



esa

European Space Agency

agenzia spaziale italiana

AGENZIA SPAZIALE ITALIANA  
ITALIAN SPACE AGENCY

1  
00:00:09,030 --> 00:00:03,830  
station this is melanie cowan at s-tech

2  
00:00:17,750 --> 00:00:11,190  
and melanie and aztec great to hear you

3  
00:00:23,509 --> 00:00:20,070  
well thank you for having us samantha i

4  
00:00:25,910 --> 00:00:23,519  
join you together with madrid printo and

5  
00:00:28,470 --> 00:00:25,920  
vienna we have many students that are

6  
00:00:31,029 --> 00:00:28,480  
anxious to hear about mission x and ask

7  
00:00:37,990 --> 00:00:31,039  
you some questions so please open the

8  
00:00:42,549 --> 00:00:40,790  
it's it's wonderful to have you all uh

9  
00:00:45,590 --> 00:00:42,559  
all there in those different locations

10  
00:00:48,150 --> 00:00:45,600  
and uh paxy says hello too by the way

11  
00:00:49,910 --> 00:00:48,160  
and before we start i heard that

12  
00:00:52,150 --> 00:00:49,920  
something wonderful happened today that

13  
00:00:54,150 --> 00:00:52,160

astro charlie made it to the moon thanks

14

00:01:05,750 --> 00:00:54,160

to all the points that you

15

00:01:10,710 --> 00:01:07,670

and if you're ready for some questions

16

00:01:14,550 --> 00:01:10,720

samantha i would like to go to madrid

17

00:01:17,749 --> 00:01:14,560

madrid your first question please

18

00:01:20,310 --> 00:01:17,759

hi it's paula i'm 11

19

00:01:26,789 --> 00:01:20,320

and here is my question where do you eat

20

00:01:33,510 --> 00:01:30,870

hello paola um you know it's a way of uh

21

00:01:34,710 --> 00:01:33,520

saving weight and mass when we launch

22

00:01:37,749 --> 00:01:34,720

food

23

00:01:40,630 --> 00:01:37,759

by dehydrating it we can save launching

24

00:01:42,230 --> 00:01:40,640

up the water and we have plenty of water

25

00:01:43,990 --> 00:01:42,240

on board we actually continuously

26

00:01:45,990 --> 00:01:44,000

recycle it

27

00:01:48,950 --> 00:01:46,000

so we don't have to bring up extra water

28

00:01:51,990 --> 00:01:48,960

from earth and so that way we save plus

29

00:01:53,830 --> 00:01:52,000

it's a way for the food to um to be

30

00:02:01,109 --> 00:01:53,840

eatable for a longer time it's a which

31

00:02:06,870 --> 00:02:03,350

thank you samantha madrid your next

32

00:02:06,880 --> 00:02:30,309

hello my name is

33

00:02:35,589 --> 00:02:33,509

well um we don't have a doctor on board

34

00:02:37,990 --> 00:02:35,599

right now although sometimes we do

35

00:02:40,309 --> 00:02:38,000

because some astronauts are doctor

36

00:02:41,830 --> 00:02:40,319

our doctors however none of us is a

37

00:02:42,630 --> 00:02:41,840

doctor right now

38

00:02:45,190 --> 00:02:42,640

but

39

00:02:47,509 --> 00:02:45,200

most of us have a training to be crew

40

00:02:49,589 --> 00:02:47,519

medical officers which doesn't mean that

41

00:02:52,070 --> 00:02:49,599

we're doctors but it means that we are

42

00:02:54,790 --> 00:02:52,080

trained to perform some simple medical

43

00:02:57,350 --> 00:02:54,800

procedures um and then we are all of

44

00:02:59,430 --> 00:02:57,360

course trained to react in case of a you

45

00:03:02,229 --> 00:02:59,440

know a serious emergency like somebody's

46

00:03:04,630 --> 00:03:02,239

heart stops we can all administer

47

00:03:07,110 --> 00:03:04,640

resuscitation cpr

48

00:03:10,229 --> 00:03:07,120

and then on council on the ground in the

49

00:03:12,550 --> 00:03:10,239

um control centers we have doctors who

50

00:03:14,869 --> 00:03:12,560

are either on consoles or on call and we

51  
00:03:17,110 --> 00:03:14,879  
can always get a hold of them in case we

52  
00:03:23,110 --> 00:03:17,120  
need so that they can advise on a

53  
00:03:30,949 --> 00:03:26,309  
thank you we're now going to sprinto for

54  
00:03:36,550 --> 00:03:34,710  
hi samantha and else at 12 years old and

55  
00:03:46,470 --> 00:03:36,560  
this is my question

56  
00:03:50,070 --> 00:03:48,149  
well first of all hello to a special

57  
00:03:52,470 --> 00:03:50,080  
hello to trento

58  
00:03:54,070 --> 00:03:52,480  
um because it's a city i know very well

59  
00:03:55,750 --> 00:03:54,080  
i've lived in toronto for a year when i

60  
00:03:57,830 --> 00:03:55,760  
went to school and i grew up in the

61  
00:03:58,869 --> 00:03:57,840  
region so especially alone

62  
00:04:01,270 --> 00:03:58,879  
um

63  
00:04:03,910 --> 00:04:01,280

so the menu of our mission the the main

64

00:04:06,550 --> 00:04:03,920

part of our menu is uh produced selected

65

00:04:09,910 --> 00:04:06,560

and produced at the nasa food lab in

66

00:04:11,910 --> 00:04:09,920

houston uh however we also get to bring

67

00:04:15,190 --> 00:04:11,920

up a little bit of special food we call

68

00:04:16,949 --> 00:04:15,200

it bonus food and that is selected by us

69

00:04:19,909 --> 00:04:16,959

by the astronauts and prepared to our

70

00:04:23,270 --> 00:04:19,919

taste and so the the bonus food that i

71

00:04:26,070 --> 00:04:23,280

selected was uh produced in uh in italy

72

00:04:30,150 --> 00:04:26,080

um and i put together the menus together

73

00:04:33,110 --> 00:04:30,160

with a nutritionist and a um a cook with

74

00:04:35,189 --> 00:04:33,120

whom we share um

75

00:04:38,310 --> 00:04:35,199

you know the vision that food is really

76  
00:04:40,550 --> 00:04:38,320  
really important to make us stay healthy

77  
00:04:42,230 --> 00:04:40,560  
and feel well especially you know in a

78  
00:04:44,469 --> 00:04:42,240  
stressful environment like the space

79  
00:04:47,030 --> 00:04:44,479  
station so we have put together really

80  
00:04:48,950 --> 00:04:47,040  
really healthy ingredients but all those

81  
00:04:54,870 --> 00:04:48,960  
dishes are also delicious and the

82  
00:05:23,029 --> 00:04:57,350  
thank you and friends your second

83  
00:05:28,070 --> 00:05:25,350  
throughout the mission we have uh

84  
00:05:30,150 --> 00:05:28,080  
some psychological assistant assistants

85  
00:05:31,909 --> 00:05:30,160  
every two weeks we have a short

86  
00:05:34,230 --> 00:05:31,919  
conference 15 minutes with a

87  
00:05:35,909 --> 00:05:34,240  
psychologist with whom we can talk and

88  
00:05:38,150 --> 00:05:35,919

they ask questions and they make sure

89

00:05:40,310 --> 00:05:38,160

that you know we um as you know

90

00:05:42,070 --> 00:05:40,320

individuals and also as a crew are

91

00:05:43,990 --> 00:05:42,080

functioning well from a psychological

92

00:05:45,430 --> 00:05:44,000

point of view and then if we had the

93

00:05:46,550 --> 00:05:45,440

need of course we could talk to them

94

00:05:47,350 --> 00:05:46,560

more often

95

00:05:52,790 --> 00:05:47,360

um

96

00:05:55,590 --> 00:05:52,800

work or talk to psychologists that much

97

00:05:57,510 --> 00:05:55,600

um but we we we do a you know training

98

00:05:59,590 --> 00:05:57,520

that helps us in in terms of team

99

00:06:01,350 --> 00:05:59,600

building and learning to work with each

100

00:06:03,909 --> 00:06:01,360

other learning to know and appreciate

101  
00:06:06,150 --> 00:06:03,919  
each other before we come up to space

102  
00:06:13,189 --> 00:06:06,160  
and and and work for a long time in in

103  
00:06:18,550 --> 00:06:15,510  
well thank you samantha we're now going

104  
00:06:23,909 --> 00:06:18,560  
for friends in siena sienna please ask

105  
00:06:23,919 --> 00:06:39,670  
hello my name is

106  
00:06:48,950 --> 00:06:42,870  
can you produce the octagon above the

107  
00:06:54,870 --> 00:06:52,070  
we do a little bit of both uh sometimes

108  
00:06:56,629 --> 00:06:54,880  
cargo ships resupply oxygen they bring

109  
00:06:57,749 --> 00:06:56,639  
us some more ox they bring us some more

110  
00:07:00,710 --> 00:06:57,759  
oxygen

111  
00:07:02,710 --> 00:07:00,720  
however we also have equipment the

112  
00:07:04,550 --> 00:07:02,720  
russian segment has one and we have one

113  
00:07:07,350 --> 00:07:04,560

here on the non-russian part of the

114

00:07:10,550 --> 00:07:07,360

space station that can actually produce

115

00:07:13,189 --> 00:07:10,560

oxygen by electrolysis of water they

116

00:07:14,870 --> 00:07:13,199

split the water and they you know those

117

00:07:17,110 --> 00:07:14,880

pieces of equipment they can split the

118

00:07:19,830 --> 00:07:17,120

water and and separate the hydrogen from

119

00:07:26,950 --> 00:07:19,840

the oxygen and that's how we can make

120

00:07:32,950 --> 00:07:29,589

thank you vienna your next question

121

00:07:32,960 --> 00:07:54,150

hello my name is

122

00:08:07,909 --> 00:08:02,309

that

123

00:08:09,830 --> 00:08:07,919

collide with uh with another object on

124

00:08:12,550 --> 00:08:09,840

our flight path

125

00:08:15,189 --> 00:08:12,560

but there's a lot of care taken to make

126

00:08:18,950 --> 00:08:15,199

sure that that does not happen all of

127

00:08:21,270 --> 00:08:18,960

big objects that are in in orbit

128

00:08:23,029 --> 00:08:21,280

near our orbit are tracked we we know

129

00:08:25,350 --> 00:08:23,039

where they are there are radars on the

130

00:08:26,469 --> 00:08:25,360

ground that look at them and track them

131

00:08:28,469 --> 00:08:26,479

all the time

132

00:08:30,150 --> 00:08:28,479

and if there is a risk of collision if

133

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

it looks that they will come anywhere

134

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

close to the space station we can do

135

00:08:38,310 --> 00:08:36,000

what we call a debris avoidance maneuver

136

00:08:40,070 --> 00:08:38,320

which really means that we turn on our

137

00:08:42,070 --> 00:08:40,080

engines here on the space station to

138

00:08:44,310 --> 00:08:42,080

change our orbit a little bit so we will

139

00:08:46,070 --> 00:08:44,320

get out of the way and we have to do

140

00:08:48,230 --> 00:08:46,080

that because you know we the space

141

00:08:50,790 --> 00:08:48,240

station can move out of the way but

142

00:08:52,870 --> 00:08:50,800

those objects are usually dead objects

143

00:08:59,829 --> 00:08:52,880

they cannot maneuver so they will not

144

00:09:07,110 --> 00:09:02,470

well thank you samantha we're now going

145

00:09:23,110 --> 00:09:07,120

back to madrid madrid your next question

146

00:09:27,509 --> 00:09:24,630

well here's the thing

147

00:09:29,750 --> 00:09:27,519

on uh in terms of work on the you know

148

00:09:32,710 --> 00:09:29,760

work and life on the space station we

149

00:09:34,150 --> 00:09:32,720

work on a 24 hour clock just like we do

150

00:09:36,550 --> 00:09:34,160

on earth

151

00:09:39,509 --> 00:09:36,560

however it's artificial we don't really

152

00:09:42,550 --> 00:09:39,519

have you know a day and night cycle of

153

00:09:45,190 --> 00:09:42,560

24 hours like we do on earth in fact we

154

00:09:47,910 --> 00:09:45,200

circle the earth because we go so fast

155

00:09:51,910 --> 00:09:47,920

we circle the earth once every 90

156

00:09:56,230 --> 00:09:51,920

minutes so in a way every earth day is

157

00:09:59,190 --> 00:09:56,240

15 to 16 days here on iss we get 15 to

158

00:10:01,350 --> 00:09:59,200

16 times per day is sunrise and the

159

00:10:03,670 --> 00:10:01,360

sunset but of course we don't wake up

160

00:10:11,829 --> 00:10:03,680

and go to sleep 16 times a day we work

161

00:10:25,509 --> 00:10:14,550

thank you and madrid your next question

162

00:10:39,190 --> 00:10:33,910

exercise

163

00:10:41,269 --> 00:10:39,200

extremely important just as it is for

164

00:10:44,230 --> 00:10:41,279

for anybody on earth

165

00:10:47,110 --> 00:10:44,240

but for us it's it's so critical that we

166

00:10:49,590 --> 00:10:47,120

never skip a day uh we work out for a

167

00:10:52,310 --> 00:10:49,600

couple of hours every single day and the

168

00:10:54,470 --> 00:10:52,320

reason is that we are you know we are in

169

00:10:56,790 --> 00:10:54,480

weightlessness so our muscles and our

170

00:10:59,910 --> 00:10:56,800

bones as you i'm sure you've learned

171

00:11:02,069 --> 00:10:59,920

during your mission x uh program

172

00:11:04,310 --> 00:11:02,079

would debilitate we would lose muscle

173

00:11:05,269 --> 00:11:04,320

mass and bone mass if we didn't exercise

174

00:11:07,990 --> 00:11:05,279

a lot

175

00:11:10,550 --> 00:11:08,000

so we have different types of exercise

176  
00:11:11,990 --> 00:11:10,560  
for cardiovascular we have a bike which

177  
00:11:13,670 --> 00:11:12,000  
is kind of a cool bike it does not have

178  
00:11:15,509 --> 00:11:13,680  
a seat

179  
00:11:17,430 --> 00:11:15,519  
and a treadmill which is also pretty

180  
00:11:19,829 --> 00:11:17,440  
cool it's on the wall so we run on the

181  
00:11:21,990 --> 00:11:19,839  
wall and those are really important for

182  
00:11:24,069 --> 00:11:22,000  
your heart and resistance but for

183  
00:11:25,750 --> 00:11:24,079  
example the impact of your feet on the

184  
00:11:28,150 --> 00:11:25,760  
treadmill are also important to

185  
00:11:30,230 --> 00:11:28,160  
stimulate your bones so that you do not

186  
00:11:32,389 --> 00:11:30,240  
lose a lot of bone and then we do

187  
00:11:34,470 --> 00:11:32,399  
resistive exercise which is kind of like

188  
00:11:36,710 --> 00:11:34,480

weight lifting except that of course

189

00:11:39,030 --> 00:11:36,720

weight is meaningless in space so we

190

00:11:41,990 --> 00:11:39,040

have a special machine that has vacuum

191

00:11:49,829 --> 00:11:42,000

cylinders and we can work out on it just

192

00:12:21,829 --> 00:11:53,190

thank you for now going back to sprinto

193

00:12:26,069 --> 00:12:23,990

okay i think you have asked me and it's

194

00:12:28,310 --> 00:12:26,079

not about i'm sure you you have asked it

195

00:12:30,310 --> 00:12:28,320

in in a great way the audio quality is

196

00:12:33,350 --> 00:12:30,320

not always great today so i think you

197

00:12:34,550 --> 00:12:33,360

have asked me if the um food tastes

198

00:12:35,590 --> 00:12:34,560

different

199

00:12:37,990 --> 00:12:35,600

um

200

00:12:41,269 --> 00:12:38,000

i have heard very often from astronauts

201  
00:12:43,509 --> 00:12:41,279  
who said that that their taste changed a

202  
00:12:45,190 --> 00:12:43,519  
lot in space personally you know we're

203  
00:12:46,230 --> 00:12:45,200  
all different and that's a wonderful

204  
00:12:48,230 --> 00:12:46,240  
thing

205  
00:12:50,389 --> 00:12:48,240  
personally i have not noticed that i

206  
00:12:52,790 --> 00:12:50,399  
tend to like the same things that i

207  
00:12:54,310 --> 00:12:52,800  
liked on earth i tend to like them here

208  
00:12:56,710 --> 00:12:54,320  
on orbit

209  
00:12:58,790 --> 00:12:56,720  
so i guess in in my in my case the

210  
00:13:04,629 --> 00:12:58,800  
question the answer is no it did not

211  
00:13:08,230 --> 00:13:07,030  
thank you samantha and indeed sprinto's

212  
00:13:10,870 --> 00:13:08,240  
audio

213  
00:13:32,710 --> 00:13:10,880

is struggling today but did you go back

214

00:13:38,389 --> 00:13:35,590

and the question was samantha

215

00:13:44,230 --> 00:13:38,399

in what way your physical processes

216

00:13:48,710 --> 00:13:45,829

okay yes that's a that's a very

217

00:13:52,949 --> 00:13:48,720

interesting question

218

00:13:56,069 --> 00:13:52,959

in terms of sleeping and eating in in

219

00:13:58,230 --> 00:13:56,079

many ways it's surprisingly the same

220

00:13:59,509 --> 00:13:58,240

i find myself

221

00:14:01,910 --> 00:13:59,519

you know

222

00:14:03,910 --> 00:14:01,920

digesting very well up here sleeping

223

00:14:06,310 --> 00:14:03,920

very well of course it's a little bit

224

00:14:07,670 --> 00:14:06,320

different in in the mechanics of it of

225

00:14:09,509 --> 00:14:07,680

course you know when you sleep you do

226

00:14:11,829 --> 00:14:09,519

not sleep in a bed we sleep in a

227

00:14:13,509 --> 00:14:11,839

sleeping bag and we kind of like float

228

00:14:15,670 --> 00:14:13,519

or some of us like to tie themselves

229

00:14:19,110 --> 00:14:15,680

down i like to just float in in my

230

00:14:21,030 --> 00:14:19,120

little cabin which is my place to sleep

231

00:14:22,949 --> 00:14:21,040

and it and i kind of like it not not

232

00:14:24,790 --> 00:14:22,959

having pressure on my on my body and

233

00:14:27,189 --> 00:14:24,800

just float

234

00:14:29,670 --> 00:14:27,199

eating again in terms of swallowing and

235

00:14:32,069 --> 00:14:29,680

digestion it works just the same but of

236

00:14:33,750 --> 00:14:32,079

course as we mentioned before

237

00:14:37,110 --> 00:14:33,760

food is different you know we have to

238

00:14:38,790 --> 00:14:37,120

rehydrate it it comes out of pouches um

239

00:14:40,550 --> 00:14:38,800

you know we have to take care that it

240

00:14:42,550 --> 00:14:40,560

doesn't you know float around or we

241

00:14:46,150 --> 00:14:42,560

don't we have a lot of

242

00:14:48,230 --> 00:14:46,160

you know food getting out of control

243

00:14:50,710 --> 00:14:48,240

and then in terms of working you have to

244

00:14:53,350 --> 00:14:50,720

learn you know to set up your workspace

245

00:14:55,269 --> 00:14:53,360

to make sure that you um take care not

246

00:14:57,189 --> 00:14:55,279

to lose things everything you have to

247

00:14:58,790 --> 00:14:57,199

velcro somewhere or use a bungee to

248

00:15:00,389 --> 00:14:58,800

restrain it and at the beginning is a

249

00:15:02,069 --> 00:15:00,399

little bit difficult because we are not

250

00:15:05,110 --> 00:15:02,079

used to it and so at the beginning you

251  
00:15:06,949 --> 00:15:05,120  
lose things um and you know it's hard to

252  
00:15:09,430 --> 00:15:06,959  
take to keep everything under control

253  
00:15:15,269 --> 00:15:09,440  
but then with practice like everything

254  
00:15:19,350 --> 00:15:17,750  
thank you very much we're now going back

255  
00:15:23,509 --> 00:15:19,360  
to vienna

256  
00:15:23,519 --> 00:15:34,710  
hello my name is

257  
00:15:39,829 --> 00:15:37,269  
i'm sorry vienna but your audio has

258  
00:15:41,829 --> 00:15:39,839  
broken up the question is from michelle

259  
00:15:44,310 --> 00:15:41,839  
who's eight years old

260  
00:15:45,910 --> 00:15:44,320  
did you bring up some music with you to

261  
00:15:49,269 --> 00:15:45,920  
the space station

262  
00:15:55,110 --> 00:15:49,279  
in your opinion what music fits best for

263  
00:16:01,509 --> 00:15:59,189

oh i brought up a lot of uh music um and

264

00:16:04,470 --> 00:16:01,519

i brought up all kinds of music because

265

00:16:07,189 --> 00:16:04,480

i wanted to be ready for any mood and

266

00:16:09,910 --> 00:16:07,199

any situation and i don't know about you

267

00:16:12,230 --> 00:16:09,920

but with you know for me with music it's

268

00:16:14,310 --> 00:16:12,240

kind of like that i mean i uh you know

269

00:16:16,310 --> 00:16:14,320

from you know on a day i will feel like

270

00:16:18,710 --> 00:16:16,320

listening to one type of music on

271

00:16:20,550 --> 00:16:18,720

another day to another type of music you

272

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

know we are up here for six months it's

273

00:16:25,509 --> 00:16:23,600

a long time um and and every day is a

274

00:16:27,910 --> 00:16:25,519

little bit different your mood changes

275

00:16:30,150 --> 00:16:27,920

what you do changes this is really our

276

00:16:32,069 --> 00:16:30,160

our home so you imagine yourself for six

277

00:16:33,990 --> 00:16:32,079

months you probably are going to listen

278

00:16:35,350 --> 00:16:34,000

to different types of music

279

00:16:37,670 --> 00:16:35,360

and so it's the same here sometimes you

280

00:16:39,030 --> 00:16:37,680

want like a quiet music just to relax

281

00:16:40,870 --> 00:16:39,040

sometimes you want something with a lot

282

00:16:43,509 --> 00:16:40,880

of rhythm because you know you you want

283

00:16:45,590 --> 00:16:43,519

to be cheered up it depends but but i

284

00:16:51,590 --> 00:16:45,600

think music is very important for your

285

00:16:55,670 --> 00:16:53,430

thank you very much samantha we're

286

00:16:58,389 --> 00:16:55,680

almost out of time so i'm going to ask

287

00:17:00,629 --> 00:16:58,399

the less the last question from vienna

288

00:17:04,390 --> 00:17:00,639

which was sometimes we are

289

00:17:06,949 --> 00:17:04,400

quarreling in our school and at home

290

00:17:08,789 --> 00:17:06,959

do you often disagree about a topic on

291

00:17:14,870 --> 00:17:08,799

the space station and this was from

292

00:17:20,069 --> 00:17:16,470

yeah that's that's a very interesting

293

00:17:21,990 --> 00:17:20,079

question um i don't we do not quarrel um

294

00:17:23,909 --> 00:17:22,000

you know we i think we are

295

00:17:26,549 --> 00:17:23,919

we're professionals and and we just

296

00:17:28,789 --> 00:17:26,559

discuss things um and most of the time

297

00:17:30,870 --> 00:17:28,799

we just uh you know evaluate what's what

298

00:17:32,789 --> 00:17:30,880

are the pros and cons of different uh

299

00:17:34,549 --> 00:17:32,799

ways of doing things and then we come up

300

00:17:36,630 --> 00:17:34,559

with with a consensus and we decide

301

00:17:38,390 --> 00:17:36,640

we're going to do it this way and but of

302

00:17:40,710 --> 00:17:38,400

course on board we also have a commander

303

00:17:42,549 --> 00:17:40,720

so in the end the commander can make a

304

00:17:44,789 --> 00:17:42,559

decision and

305

00:17:47,110 --> 00:17:44,799

you know it it's very important when you

306

00:17:49,270 --> 00:17:47,120

work in a team to have a good leader and

307

00:17:51,029 --> 00:17:49,280

to have good followers so in the end if

308

00:17:53,750 --> 00:17:51,039

the commander who is the leader makes a

309

00:17:56,789 --> 00:17:53,760

decision where everybody else is is

310

00:17:58,630 --> 00:17:56,799

responsible to be a good follower and to

311

00:18:05,510 --> 00:17:58,640

embrace that decision and to make it

312

00:18:10,230 --> 00:18:07,830

well thank you very much samantha i hear

313

00:18:12,150 --> 00:18:10,240

we're almost at the end of our time so

314

00:18:14,390 --> 00:18:12,160

i'd like to thank you for your time and

315

00:18:15,909 --> 00:18:14,400

give you the opportunity to say goodbye

316

00:18:20,630 --> 00:18:15,919

to madrid

317

00:18:25,510 --> 00:18:24,230

hey madrid trento and vienna how

318

00:18:28,310 --> 00:18:25,520

wonderful guys that you have

319

00:18:30,230 --> 00:18:28,320

participated in mission x i know that

320

00:18:33,669 --> 00:18:30,240

you have learned so much you have worked

321

00:18:34,630 --> 00:18:33,679

hard so i'm incredibly incredibly proud

322

00:18:36,390 --> 00:18:34,640

of you

323

00:18:39,110 --> 00:18:36,400

i think you've learned things that will

324

00:18:40,549 --> 00:18:39,120

accompany you throughout your life

325

00:18:41,990 --> 00:18:40,559

you know just just

326

00:18:44,070 --> 00:18:42,000

hold on to those things that you have

327

00:18:45,990 --> 00:18:44,080

learned share them with your peers with

328

00:18:48,789 --> 00:18:46,000

your friends and

329

00:18:50,950 --> 00:18:48,799

keep your passion for space and i hope

330

00:18:52,950 --> 00:18:50,960

that many of you maybe one day i will

331

00:18:54,870 --> 00:18:52,960

meet as as colleagues in the space

332

00:19:05,350 --> 00:18:54,880

business that would be wonderful so

333

00:19:10,789 --> 00:19:08,070

well thank you samantha everyone in the

334

00:19:13,750 --> 00:19:10,799

country they're cheering and smiling and

335

00:19:15,990 --> 00:19:13,760

i think you have over 700 half students

336

00:19:18,789 --> 00:19:16,000

today they've had a wonderful day and