07:02,916

as a hundred yard dash versus
what you're going to do now

142

00:07:02,916 --> 00:07:05,706

because it gives you an
opportunity to spread out

143

00:07:05,706 --> 00:07:09,826

and actually live in space, and
you've got to be looking forward

144

00:07:09,826 --> 00:07:13,096

to the contrast in
those two based

145

00:07:13,096 --> 00:07:14,456

on your first flight
to this one.

146

00:07:15,326 --> 00:07:18,056

>> Yeah, you know there
is so much work going

147

00:07:18,056 --> 00:07:20,226

on up there right now,
particularly in the laboratories

148

00:07:20,226 --> 00:07:23,106

with the -- we're going to have
130 scientific experiments going

149

00:07:23,106 --> 00:07:24,596

on while I'm there.

150

00:07:24,956 --> 00:07:28,076

People coming back over the
last couple of years have said,

151

00:07:28,076 --> 00:07:30,626

"You know, it's really more
like a six-month sprint

152

00:07:30,626 --> 00:07:33,316

and not a marathon anymore."

153

00:07:34,056 --> 00:07:36,406

The -- although they're
coming back very happy

154

00:07:36,406 --> 00:07:41,036

and a little bit sad to
leave, the work-rest schedule,

155

00:07:41,326 --> 00:07:44,726

while the work is intense
there's enough rest

156

00:07:44,726 --> 00:07:47,256
to recharge batteries,
and you're right,

157
00:07:47,256 --> 00:07:49,546
I think there will be a few
times, I think there was only

158
00:07:49,546 --> 00:07:52,506
about a 45 minute period
during my shuttle flight,

159
00:07:52,506 --> 00:07:54,526
we were docked at station for
about ten days but we were

160
00:07:54,526 --> 00:07:55,416
up there for about 16.

161
00:07:55,476 --> 00:07:59,566
But we were so busy the whole
time that 45 minute period

162
00:07:59,566 --> 00:08:00,906
where I got to look
out the window

163
00:08:00,906 --> 00:08:04,036
and just experience the
joy of zero-gravity other

164
00:08:04,036 --> 00:08:05,646
than the day to day work.

165
00:08:05,646 --> 00:08:09,206
So I think there will be more
time on my long-duration flight

166
00:08:09,446 --> 00:08:11,986
to enjoy that and to

get to be an expert too

167

00:08:12,566 --> 00:08:14,286
at navigating through
the modules.

168

00:08:14,516 --> 00:08:17,096
We were very impressed when
we arrived on the shuttle

169

00:08:17,556 --> 00:08:20,426
with the long-duration
colleagues that greeted us

170

00:08:20,426 --> 00:08:21,406
as we came over the hatch.

171

00:08:21,866 --> 00:08:24,136
They were very good at
not running into things,

172

00:08:24,136 --> 00:08:26,716
and very smoothly
floating about the cabin

173

00:08:26,716 --> 00:08:28,436
and in complete control
all the time,

174

00:08:28,966 --> 00:08:32,426
whereas we were still a bit
of like baby deer on ice,

175

00:08:32,836 --> 00:08:35,026
so looking forward to
being an expert there.

176

00:08:35,466 --> 00:08:36,406
>> Yeah, I bet.

177

00:08:36,546 --> 00:08:39,536

And of course the station
is a little bit bigger

178

00:08:39,536 --> 00:08:42,116

that what it was when
you were there, you --

179

00:08:42,906 --> 00:08:46,636

your flight was in July of
'09 and the other components

180

00:08:46,636 --> 00:08:49,836

that were delivered were
not massive modules,

181

00:08:49,876 --> 00:08:54,026

but certainly have added to
the size since you were there.

182

00:08:54,336 --> 00:08:57,966

You -- I think you and Chris
are scheduled for a couple

183

00:08:57,966 --> 00:09:00,946

of space walks right now,
during your expedition?

184

00:09:01,656 --> 00:09:04,616

>> We are not scheduled
for any right now, the --

185

00:09:04,936 --> 00:09:08,566

we did train for some
and as always happens

186

00:09:08,566 --> 00:09:10,946

in space flight you've
got to make a plan,

187

00:09:10,946 --> 00:09:12,296

but the plan can change on you,

188

00:09:12,686 --> 00:09:14,966

so those space flights

have moved into the future

189

00:09:14,966 --> 00:09:18,436

out of our expedition,

however who knows?

190

00:09:18,436 --> 00:09:20,906

You know we've trained to handle

any contingency that comes

191

00:09:20,906 --> 00:09:25,836

up on the outside of the space

station, so we're prepared to go

192

00:09:25,836 --> 00:09:29,016

out there, and we're going

to act as if we are going

193

00:09:29,016 --> 00:09:31,416

to do a spacewalk, that

is in terms of staying fit

194

00:09:31,416 --> 00:09:35,056

and keeping our upper bodies

fit, keeping our minds sharp

195

00:09:35,056 --> 00:09:39,006

for EVA, if we do indeed

need to go out the hatch.

196

00:09:39,386 --> 00:09:43,096

So we're looking forward to that

and we'll just see what happens.

197

00:09:43,096 --> 00:09:47,356
You know the Node 3 was
added and the PMM were added

198
00:09:47,356 --> 00:09:50,396
after I spent my time
on the space station,

199
00:09:50,866 --> 00:09:52,576
and the Node 3as you
know has the cupola.

200
00:09:52,746 --> 00:09:55,676
So I can't wait to get out there
and get to look out the cupola.

201
00:09:55,956 --> 00:10:00,826
>> Yea, I bet, the -- in
terms of spacewalk training,

202
00:10:00,896 --> 00:10:04,076
you made actually a good
point there because I think

203
00:10:04,076 --> 00:10:08,216
for shuttle flights you
had a ton of time leading

204
00:10:08,216 --> 00:10:11,066
up to a shuttle flight to
train for the space walks

205
00:10:11,066 --> 00:10:13,466
because you knew you were
going to do those space walks,

206
00:10:13,466 --> 00:10:15,296
because that was
part of your mission,

207

00:10:15,766 --> 00:10:18,846
and now if one gets called
up while you're up there,

208

00:10:18,966 --> 00:10:24,146
it's a whole different kind of
training in terms of it's kind

209

00:10:24,146 --> 00:10:27,586
of paper training or electronic
training and voice training

210

00:10:27,586 --> 00:10:29,156
with your EVA team
on the ground.

211

00:10:29,656 --> 00:10:32,706
But obviously you mentioned
that you guys trained

212

00:10:32,706 --> 00:10:38,546
for generic-type space
walks, so if you do get asked

213

00:10:38,546 --> 00:10:42,236
to do a spacewalk it would be
a little bit different in terms

214

00:10:42,536 --> 00:10:46,366
of that experience, but you've
already had EVA training

215

00:10:46,366 --> 00:10:47,846
and so it's got to
help you, right?

216

00:10:48,676 --> 00:10:51,896
>> Oh yeah, yeah that helps,
it makes a huge difference.

217

00:10:51,896 --> 00:10:54,486

There's certain things
that you just cannot get

218

00:10:54,486 --> 00:10:56,316

in your ground-based
training, that you can only get

219

00:10:56,316 --> 00:10:58,786

with the actual experience,
the --

220

00:10:58,916 --> 00:11:01,396

I would say the three
main things are the view,

221

00:11:01,396 --> 00:11:06,366

you can't recreate that on
earth and that does affect you

222

00:11:06,366 --> 00:11:07,226

in the sense that you have

223

00:11:07,226 --> 00:11:09,246

to keep your mind off the
view and on your work.

224

00:11:09,616 --> 00:11:13,136

The temperature changes
are quite intense in space.

225

00:11:13,406 --> 00:11:15,526

You have to adjust your
temperature on the dark side,

226

00:11:15,526 --> 00:11:19,156

I got the chills when I was
on the dark side of the earth

227

00:11:19,156 --> 00:11:20,676

in the shadow of the
station when we were

228

00:11:20,676 --> 00:11:21,656
on the light side of the earth.

229

00:11:22,006 --> 00:11:25,026
When I was holding onto a metal
platform for quite a while,

230

00:11:25,106 --> 00:11:27,426
you start to lose the
feeling in your fingers

231

00:11:27,426 --> 00:11:29,316
because you get chilled enough.

232

00:11:29,316 --> 00:11:32,896
So learning how to
take care of that,

233

00:11:32,896 --> 00:11:35,276
taking care of that early
on, and experiencing

234

00:11:35,276 --> 00:11:38,796
that as extra overhead to
your work, that's all part

235

00:11:38,796 --> 00:11:41,386
of the experience of having
done it, which I can apply

236

00:11:41,386 --> 00:11:45,466
to my future space walk, and
then just the overhead of being

237

00:11:45,466 --> 00:11:48,876
out there, understanding
the dangers associated

238

00:11:48,876 --> 00:11:50,736
with spacewalk, the
dangers associated

239

00:11:50,736 --> 00:11:54,226
with making sure your safety
tether doesn't get fouled up.

240

00:11:54,396 --> 00:11:56,836
Being cognizant of where
you really are in the vacuum

241

00:11:56,836 --> 00:11:58,876
of space with just your
thin space suit on,

242

00:11:59,336 --> 00:12:02,196
all of those things add up
to the actual experience.

243

00:12:02,466 --> 00:12:07,266
So I think having been out there
does make a big difference.

244

00:12:07,346 --> 00:12:11,146
The astronaut core and the
training teams are well aware

245

00:12:11,146 --> 00:12:15,226
of this issue with the inability
to train for an actual spacewalk

246

00:12:15,226 --> 00:12:17,606
that may occur if something
just suddenly breaks

247

00:12:17,606 --> 00:12:18,596
on the space station.

248

00:12:18,986 --> 00:12:21,576

So for that reason they've
given us generic training,

249

00:12:21,956 --> 00:12:25,476

I'm confident with using any
tool that they ask us to use,

250

00:12:25,476 --> 00:12:28,056

working with any
component that's out there,

251

00:12:28,616 --> 00:12:31,036

so we'll just have
to see what happens.

252

00:12:31,946 --> 00:12:36,476

>> So describe now
as you mentioned

253

00:12:36,476 --> 00:12:39,216

that you guys are getting
ready to head to Baikonur

254

00:12:39,216 --> 00:12:41,816

for your launch in a
couple of weeks, what --

255

00:12:41,816 --> 00:12:44,696

and you guys were just
I guess certified,

256

00:12:44,696 --> 00:12:48,886

maybe that's the wrong word,
but again, approved I guess

257

00:12:48,886 --> 00:12:53,126

as a crew to go, but kind of
lay out your template from now

258

00:12:53,446 --> 00:12:56,276
until launch day on the 19th?

259

00:12:57,416 --> 00:12:59,936
>> Yeah, actually, that is
the word they use, certified,

260

00:12:59,936 --> 00:13:02,796
and they are very clear we are
certified to go into quarantine.

261

00:13:03,236 --> 00:13:06,296
We've got a few more medical
checks before we are certified

262

00:13:06,296 --> 00:13:07,626
for launch, and that
won't happen

263

00:13:07,626 --> 00:13:10,666
until the moment before
we walk out to the pad.

264

00:13:10,666 --> 00:13:13,926
And that's when our
backup crew is off-duty,

265

00:13:13,956 --> 00:13:16,566
they're no longer a back-up
crew when they say goodbye to us

266

00:13:16,566 --> 00:13:18,716
on the Launchpad,
so that's the moment

267

00:13:18,716 --> 00:13:20,596
in which we are absolutely
certified to go.

268

00:13:21,156 --> 00:13:23,826

So but we're going to leave,
you're right, on the sixth,

269

00:13:23,826 --> 00:13:26,346

this Thursday, there's
going to be two weeks

270

00:13:26,496 --> 00:13:29,046

when we are allowed a lot of
administrative time just going

271

00:13:29,046 --> 00:13:31,516

over our notes, reviewing
our flight data file,

272

00:13:31,516 --> 00:13:35,126

our instructions for flying the
Soyuz, I'm going to use the time

273

00:13:35,126 --> 00:13:38,586

to think about moment by moment
what my actions are going to be.

274

00:13:38,986 --> 00:13:40,906

It's like a lot of
things I suppose,

275

00:13:40,906 --> 00:13:43,886

if it starts off well it
seems to go well over time.

276

00:13:43,886 --> 00:13:47,526

So we'll spend some time going
over all the minute details

277

00:13:47,526 --> 00:13:50,206

of our first few days in orbit,

278

00:13:50,206 --> 00:13:54,126

and very importantly
just sending emails

279
00:13:54,126 --> 00:13:55,166
to family and friends.

280
00:13:55,616 --> 00:13:57,296
Family will be allowed
to visit us,

281
00:13:57,326 --> 00:14:00,296
so we'll have some very
poignant and important moments

282
00:14:00,296 --> 00:14:05,356
with my wife and daughter,
and the rest of my family,

283
00:14:05,406 --> 00:14:08,666
while I'm in quarantine,
so be doing that

284
00:14:08,666 --> 00:14:11,386
and otherwise just
staying physically fit

285
00:14:11,526 --> 00:14:12,406
and getting ready to go.

286
00:14:13,156 --> 00:14:16,136
>> Yeah, I was going to
ask you about family,

287
00:14:16,226 --> 00:14:19,706
because that's obviously
a very important part

288
00:14:20,346 --> 00:14:23,186
of you know the job that
you do because it's a kind

289

00:14:23,186 --> 00:14:25,416
of a team effort when you
make decisions and stuff,

290

00:14:25,416 --> 00:14:28,386
and how do you all
talk about you know,

291

00:14:28,386 --> 00:14:31,476
and obviously being an
astronaut is ingrained

292

00:14:31,476 --> 00:14:33,056
in an entire family,

293

00:14:33,216 --> 00:14:35,716
but obviously you don't
make decisions alone.

294

00:14:36,106 --> 00:14:39,846
So how did you all talk about,
"Hey I'm going to be assigned,"

295

00:14:39,846 --> 00:14:42,886
or, "I want to go do this
long-duration flight,

296

00:14:43,006 --> 00:14:44,446
so I'll be gone for
a few months"?

297

00:14:44,996 --> 00:14:46,976
>> Yeah well we, my wife
and I, talked about it

298

00:14:46,976 --> 00:14:50,446
after my shuttle flight, you
know, we started to discuss what

299

00:14:50,446 --> 00:14:52,376

if I were assigned for
a long-duration flight

300

00:14:52,436 --> 00:14:53,996

and how would that impact us?

301

00:14:53,996 --> 00:14:57,466

And we talked about it and
the difficulties of being away

302

00:14:57,606 --> 00:14:59,976

and felt like, you
know, quite frankly,

303

00:14:59,976 --> 00:15:03,576

others have done it before us,
members of the military go away

304

00:15:03,576 --> 00:15:08,546

for that long or longer,
so we felt like it was --

305

00:15:08,546 --> 00:15:10,856

it's important, it's
important for our country.

306

00:15:10,916 --> 00:15:15,296

It's an honor to do it, so we
agreed that if I were asked

307

00:15:15,296 --> 00:15:17,626

that I would go ahead
and enter the training.

308

00:15:18,006 --> 00:15:19,646

As it so happened
after that discussion,

309

00:15:19,646 --> 00:15:22,726
about two weeks later, I
got an email from the Chief

310
00:15:22,726 --> 00:15:25,666
of Astronaut Corps
and the email said,

311
00:15:25,766 --> 00:15:28,356
better get studying
on your Russian!

312
00:15:28,466 --> 00:15:31,196
It was a one-line email and
that was it, and I thought,

313
00:15:31,196 --> 00:15:33,556
"All right, well it looks like
an assignment might be coming

314
00:15:33,556 --> 00:15:35,226
up here pretty soon,"
and I was right.

315
00:15:35,226 --> 00:15:39,526
Early, just a couple more
weeks and I got an assignment.

316
00:15:39,976 --> 00:15:42,846
>> Obviously the one big
announcement that's occurred

317
00:15:43,216 --> 00:15:45,726
in the last couple of
weeks while you guys are

318
00:15:45,836 --> 00:15:47,536
in your final days
of training there

319

00:15:47,536 --> 00:15:50,636
in Star City is this
the one year increment

320
00:15:50,766 --> 00:15:54,516
that has just come
up and I don't know

321
00:15:54,516 --> 00:15:55,706
if you have any thoughts
on that,

322
00:15:55,706 --> 00:15:58,796
obviously being a
medical doctor that --

323
00:15:59,016 --> 00:16:01,886
it's an important step I
would think to transition

324
00:16:01,886 --> 00:16:05,086
from at least on the U.S.
side from the long days

325
00:16:05,086 --> 00:16:07,596
that we've had, which is
maybe on the order of 200

326
00:16:08,096 --> 00:16:10,196
to something more than a year,

327
00:16:10,636 --> 00:16:15,106
as you look toward
possible human travel beyond

328
00:16:15,106 --> 00:16:15,796
low-earth orbit.

329
00:16:16,656 --> 00:16:18,506
>> Oh yeah, you know

it's important

330

00:16:18,506 --> 00:16:22,546

to understand the limits
of what humans can do.

331

00:16:22,546 --> 00:16:23,526

Now, we're also talking

332

00:16:23,526 --> 00:16:28,026

at a cellular level we think
we know the rate of atrophy

333

00:16:28,026 --> 00:16:30,786

of muscle, bone, nerve,
cardiovascular system,

334

00:16:31,306 --> 00:16:33,396

but we've only had very
few people be up in space

335

00:16:33,396 --> 00:16:36,916

for that long a time, more
data is better in that regard.

336

00:16:37,356 --> 00:16:40,226

But I think very
importantly we need

337

00:16:40,226 --> 00:16:42,296

to understand what we
don't even know yet,

338

00:16:42,296 --> 00:16:43,576

what we don't know is a problem.

339

00:16:43,986 --> 00:16:46,116

You may have heard about
the eyesight problems

340

00:16:46,116 --> 00:16:47,716

that are coming up
potentially due

341

00:16:47,716 --> 00:16:50,756

to increased intracranial
pressure around --

342

00:16:50,756 --> 00:16:53,096

in the fluid around
the brain that goes up.

343

00:16:53,656 --> 00:16:54,686

We never would have known

344

00:16:54,686 --> 00:16:58,126

that that was an issue unless
we continued to fly people

345

00:16:58,126 --> 00:17:01,206

on long-duration flight, and now
we know it's a pretty big deal,

346

00:17:01,206 --> 00:17:03,316

and we need to figure out what's
going on there, it's important

347

00:17:03,316 --> 00:17:06,166

for exploration, and so who
knows what we're going to find

348

00:17:06,166 --> 00:17:07,476

out on this one-year mission?

349

00:17:08,076 --> 00:17:11,756

Hopefully we'll find out that
humans are just as robust

350

00:17:11,756 --> 00:17:15,176

as we think they are, and
it'll certainly be interesting

351
00:17:15,176 --> 00:17:16,996
from a scientific standpoint.

352
00:17:17,296 --> 00:17:21,046
>> Well the, you know on a
lighter note, obviously you're

353
00:17:21,046 --> 00:17:24,096
up there obviously performing
all these experiments

354
00:17:24,096 --> 00:17:27,966
and studying the human body
for long duration stays

355
00:17:27,966 --> 00:17:31,716
and all that, but there's also
downtime, and I know in your bio

356
00:17:31,716 --> 00:17:34,086
that it does mention that
you like playing the guitar

357
00:17:34,086 --> 00:17:37,136
and we all know that Chis
Hatfield obviously does,

358
00:17:37,136 --> 00:17:40,416
so are you guys planning
on any concerts up there?

359
00:17:41,376 --> 00:17:43,406
>> Yeah, you know, we play
different styles of music,

360
00:17:43,406 --> 00:17:46,586
I'm a -- I'm not a singer,

I'm a classical guitarist

361

00:17:46,586 --> 00:17:50,016
and Chris is a great performer
and singer and guitarist,

362

00:17:50,406 --> 00:17:54,646
so our different styles may very
well come together up there,

363

00:17:54,876 --> 00:17:57,136
I would like to contribute
to some musical pieces.

364

00:17:57,136 --> 00:17:58,296
You know, we'll see.

365

00:17:58,396 --> 00:18:00,746
If he's got the time, I'm
sure I would enjoy it.

366

00:18:00,976 --> 00:18:05,316
I think there is one guitar only
up there, so I'll have to lay

367

00:18:05,316 --> 00:18:07,096
down tracks or figure
out something

368

00:18:07,096 --> 00:18:09,056
because we can't both
play at the same time

369

00:18:09,056 --> 00:18:10,756
or maybe I'll figure
out drums or something.

370

00:18:11,246 --> 00:18:14,396
But I've got a number of things
I'm going to be working on;

371

00:18:14,396 --> 00:18:15,586

I'm going to be keeping
a journal.

372

00:18:15,776 --> 00:18:17,666

I think Chris will be
the music man up there,

373

00:18:17,666 --> 00:18:19,676

but if I can help
out then I'd love to.

374

00:18:20,656 --> 00:18:21,506

>> Well, that's great.

375

00:18:21,586 --> 00:18:25,426

It's obviously one thing about
life in space, it's the same

376

00:18:25,426 --> 00:18:28,226

as on the ground in that you
do have to balance your life,

377

00:18:28,426 --> 00:18:31,966

and we're really looking forward
to you guys getting up there

378

00:18:31,966 --> 00:18:34,516

and joining Kevin,
Oleg and Evgeny

379

00:18:35,286 --> 00:18:38,796

and really appreciate you
taking time to talk to us here

380

00:18:38,796 --> 00:18:41,606

in mission control
for a few minutes

381

00:18:41,606 --> 00:18:44,386

and we're looking forward
to your launch on the 19th.

382

00:18:44,386 --> 00:18:46,716

Thanks a lot for
joining us, Tom.

383

00:18:46,716 --> 00:18:48,246

>> I enjoyed, it,
thanks very much.

384

00:18:48,386 --> 00:18:48,946

Appreciate it.