



1  
00:00:06,740 --> 00:00:01,309  
this is wls can you hear us

2  
00:00:08,690 --> 00:00:06,750  
International Space Station and we sure

3  
00:00:13,539 --> 00:00:08,700  
can welcome to the International Space

4  
00:00:19,189 --> 00:00:16,400  
satellite we have astronauts Michael

5  
00:00:20,929 --> 00:00:19,199  
Hopkins and Rick is frocky Oh from the

6  
00:00:24,429 --> 00:00:20,939  
International Space Station how many

7  
00:00:32,060 --> 00:00:27,410  
we're 260 miles above the earth right

8  
00:00:35,000 --> 00:00:32,070  
now and now the interesting thing I

9  
00:00:37,250 --> 00:00:35,010  
think a lot of people from Illinois

10  
00:00:40,330 --> 00:00:37,260  
especially university-owned oi grads we

11  
00:00:42,530 --> 00:00:40,340  
remember that Michael Hopkins now a

12  
00:00:44,119 --> 00:00:42,540  
United States Air Force colonel and

13  
00:00:46,190 --> 00:00:44,129

obviously an astronaut on the space

14

00:00:48,049 --> 00:00:46,200

station was a defensive back for the

15

00:00:49,369 --> 00:00:48,059

Fighting Illini and they were just

16

00:00:51,500 --> 00:00:49,379

talking about you I think you didn't you

17

00:00:56,420 --> 00:00:51,510

do a hit from space during one of their

18

00:00:58,520 --> 00:00:56,430

football games this fall yeah I had an

19

00:01:00,709 --> 00:00:58,530

opportunity actually to send quite a few

20

00:01:03,619 --> 00:01:00,719

messages down to the team during the

21

00:01:05,090 --> 00:01:03,629

season and it was absolutely great to to

22

00:01:07,160 --> 00:01:05,100

be able to communicate with them like

23

00:01:16,370 --> 00:01:07,170

that and actually enjoyed watching a lot

24

00:01:23,179 --> 00:01:16,380

of the games on the weekends I'm sorry I

25

00:01:25,520 --> 00:01:23,189

missed the last question yeah I've

26

00:01:27,350 --> 00:01:25,530

actually been up here a little over five

27

00:01:30,440 --> 00:01:27,360

months now and I only have a couple

28

00:01:32,810 --> 00:01:30,450

weeks left Rick and Koichi our other

29

00:01:34,460 --> 00:01:32,820

crewmates here in the US OS segment

30

00:01:39,980 --> 00:01:34,470

they've been up here about three months

31

00:01:41,780 --> 00:01:39,990

now I think what would you say is the

32

00:01:47,840 --> 00:01:41,790

hardest part of getting adjusted to

33

00:01:49,280 --> 00:01:47,850

microgravity well you know when you get

34

00:01:52,010 --> 00:01:49,290

up here the body goes through quite a

35

00:01:53,630 --> 00:01:52,020

few changes you get this fluid shift to

36

00:01:55,880 --> 00:01:53,640

your head so you get kind of a puffy

37

00:01:58,760 --> 00:01:55,890

head and before your body adjusts for

38

00:02:01,700 --> 00:01:58,770

that of course just getting used to the

39

00:02:04,490 --> 00:02:01,710

zero-g your vestibular system takes a

40

00:02:06,230 --> 00:02:04,500

few days I probably say that the

41

00:02:10,400 --> 00:02:06,240

vestibular system is probably the worst

42

00:02:12,020 --> 00:02:10,410

to get used to you sort of feel as

43

00:02:15,260 --> 00:02:12,030

though your c6 the whole time would that

44

00:02:19,860 --> 00:02:17,970

yeah a little bit just for just for a

45

00:02:21,870 --> 00:02:19,870

few hours some folks it takes a few days

46

00:02:24,300 --> 00:02:21,880

some folks only a few hours to adjust

47

00:02:28,380 --> 00:02:24,310

but yeah that's probably a good analogy

48

00:02:30,180 --> 00:02:28,390

I guess now Michael you're you're on

49

00:02:31,590 --> 00:02:30,190

your way back down in a couple of weeks

50

00:02:34,350 --> 00:02:31,600

and you're going to take the Soyuz down

51  
00:02:36,390 --> 00:02:34,360  
and land in Kazakhstan as part of the

52  
00:02:38,880 --> 00:02:36,400  
that's how people are now transiting

53  
00:02:40,200 --> 00:02:38,890  
back and forth to the ISS is it

54  
00:02:41,670 --> 00:02:40,210  
something that you're gonna miss you

55  
00:02:46,860 --> 00:02:41,680  
looking forward to coming back to earth

56  
00:02:49,680 --> 00:02:46,870  
where your emotions here yes all of the

57  
00:02:51,660 --> 00:02:49,690  
above I'm certainly going to miss being

58  
00:02:54,060 --> 00:02:51,670  
up here being here with Rick and Koichi

59  
00:02:56,550 --> 00:02:54,070  
and our Russian colleagues and the

60  
00:02:58,230 --> 00:02:56,560  
ability to to do all the work up here in

61  
00:03:00,840 --> 00:02:58,240  
microgravity work with the teams on the

62  
00:03:02,400 --> 00:03:00,850  
ground it's absolutely fantastic on the

63  
00:03:05,220 --> 00:03:02,410

other hand I've been up here a while and

64

00:03:07,199 --> 00:03:05,230

it's it's time to go home and see the

65

00:03:08,190 --> 00:03:07,209

family start being a husband and a dad

66

00:03:10,880 --> 00:03:08,200

again

67

00:03:13,440 --> 00:03:10,890

imagine solid food is probably a good

68

00:03:14,940 --> 00:03:13,450

addition to your life too right I mean

69

00:03:20,040 --> 00:03:14,950

if you don't want to go down and like

70

00:03:23,130 --> 00:03:20,050

eat normally yeah I'm looking forward to

71

00:03:25,350 --> 00:03:23,140

some fresh produce probably have some

72

00:03:31,979 --> 00:03:25,360

pizza somewhere in there and maybe even

73

00:03:34,590 --> 00:03:31,989

a good Chicago style hot dog all right

74

00:03:37,140 --> 00:03:34,600

so as you're as you're there a couple

75

00:03:39,660 --> 00:03:37,150

weeks ago you guys had to go out and do

76

00:03:42,300 --> 00:03:39,670

some extra vehicular activity do a

77

00:03:43,920 --> 00:03:42,310

spacewalk looking to make sure that

78

00:03:45,690 --> 00:03:43,930

everything was was working properly had

79

00:03:47,910 --> 00:03:45,700

a little bit of a of an issue up there

80

00:03:49,590 --> 00:03:47,920

walk us through a little bit of what

81

00:03:51,180 --> 00:03:49,600

that's like when you when the when the

82

00:03:54,150 --> 00:03:51,190

red lights start going on and you

83

00:03:55,890 --> 00:03:54,160

realize there may be a problem onboard

84

00:03:57,660 --> 00:03:55,900

the space station I know down here in

85

00:03:59,039 --> 00:03:57,670

the press there was a lot of

86

00:04:01,920 --> 00:03:59,049

speculations you guys might actually

87

00:04:03,150 --> 00:04:01,930

have to abandon the space station for a

88

00:04:04,020 --> 00:04:03,160

while it turns out yeah I don't think

89

00:04:06,330 --> 00:04:04,030

you guys have ever thought that was

90

00:04:10,110 --> 00:04:06,340

going to happen but but what was that

91

00:04:11,610 --> 00:04:10,120

like in those first few moments or even

92

00:04:16,800 --> 00:04:11,620

days when you guys are trying to work

93

00:04:18,330 --> 00:04:16,810

that problem yeah the way the system

94

00:04:20,159 --> 00:04:18,340

works up here is when there's a failure

95

00:04:22,890 --> 00:04:20,169

of some kind we have a computer system

96

00:04:24,659 --> 00:04:22,900

that that turns on an audible alarm

97

00:04:26,640 --> 00:04:24,669

obviously and we get yellow and red

98

00:04:28,440 --> 00:04:26,650

indicators on a pan

99

00:04:30,030 --> 00:04:28,450

and when we hear the alarm we go and we

100

00:04:32,640 --> 00:04:30,040

check the computer to see what's going

101  
00:04:33,780 --> 00:04:32,650  
on very often we'll get these alarms are

102  
00:04:34,980 --> 00:04:33,790  
not very often once in a while we'll get

103  
00:04:37,230 --> 00:04:34,990  
these alarms and the ground will say oh

104  
00:04:38,820 --> 00:04:37,240  
that's a just a sensor problem or it's

105  
00:04:40,110 --> 00:04:38,830  
just a don't worry about it we'll take

106  
00:04:41,640 --> 00:04:40,120  
care of it and that's kind of how this

107  
00:04:43,800 --> 00:04:41,650  
one was was the ground call us at first

108  
00:04:45,750 --> 00:04:43,810  
and said no action on your part we're

109  
00:04:48,000 --> 00:04:45,760  
looking into it so at first I thought it

110  
00:04:48,780 --> 00:04:48,010  
was just a minor issue or just nothing

111  
00:04:51,180 --> 00:04:48,790  
no big deal

112  
00:04:53,070 --> 00:04:51,190  
but then as the hours went past and the

113  
00:04:55,020 --> 00:04:53,080

days a couple of days later within a day

114

00:04:56,400 --> 00:04:55,030

or so we started getting rumblings that

115

00:04:58,140 --> 00:04:56,410

they're having problems with the cooling

116

00:05:00,540 --> 00:04:58,150

system and that's when we started to

117

00:05:01,830 --> 00:05:00,550

think okay their ground is trying to fix

118

00:05:03,870 --> 00:05:01,840

it and if they can't fix it

119

00:05:05,520 --> 00:05:03,880

spacewalk is gonna be the option to go

120

00:05:08,850 --> 00:05:05,530

go and replace some parts and that's

121

00:05:09,990 --> 00:05:08,860

when it started to get serious through

122

00:05:11,520 --> 00:05:10,000

that moment where you're getting all

123

00:05:13,920 --> 00:05:11,530

strapped up ready to go and get out

124

00:05:15,540 --> 00:05:13,930

there and you're I mean obviously any

125

00:05:18,150 --> 00:05:15,550

time you're doing that is it

126

00:05:20,190 --> 00:05:18,160

exhilarating is it scary what I mean

127

00:05:22,050 --> 00:05:20,200

obviously you're well trained so scary

128

00:05:25,110 --> 00:05:22,060

is sort of a relative term here but if

129

00:05:26,040 --> 00:05:25,120

you have that sort of it that tension

130

00:05:27,930 --> 00:05:26,050

when you're going out because you

131

00:05:30,650 --> 00:05:27,940

realize hey I'm in space and I gotta fix

132

00:05:35,310 --> 00:05:32,850

yeah actually again I'm going to answer

133

00:05:37,440 --> 00:05:35,320

all of the above you know one of the

134

00:05:38,670 --> 00:05:37,450

when I've playing football at Illinois

135

00:05:40,500 --> 00:05:38,680

one of the things I found the worst

136

00:05:43,080 --> 00:05:40,510

parts of the game was waiting for the

137

00:05:44,820 --> 00:05:43,090

game to start and I would say here and

138

00:05:47,370 --> 00:05:44,830

doing the spacewalk was kind of the same

139

00:05:48,690 --> 00:05:47,380

thing it takes a while for us to get to

140

00:05:51,240 --> 00:05:48,700

the point where actually open the hatch

141

00:05:53,280 --> 00:05:51,250

and go out the door and and that waiting

142

00:05:55,020 --> 00:05:53,290

is can be very difficult and that's when

143

00:05:57,270 --> 00:05:55,030

the emotions start to build up all of

144

00:05:59,430 --> 00:05:57,280

the excitement the the intensity the

145

00:06:01,170 --> 00:05:59,440

nervousness it all just starts to turn

146

00:06:02,850 --> 00:06:01,180

and then finally if when you get out the

147

00:06:17,480 --> 00:06:02,860

hatch and you're able just to start

148

00:06:22,800 --> 00:06:20,580

it's hard to pick one important the most

149

00:06:24,420 --> 00:06:22,810

important science or the most important

150

00:06:27,030 --> 00:06:24,430

research project that's going on up here

151  
00:06:29,370 --> 00:06:27,040  
you know we've got a wide wider variety

152  
00:06:31,200 --> 00:06:29,380  
of different types of research one of

153  
00:06:33,180 --> 00:06:31,210  
the most interesting for me I thought is

154  
00:06:35,100 --> 00:06:33,190  
we're doing some research on vaccines

155  
00:06:37,800 --> 00:06:35,110  
and how we're trying to develop new

156  
00:06:40,290 --> 00:06:37,810  
vaccines for a new for these you know

157  
00:06:42,060 --> 00:06:40,300  
super super bacteria that

158  
00:06:43,940 --> 00:06:42,070  
starting to pop up around the earth so

159  
00:06:46,410 --> 00:06:43,950  
it's not just to help the folks up here

160  
00:06:47,700 --> 00:06:46,420  
but it's also to help the folks on the

161  
00:06:49,170 --> 00:06:47,710  
ground so I think that's the kind of

162  
00:06:51,150 --> 00:06:49,180  
thing that I think is important for us

163  
00:06:54,120 --> 00:06:51,160

to do a pair are things that not only

164

00:06:56,370 --> 00:06:54,130

help the space space travelers but also

165

00:06:58,110 --> 00:06:56,380

help the folks back on earth what would

166

00:07:00,120 --> 00:06:58,120

you say the coolest thing that you fly

167

00:07:02,220 --> 00:07:00,130

over in any given day what feature of

168

00:07:08,820 --> 00:07:02,230

Earth is it that they get your attention

169

00:07:10,320 --> 00:07:08,830

every time well that's a that's a tough

170

00:07:13,050 --> 00:07:10,330

question because there are so many

171

00:07:16,860 --> 00:07:13,060

amazing things to see on earth how about

172

00:07:19,830 --> 00:07:16,870

if I say Chicago well actually one of my

173

00:07:22,020 --> 00:07:19,840

favorite well one of my favorites is

174

00:07:24,540 --> 00:07:22,030

every time we fly over the Caribbean and

175

00:07:27,180 --> 00:07:24,550

you see just these incredible blue

176

00:07:29,400 --> 00:07:27,190

waters around the islands it truly is

177

00:07:32,220 --> 00:07:29,410

stunning but but again there are so many

178

00:07:34,410 --> 00:07:32,230

different things that we fly over there

179

00:07:38,870 --> 00:07:34,420

that are just truly incredible how many

180

00:07:44,330 --> 00:07:41,550

yeah we orbit the Earth every 90 minutes

181

00:07:48,270 --> 00:07:44,340

so 16 times a day we go around the earth

182

00:07:51,180 --> 00:07:48,280

thank you so much for your time where do

183

00:07:52,860 --> 00:07:51,190

you think NASA's future is going here do

184

00:07:54,930 --> 00:07:52,870

you think there'll be more long term

185

00:07:56,730 --> 00:07:54,940

duration kinds of flights like you guys

186

00:07:59,960 --> 00:07:56,740

are doing or Mars what do you think is

187

00:08:04,290 --> 00:08:03,000

well the near term we have of course

188

00:08:05,670 --> 00:08:04,300

many missions are going to be five to

189

00:08:07,710 --> 00:08:05,680

six months long and we're also going to

190

00:08:09,120 --> 00:08:07,720

start doing one-year missions we're

191

00:08:11,220 --> 00:08:09,130

going to send folks up here and stay up

192

00:08:14,400 --> 00:08:11,230

here for about a year and that's a

193

00:08:16,230 --> 00:08:14,410

prerequisite to going on to asteroid

194

00:08:18,090 --> 00:08:16,240

Moon or Mars and things like that you

195

00:08:20,640 --> 00:08:18,100

know we need to learn how the body how

196

00:08:22,800 --> 00:08:20,650

to keep the astronauts healthy in these

197

00:08:24,360 --> 00:08:22,810

long periods of time of course NASA is

198

00:08:25,740 --> 00:08:24,370

building a new vehicle you called the

199

00:08:27,270 --> 00:08:25,750

Orion and that vehicle is going to go

200

00:08:29,100 --> 00:08:27,280

beyond low-earth orbit to these other

201  
00:08:31,410 --> 00:08:29,110  
destinations like the moon asteroids and

202  
00:08:32,760 --> 00:08:31,420  
Mars so nASA has a bright future may

203  
00:08:34,650 --> 00:08:32,770  
take some time to get to these places

204  
00:08:37,500 --> 00:08:34,660  
but we continue to push in that

205  
00:08:40,710 --> 00:08:37,510  
direction thank you very much good luck

206  
00:08:42,690 --> 00:08:40,720  
up there and call us when you get back

207  
00:08:47,580 --> 00:08:42,700  
to earth I'll buy your hot dog and your

208  
00:08:53,360 --> 00:08:47,590  
pizza whatever you need sir sounds like