



1
00:00:05,670 --> 00:00:02,869
now we have here with us and in mission

2
00:00:09,509 --> 00:00:05,680
control uh the lead increment scientists

3
00:00:12,470 --> 00:00:09,519
for expedition 39 and 40. uh yuri guinea

4
00:00:14,549 --> 00:00:12,480
gennard ramirez who is again the lead

5
00:00:16,070 --> 00:00:14,559
scientist for these both expeditions and

6
00:00:17,590 --> 00:00:16,080
uh she's going to tell us a little bit

7
00:00:19,189 --> 00:00:17,600
about what has been going on for

8
00:00:20,950 --> 00:00:19,199
expedition 39 and what we can look

9
00:00:23,349 --> 00:00:20,960
forward to in expedition 30. thanks so

10
00:00:25,189 --> 00:00:23,359
much for joining us

11
00:00:26,710 --> 00:00:25,199
thank you very much brandi uh it's great

12
00:00:28,630 --> 00:00:26,720
to be here again talking about the

13
00:00:30,390 --> 00:00:28,640

science we're doing during increments 39

14

00:00:31,509 --> 00:00:30,400
and 40.

15

00:00:33,590 --> 00:00:31,519
first of all

16

00:00:35,590 --> 00:00:33,600
we had a very challenging first

17

00:00:37,110 --> 00:00:35,600
increment with a lot of

18

00:00:38,790 --> 00:00:37,120
systems vehicle

19

00:00:41,270 --> 00:00:38,800
issues that had to be dealt with

20

00:00:43,910 --> 00:00:41,280
but we were still able to accomplish

21

00:00:45,029 --> 00:00:43,920
great things during increment 39

22

00:00:47,510 --> 00:00:45,039
one of the

23

00:00:50,549 --> 00:00:47,520
investigations that was fairly new for

24

00:00:53,430 --> 00:00:50,559
us so brand new for us was jaxa's hybrid

25

00:00:55,189 --> 00:00:53,440
muscle training okay and uh we

26

00:00:57,510 --> 00:00:55,199

successfully completed that

27

00:00:58,869 --> 00:00:57,520

investigation with commander koichi

28

00:01:01,590 --> 00:00:58,879

wakata

29

00:01:03,990 --> 00:01:01,600

performing these measurements this

30

00:01:06,390 --> 00:01:04,000

investigation as you can see there's a

31

00:01:08,950 --> 00:01:06,400

picture there of the device it's

32

00:01:10,870 --> 00:01:08,960

a much smaller way of exercising

33

00:01:12,789 --> 00:01:10,880

and when

34

00:01:15,990 --> 00:01:12,799

we take the knowledge that we're gaining

35

00:01:18,149 --> 00:01:16,000

from the ability to exercise with a much

36

00:01:21,030 --> 00:01:18,159

smaller combination of equipment it

37

00:01:21,990 --> 00:01:21,040

allows us to possibly expand uh to

38

00:01:25,510 --> 00:01:22,000

future

39

00:01:27,749 --> 00:01:25,520

uh planetary incursions with a much less

40

00:01:30,230 --> 00:01:27,759

bulky equipment to have to carry around

41

00:01:33,030 --> 00:01:30,240

to maintain the health of our astronauts

42

00:01:35,030 --> 00:01:33,040

and our crew so by using that kind of

43

00:01:36,469 --> 00:01:35,040

patch on the elbow that we just saw that

44

00:01:38,710 --> 00:01:36,479

lets the crew exercise how does that

45

00:01:42,069 --> 00:01:38,720

work essentially it's a

46

00:01:44,389 --> 00:01:42,079

electrical impulses are

47

00:01:46,630 --> 00:01:44,399

delivered into the muscles and you have

48

00:01:49,030 --> 00:01:46,640

your eccentric and concentric concentric

49

00:01:50,550 --> 00:01:49,040

muscles as you move in and out in this

50

00:01:51,830 --> 00:01:50,560

case they use

51
00:01:53,990 --> 00:01:51,840
curls

52
00:01:55,590 --> 00:01:54,000
as a movement and as the crew member is

53
00:01:57,749 --> 00:01:55,600
exercising with the curls the electrical

54
00:01:58,709 --> 00:01:57,759
impulses are delivered into the muscle

55
00:02:00,149 --> 00:01:58,719
and

56
00:02:01,830 --> 00:02:00,159
they're taking measurements to see how

57
00:02:03,990 --> 00:02:01,840
well that preserves

58
00:02:05,670 --> 00:02:04,000
and conditions the muscle and we will

59
00:02:07,030 --> 00:02:05,680
have our last

60
00:02:09,190 --> 00:02:07,040
data collection after the crew member

61
00:02:12,229 --> 00:02:09,200
comes home with their their final post

62
00:02:13,750 --> 00:02:12,239
flight bdc as they call it uh for our

63
00:02:16,309 --> 00:02:13,760

collection down on the ground they'll

64

00:02:17,830 --> 00:02:16,319

measure the bulk of the muscle and and

65

00:02:20,150 --> 00:02:17,840

how well the strength

66

00:02:21,910 --> 00:02:20,160

uh and the toning worked and we'll see

67

00:02:23,990 --> 00:02:21,920

if this was a successful

68

00:02:26,070 --> 00:02:24,000

endeavor to help us you know incursion

69

00:02:28,309 --> 00:02:26,080

more into more compact devices and ways

70

00:02:29,270 --> 00:02:28,319

to exercise and this can be translated

71

00:02:35,990 --> 00:02:29,280

to

72

00:02:39,589 --> 00:02:37,750

possibilities like

73

00:02:41,830 --> 00:02:39,599

folks that may be bedridden that can't

74

00:02:43,589 --> 00:02:41,840

necessarily get out of bed and exercise

75

00:02:45,750 --> 00:02:43,599

you might be able to

76
00:02:47,270 --> 00:02:45,760
help apply some of these counter

77
00:02:49,030 --> 00:02:47,280
measurement

78
00:02:50,470 --> 00:02:49,040
devices to to help

79
00:02:52,949 --> 00:02:50,480
prevent muscle loss

80
00:02:53,670 --> 00:02:52,959
uh here on earth if we can path find

81
00:02:55,830 --> 00:02:53,680
that

82
00:02:57,509 --> 00:02:55,840
for the future so it's exciting okay so

83
00:02:59,830 --> 00:02:57,519
that's an example of one that's ending

84
00:03:01,750 --> 00:02:59,840
with expedition 39 as it ends

85
00:03:04,070 --> 00:03:01,760
is that the case very often or is there

86
00:03:06,149 --> 00:03:04,080
a big changeover as one expedition ends

87
00:03:07,990 --> 00:03:06,159
and another begins

88
00:03:09,750 --> 00:03:08,000

there certainly is uh

89

00:03:11,509 --> 00:03:09,760

there's a variety of of disciplines of

90

00:03:14,149 --> 00:03:11,519

course that we research in the human

91

00:03:15,750 --> 00:03:14,159

research category um we definitely have

92

00:03:19,589 --> 00:03:15,760

a very strong correlation to our crew

93

00:03:20,630 --> 00:03:19,599

members because we these experiments are

94

00:03:22,869 --> 00:03:20,640

essentially

95

00:03:25,589 --> 00:03:22,879

performed on the human body

96

00:03:28,869 --> 00:03:25,599

so you are tied to that crew member for

97

00:03:30,390 --> 00:03:28,879

that so that that marks a very a big

98

00:03:32,070 --> 00:03:30,400

correlation to our human research

99

00:03:34,470 --> 00:03:32,080

footprint there are other types of

100

00:03:36,630 --> 00:03:34,480

investigations that

101
00:03:37,589 --> 00:03:36,640
are obviously facility driven and we

102
00:03:40,070 --> 00:03:37,599
have

103
00:03:42,070 --> 00:03:40,080
plant experiments and other microbiology

104
00:03:44,309 --> 00:03:42,080
experiments and crystal growth

105
00:03:46,470 --> 00:03:44,319
and and so on that are not

106
00:03:48,309 --> 00:03:46,480
tied to to the expedition so switching a

107
00:03:49,910 --> 00:03:48,319
crew member

108
00:03:52,070 --> 00:03:49,920
it really isn't necessarily a direct

109
00:03:54,789 --> 00:03:52,080
impact as much as with the human

110
00:03:57,190 --> 00:03:54,799
research well how do you go about um

111
00:04:00,390 --> 00:03:57,200
i guess prioritizing experiments

112
00:04:01,990 --> 00:04:00,400
planning around these changeovers and

113
00:04:03,190 --> 00:04:02,000

you know as you mentioned

114

00:04:06,229 --> 00:04:03,200

operational

115

00:04:08,710 --> 00:04:07,350

so we have

116

00:04:11,429 --> 00:04:08,720

a multilateral

117

00:04:13,589 --> 00:04:11,439

forum with irt and this

118

00:04:15,190 --> 00:04:13,599

continues we

119

00:04:17,830 --> 00:04:15,200

work together uh

120

00:04:19,749 --> 00:04:17,840

very very uh early on the process

121

00:04:22,230 --> 00:04:19,759

starting with the rpwg and putting

122

00:04:24,390 --> 00:04:22,240

together the complement and as we get

123

00:04:26,950 --> 00:04:24,400

closer through the irt multilaterally we

124

00:04:28,310 --> 00:04:26,960

continue discussing the priorities for

125

00:04:30,150 --> 00:04:28,320

all the different partners and all the

126

00:04:32,150 --> 00:04:30,160

different investigations

127

00:04:34,390 --> 00:04:32,160

i can tell you this first increment has

128

00:04:35,749 --> 00:04:34,400

been challenging because we have to

129

00:04:37,909 --> 00:04:35,759

consider

130

00:04:39,430 --> 00:04:37,919

the human research aspects of of an

131

00:04:41,030 --> 00:04:39,440

investigation when the crew member comes

132

00:04:42,790 --> 00:04:41,040

home that's our last opportunity to

133

00:04:45,110 --> 00:04:42,800

collect that data

134

00:04:46,230 --> 00:04:45,120

and we have that window closing if you

135

00:04:48,390 --> 00:04:46,240

would

136

00:04:49,430 --> 00:04:48,400

and then we had spacex 3 overlapping

137

00:04:51,909 --> 00:04:49,440

with that

138

00:04:53,670 --> 00:04:51,919

which had a lot of time critical

139

00:04:55,350 --> 00:04:53,680

investigations that delivered

140

00:04:56,870 --> 00:04:55,360

time-sensitive

141

00:04:58,950 --> 00:04:56,880

research that had to be done within a

142

00:05:00,870 --> 00:04:58,960

certain amount of time

143

00:05:02,070 --> 00:05:00,880

so that's where we put together all

144

00:05:04,070 --> 00:05:02,080

these different

145

00:05:05,029 --> 00:05:04,080

constraints and make sure that we can

146

00:05:07,990 --> 00:05:05,039

meet

147

00:05:11,830 --> 00:05:08,000

everybody's timing needs and and of

148

00:05:13,270 --> 00:05:11,840

course the balance to to not um

149

00:05:14,870 --> 00:05:13,280

forget about the other investigations

150

00:05:16,629 --> 00:05:14,880

that may be a little more flexible but

151

00:05:18,469 --> 00:05:16,639

uh they're still important nonetheless

152

00:05:19,830 --> 00:05:18,479

sure well you mentioned hybrid training

153

00:05:21,670 --> 00:05:19,840

is one of the ones that went on during

154

00:05:23,510 --> 00:05:21,680

expedition 39 what are some of the other

155

00:05:24,790 --> 00:05:23,520

new and exciting things that y'all that

156

00:05:27,830 --> 00:05:24,800

y'all got started during this past

157

00:05:32,870 --> 00:05:30,390

we certainly had a very large compliment

158

00:05:33,909 --> 00:05:32,880

arriving with space63 and

159

00:05:35,510 --> 00:05:33,919

that

160

00:05:37,430 --> 00:05:35,520

would take uh quite a bit to go through

161

00:05:39,270 --> 00:05:37,440

all of them it's difficult to choose but

162

00:05:41,830 --> 00:05:39,280

we did have

163

00:05:43,909 --> 00:05:41,840

uh one exciting investigation called

164

00:05:45,270 --> 00:05:43,919

t-cell actin aging that came with uh

165

00:05:47,430 --> 00:05:45,280

spacex 3

166

00:05:49,029 --> 00:05:47,440

and this was a very quick

167

00:05:52,310 --> 00:05:49,039

activation that had to happen after the

168

00:05:55,029 --> 00:05:52,320

arrival of spacex 3 and this will help

169

00:05:58,150 --> 00:05:55,039

us understand better um

170

00:06:00,870 --> 00:05:58,160

immune uh impacts on the on the body due

171

00:06:04,629 --> 00:06:00,880

to space flight t-cell activation

172

00:06:06,790 --> 00:06:04,639

t-cell act in aging actin aging and what

173

00:06:09,749 --> 00:06:06,800

how did how does that work essentially

174

00:06:12,230 --> 00:06:09,759

they're looking at um

175

00:06:14,870 --> 00:06:12,240

folks folks were started to notice a

176
00:06:18,950 --> 00:06:14,880
trend uh you know i think they look back

177
00:06:20,870 --> 00:06:18,960
at some of the early space program

178
00:06:23,990 --> 00:06:20,880
flights and realized that

179
00:06:26,550 --> 00:06:24,000
close to 50 of the crew members that

180
00:06:28,309 --> 00:06:26,560
went on those apollo missions had an

181
00:06:30,469 --> 00:06:28,319
infection developed either

182
00:06:31,830 --> 00:06:30,479
uh during the flight or within a week

183
00:06:34,150 --> 00:06:31,840
after returning

184
00:06:35,350 --> 00:06:34,160
so that got some folks

185
00:06:36,790 --> 00:06:35,360
interested in that aspect and they

186
00:06:38,550 --> 00:06:36,800
started to study and they realized that

187
00:06:41,189 --> 00:06:38,560
microgravity has an impact on your

188
00:06:43,749 --> 00:06:41,199

immune system as a whole so

189

00:06:45,670 --> 00:06:43,759

they flew these particular t cells which

190

00:06:48,790 --> 00:06:45,680

are part of your immune system

191

00:06:50,629 --> 00:06:48,800

to try to understand a little bit better

192

00:06:53,510 --> 00:06:50,639

how does microgravity affect that

193

00:06:55,110 --> 00:06:53,520

function and uh we'll be looking forward

194

00:06:56,550 --> 00:06:55,120

to the results when spacex 3 comes back

195

00:06:57,990 --> 00:06:56,560

and see what we learned

196

00:06:59,589 --> 00:06:58,000

okay well i know you've got some

197

00:07:01,990 --> 00:06:59,599

interesting stuff planned for expedition

198

00:07:03,670 --> 00:07:02,000

40 as well i think opel's is maybe one

199

00:07:05,909 --> 00:07:03,680

of the ones we've heard about can you

200

00:07:08,390 --> 00:07:05,919

tell us a little bit about that

201
00:07:10,150 --> 00:07:08,400
yes definitely brandi switching gears to

202
00:07:11,510 --> 00:07:10,160
the external

203
00:07:13,189 --> 00:07:11,520
side of the house we have the

204
00:07:15,670 --> 00:07:13,199
international space station it's a it's

205
00:07:18,150 --> 00:07:15,680
a great platform to observe

206
00:07:20,629 --> 00:07:18,160
not only the cosmos and the universe but

207
00:07:21,670 --> 00:07:20,639
also back at our planet in in

208
00:07:23,749 --> 00:07:21,680
there's different kinds of

209
00:07:26,950 --> 00:07:23,759
investigations we have

210
00:07:27,990 --> 00:07:26,960
opals was delivered with spacex iii

211
00:07:29,270 --> 00:07:28,000
and we've

212
00:07:31,029 --> 00:07:29,280
initiated the checkout for that

213
00:07:34,150 --> 00:07:31,039

investigation and we'll be looking

214

00:07:36,390 --> 00:07:34,160
forward to do the actual science

215

00:07:38,790 --> 00:07:36,400
involved with it in this case

216

00:07:40,469 --> 00:07:38,800
we are exploring

217

00:07:42,830 --> 00:07:40,479
to gain a little more understanding of

218

00:07:46,390 --> 00:07:42,840
communication via

219

00:07:47,990 --> 00:07:46,400
laser so we'll be able to

220

00:07:49,909 --> 00:07:48,000
transmit more data

221

00:07:52,070 --> 00:07:49,919
rather than with traditional weight

222

00:07:54,230 --> 00:07:52,080
radio waves through through the laser

223

00:07:56,950 --> 00:07:54,240
it's optical communications and

224

00:07:58,790 --> 00:07:56,960
this particular

225

00:08:01,909 --> 00:07:58,800
device opals will

226

00:08:04,790 --> 00:08:01,919

lock uh when the space station is flying

227

00:08:06,550 --> 00:08:04,800

over the jpl it will lock in it's the

228

00:08:09,110 --> 00:08:06,560

laboratory one of the nasa centers in

229

00:08:11,029 --> 00:08:09,120

california yes thank you uh it will lock

230

00:08:12,950 --> 00:08:11,039

in uh communications with the opel's

231

00:08:15,110 --> 00:08:12,960

device then that ground station will

232

00:08:17,830 --> 00:08:15,120

sync up and once it's locked it will

233

00:08:19,589 --> 00:08:17,840

transmit data through the laser it's

234

00:08:20,950 --> 00:08:19,599

very sci-fi it sounds like a movie it

235

00:08:23,110 --> 00:08:20,960

does doesn't it it's like ooh

236

00:08:24,550 --> 00:08:23,120

communication via laser lots of fun

237

00:08:26,230 --> 00:08:24,560

stuff going on onboard the space station

238

00:08:28,390 --> 00:08:26,240

and actually that reminds me um i think

239

00:08:30,150 --> 00:08:28,400

one of the other life sciences

240

00:08:32,949 --> 00:08:30,160

experiments that's coming up is called

241

00:08:35,990 --> 00:08:32,959

force shoes is that right yes

242

00:08:38,070 --> 00:08:36,000

i mean that sounds interesting

243

00:08:39,430 --> 00:08:38,080

i can think of a nickname or two yes

244

00:08:41,430 --> 00:08:39,440

four shoes that

245

00:08:43,269 --> 00:08:41,440

interestingly enough is uh another human

246

00:08:45,350 --> 00:08:43,279

research investigation

247

00:08:47,350 --> 00:08:45,360

and we have as mentioned a lot of

248

00:08:50,710 --> 00:08:47,360

exercise devices on station to try to

249

00:08:52,790 --> 00:08:50,720

keep the crew conditioned and properly

250

00:08:54,949 --> 00:08:52,800

preventing the the muscle atrophy that

251
00:08:57,990 --> 00:08:54,959
happens during microgravity

252
00:08:59,190 --> 00:08:58,000
the force shoes uh is is a device that

253
00:09:01,590 --> 00:08:59,200
will measure

254
00:09:02,949 --> 00:09:01,600
um the dynamic loads as the crew member

255
00:09:05,829 --> 00:09:02,959
exercises

256
00:09:09,750 --> 00:09:05,839
essentially we had an a red which is one

257
00:09:12,550 --> 00:09:09,760
of the resistive exercise devices

258
00:09:13,829 --> 00:09:12,560
currently doesn't have the functionality

259
00:09:18,470 --> 00:09:13,839
to

260
00:09:20,790 --> 00:09:18,480
the force impacting so with these four

261
00:09:23,990 --> 00:09:20,800
shoes we should be able to collect the

262
00:09:28,710 --> 00:09:26,630
where we would use those for shoes yes

263
00:09:31,670 --> 00:09:28,720

why is the load information important

264

00:09:33,030 --> 00:09:31,680

because it will help

265

00:09:36,310 --> 00:09:33,040

the

266

00:09:39,030 --> 00:09:36,320

community understand how to better

267

00:09:42,310 --> 00:09:39,040

fine-tune that exercise protocol

268

00:09:44,790 --> 00:09:42,320

so as you exercise you are better

269

00:09:47,590 --> 00:09:44,800

able to understand do these more these

270

00:09:50,230 --> 00:09:47,600

exercises more less of that kind

271

00:09:51,750 --> 00:09:50,240

and the forces will translate to help um

272

00:09:53,269 --> 00:09:51,760

so you can kind of perfect exactly what

273

00:09:55,110 --> 00:09:53,279

you need them to do to stay healthy in

274

00:09:56,870 --> 00:09:55,120

space exactly and fine tune that and i

275

00:09:59,590 --> 00:09:56,880

could see applications in

276

00:10:01,030 --> 00:09:59,600

on earth sure for the same uh for the

277

00:10:02,870 --> 00:10:01,040

same

278

00:10:04,470 --> 00:10:02,880

capability for us to to fine-tune our

279

00:10:05,590 --> 00:10:04,480

workouts all right well i think we'll be

280

00:10:06,790 --> 00:10:05,600

uh hearing a little bit more about that

281

00:10:08,790 --> 00:10:06,800

later in the week when we have another

282

00:10:11,269 --> 00:10:08,800

cast come speak with us but before we go

283

00:10:14,550 --> 00:10:11,279

any other um uh experiments that you

284

00:10:18,150 --> 00:10:15,509

well we

285

00:10:19,509 --> 00:10:18,160

we have uh several happening as we

286

00:10:22,470 --> 00:10:19,519

mentioned is a very large complement

287

00:10:25,750 --> 00:10:22,480

profile we did um

288

00:10:27,590 --> 00:10:25,760

initiate uh hdev uh recently also with

289

00:10:29,750 --> 00:10:27,600

the space63 and that will continue

290

00:10:30,790 --> 00:10:29,760

that's high definition viewing of the

291

00:10:32,069 --> 00:10:30,800

earth

292

00:10:33,590 --> 00:10:32,079

we've got some attention i think a lot

293

00:10:35,190 --> 00:10:33,600

of people were interested in that i

294

00:10:37,110 --> 00:10:35,200

think it's it's generated some interest

295

00:10:38,949 --> 00:10:37,120

uh with the downlinks and and that's

296

00:10:41,430 --> 00:10:38,959

great to see the the beauty of the

297

00:10:43,750 --> 00:10:41,440

planet being broadcast to the entire

298

00:10:45,430 --> 00:10:43,760

world to be able to just click on it and

299

00:10:47,110 --> 00:10:45,440

look at it that's that is exciting that

300

00:10:48,069 --> 00:10:47,120

is very very exciting

301

00:10:49,590 --> 00:10:48,079

um

302

00:10:51,829 --> 00:10:49,600

during increment 40 we'll continue with

303

00:10:53,829 --> 00:10:51,839

some of that we also have a lot of work

304

00:10:56,310 --> 00:10:53,839

ahead with robonaut 2. we have

305

00:10:58,470 --> 00:10:56,320

legs coming for the robonaut right so

306

00:10:59,509 --> 00:10:58,480

we'll be looking forward to

307

00:11:03,269 --> 00:10:59,519

atta

308

00:11:05,670 --> 00:11:03,279

the the legs speaking of science fiction

309

00:11:07,110 --> 00:11:05,680

and going keeping with our science theme

310

00:11:08,630 --> 00:11:07,120

science fiction theme

311

00:11:11,350 --> 00:11:08,640

and check out some of the mobility

312

00:11:13,190 --> 00:11:11,360

capabilities for robonaut

313

00:11:15,110 --> 00:11:13,200

we'll have

314

00:11:16,310 --> 00:11:15,120

other investigations with the orb 2

315

00:11:18,949 --> 00:11:16,320

arrival

316

00:11:20,870 --> 00:11:18,959

we will continue our cubesat deployers

317

00:11:22,870 --> 00:11:20,880

okay then our cubesat deployers will

318

00:11:25,190 --> 00:11:22,880

bring a suite of satellites uh to

319

00:11:27,269 --> 00:11:25,200

continue uh exploring the that

320

00:11:28,550 --> 00:11:27,279

capability and

321

00:11:30,389 --> 00:11:28,560

we're looking forward to orb 2

322

00:11:34,150 --> 00:11:30,399

delivering a few i think the image right

323

00:11:35,829 --> 00:11:34,160

now um we'll showing the orb one set of

324

00:11:37,590 --> 00:11:35,839

satellites and deployment of one of the

325

00:11:39,670 --> 00:11:37,600

satellites there so we're looking

326

00:11:40,870 --> 00:11:39,680

forward to more okay more of those well

327

00:11:42,069 --> 00:11:40,880

it sounds like there's lots to look

328

00:11:43,829 --> 00:11:42,079

forward to and probably will be hearing

329

00:11:45,509 --> 00:11:43,839

more from you in the future

330

00:11:49,110 --> 00:11:45,519

thanks so much for joining us again this

331

00:11:51,269 --> 00:11:49,120

is yuri ganart ramirez who is the lead

332

00:11:53,670 --> 00:11:51,279

increment scientist for expedition 39

333

00:11:55,670 --> 00:11:53,680

and 40 and again 39 wrapping up today

334

00:11:58,629 --> 00:11:55,680

with the

335

00:12:00,870 --> 00:11:58,639

departure of the soyuz tma-11m with its

336

00:12:02,550 --> 00:12:00,880

crew member going back to earth to land

337

00:12:03,829 --> 00:12:02,560

in kazakhstan

338

00:12:04,949 --> 00:12:03,839

this evening

339

00:12:06,230 --> 00:12:04,959

that's all for now we'll go back to our