



CVHS

CLEANING MATH

EXIT

esa

blue dot

European Space Agency
esa

SET

1
00:00:09,110 --> 00:00:03,990
station this is houston are you ready

2
00:00:13,749 --> 00:00:11,030
houston this is station we are ready for

3
00:00:22,230 --> 00:00:16,150
issa this is mission control houston

4
00:00:30,150 --> 00:00:25,349
station this is jill the esc

5
00:00:30,160 --> 00:00:44,630
hello eac i can hear you loud and clear

6
00:00:50,389 --> 00:00:47,510
good day alex good day we are here esc

7
00:00:52,869 --> 00:00:50,399
with lots of space enthusiasts and here

8
00:00:54,950 --> 00:00:52,879
comes the first question from susana

9
00:00:56,830 --> 00:00:54,960
i can hear you

10
00:00:59,670 --> 00:00:56,840
and i'd like to ask

11
00:01:02,069 --> 00:00:59,680
you what does a volcanologist do in

12
00:01:03,990 --> 00:01:02,079
space or are you the perfect example of

13
00:01:08,310 --> 00:01:04,000

a successful change of careers and how

14

00:01:13,750 --> 00:01:10,789

well i guess i did successfully change

15

00:01:15,590 --> 00:01:13,760

my career as my colleague samantha

16

00:01:17,270 --> 00:01:15,600

always said it she changed from the

17

00:01:19,270 --> 00:01:17,280

second best job in the world to the best

18

00:01:20,950 --> 00:01:19,280

job in the world that's how i see it as

19

00:01:23,030 --> 00:01:20,960

well but actually

20

00:01:24,630 --> 00:01:23,040

i do still

21

00:01:26,550 --> 00:01:24,640

work a little bit in

22

00:01:28,710 --> 00:01:26,560

as a volcanologist because up here i can

23

00:01:30,550 --> 00:01:28,720

see volcanoes in a in a completely

24

00:01:33,109 --> 00:01:30,560

different way than i could see them back

25

00:01:35,910 --> 00:01:33,119

on earth and now i actually uh see them

26

00:01:38,069 --> 00:01:35,920

glow at night aetna in italy and then

27

00:01:39,030 --> 00:01:38,079

stromboli i can see them glow at night

28

00:01:41,190 --> 00:01:39,040

uh

29

00:01:43,270 --> 00:01:41,200

with the naked eye and take pictures and

30

00:01:44,230 --> 00:01:43,280

that's actually uh

31

00:01:46,310 --> 00:01:44,240

to me

32

00:01:47,510 --> 00:01:46,320

a pretty amazing thing that we can i can

33

00:01:49,510 --> 00:01:47,520

see this from

34

00:01:51,990 --> 00:01:49,520

all from up here and

35

00:02:01,030 --> 00:01:52,000

we do have even a small little science

36

00:02:05,910 --> 00:02:03,270

hi alex my name is kathry and my

37

00:02:08,550 --> 00:02:05,920

question is what is the maximum period

38

00:02:11,350 --> 00:02:08,560

of stay in the iss now

39

00:02:14,070 --> 00:02:11,360

and what alternations should be made to

40

00:02:17,030 --> 00:02:14,080

either physical or mental well-being in

41

00:02:23,830 --> 00:02:17,040

order to extend that period or even

42

00:02:27,430 --> 00:02:25,270

you know that's a very good question

43

00:02:29,990 --> 00:02:27,440

that we're actually just trying to

44

00:02:32,710 --> 00:02:30,000

answer ourselves uh because the maximum

45

00:02:35,110 --> 00:02:32,720

time for people that had stayed in space

46

00:02:37,910 --> 00:02:35,120

was always around one year and we have

47

00:02:39,750 --> 00:02:37,920

made tremendous success in actually

48

00:02:41,589 --> 00:02:39,760

keeping our bodies in better shape now

49

00:02:43,350 --> 00:02:41,599

we have like training devices that keep

50

00:02:45,110 --> 00:02:43,360

our muscles actually i just had an

51
00:02:47,430 --> 00:02:45,120
experiment today where i measured my

52
00:02:50,070 --> 00:02:47,440
muscle circumference to check if those

53
00:02:51,830 --> 00:02:50,080
devices are working and actually uh we

54
00:02:53,750 --> 00:02:51,840
see that we actually build muscle up

55
00:02:55,670 --> 00:02:53,760
here so that's uh that was one of the

56
00:02:58,309 --> 00:02:55,680
the big problems in the early times of

57
00:03:01,190 --> 00:02:58,319
space flight now it shifts more towards

58
00:03:03,990 --> 00:03:01,200
how long uh can we stay and not get sick

59
00:03:07,030 --> 00:03:04,000
like in terms of nutrients uh how how do

60
00:03:09,670 --> 00:03:07,040
our eyes maybe uh change how they work

61
00:03:12,390 --> 00:03:09,680
in space and the more we look at it the

62
00:03:15,350 --> 00:03:12,400
the more we see it is amazing that our

63
00:03:18,390 --> 00:03:15,360

body was actually made for a 1g gravity

64

00:03:22,070 --> 00:03:18,400

environment but we can live up here

65

00:03:24,070 --> 00:03:22,080

well i don't see a theoretical limit and

66

00:03:25,830 --> 00:03:24,080

we also developed the technologies like

67

00:03:27,830 --> 00:03:25,840

we we we made sure that we have life

68

00:03:30,309 --> 00:03:27,840

support systems that can support a

69

00:03:33,910 --> 00:03:30,319

longer stays in space several years when

70

00:03:35,990 --> 00:03:33,920

we fly to mars and i do not see any real

71

00:03:36,949 --> 00:03:36,000

problem in the way there

72

00:03:39,190 --> 00:03:36,959

it's still

73

00:03:41,030 --> 00:03:39,200

research to be done but i think

74

00:03:43,270 --> 00:03:41,040

we humans

75

00:03:45,670 --> 00:03:43,280

are built to to live in space

76

00:03:48,070 --> 00:03:45,680

even for longer amounts of times

77

00:03:50,149 --> 00:03:48,080

and you also maybe heard that we have

78

00:03:52,630 --> 00:03:50,159

more missions coming up in the future

79

00:03:53,990 --> 00:03:52,640

that look at long time stays of around

80

00:03:56,309 --> 00:03:54,000

around one year

81

00:03:58,869 --> 00:03:56,319

and i'm sure there will be uh

82

00:04:08,949 --> 00:03:58,879

not soon after that not long after that

83

00:04:13,830 --> 00:04:10,789

did you ever notice

84

00:04:17,270 --> 00:04:13,840

any difference between your training on

85

00:04:23,110 --> 00:04:17,280

earth and the real procedures on the

86

00:04:27,430 --> 00:04:25,909

yes i did actually i mean

87

00:04:29,510 --> 00:04:27,440

it's funny that you asked that because i

88

00:04:31,909 --> 00:04:29,520

talked about this with my crew mates

89

00:04:34,710 --> 00:04:31,919

just yesterday and uh

90

00:04:37,510 --> 00:04:34,720

it's funny that uh if you uh start

91

00:04:40,469 --> 00:04:37,520

training on earth like uh for a

92

00:04:43,030 --> 00:04:40,479

procedure like a change out of a of a

93

00:04:43,990 --> 00:04:43,040

science wreck that i have here um or

94

00:04:45,749 --> 00:04:44,000

anything

95

00:04:47,670 --> 00:04:45,759

you start getting your tools out you

96

00:04:49,430 --> 00:04:47,680

start getting your all your equipment

97

00:04:51,350 --> 00:04:49,440

out and then you start working well if

98

00:04:53,270 --> 00:04:51,360

you do that up here you

99

00:04:55,110 --> 00:04:53,280

you have to have to have a way of

100

00:04:56,790 --> 00:04:55,120

putting things like if you get

101
00:04:57,830 --> 00:04:56,800
tools out they're gonna float everywhere

102
00:04:59,990 --> 00:04:57,840
i mean i

103
00:05:01,990 --> 00:05:00,000
just leave things and they disperse in

104
00:05:03,590 --> 00:05:02,000
different directions so

105
00:05:06,150 --> 00:05:03,600
you cannot work like that so you have to

106
00:05:08,550 --> 00:05:06,160
have a very strict way of keeping track

107
00:05:10,230 --> 00:05:08,560
of all the equipment all the devices

108
00:05:13,270 --> 00:05:10,240
that you use get them out of the bags

109
00:05:15,430 --> 00:05:13,280
just in time keep really meticulous

110
00:05:17,909 --> 00:05:15,440
track of where you put your screwdriver

111
00:05:20,070 --> 00:05:17,919
or any pencil anything

112
00:05:21,430 --> 00:05:20,080
it has to be velcroed or put in the bag

113
00:05:23,670 --> 00:05:21,440

and that's something that training did

114

00:05:25,590 --> 00:05:23,680

not prepare me for so at the beginning

115

00:05:27,430 --> 00:05:25,600

there were quite some funny scenes where

116

00:05:28,790 --> 00:05:27,440

i opened up a bag and there's like 20

117

00:05:30,310 --> 00:05:28,800

things floating out in different

118

00:05:32,710 --> 00:05:30,320

directions and some of them i haven't

119

00:05:34,710 --> 00:05:32,720

found until today so

120

00:05:43,909 --> 00:05:34,720

that's definitely an adaptation

121

00:05:49,430 --> 00:05:46,629

alex my name is alex and my question is

122

00:05:55,990 --> 00:05:49,440

how did being suspended in zero gravity

123

00:05:59,990 --> 00:05:56,790

well

124

00:06:02,870 --> 00:06:00,000

like you said i mean in zero g you can

125

00:06:05,189 --> 00:06:02,880

turn anytime any way you want and

126

00:06:06,950 --> 00:06:05,199

it always feels the same

127

00:06:09,749 --> 00:06:06,960

quite amazingly

128

00:06:11,830 --> 00:06:09,759

my body itself feels the same i still

129

00:06:13,990 --> 00:06:11,840

have the same kind of feeling

130

00:06:16,230 --> 00:06:14,000

my arms my legs everything

131

00:06:18,790 --> 00:06:16,240

works i mean it's amazing

132

00:06:19,990 --> 00:06:18,800

how our body can do that

133

00:06:22,469 --> 00:06:20,000

at night it's a little bit different

134

00:06:24,070 --> 00:06:22,479

because you uh tend to

135

00:06:26,070 --> 00:06:24,080

float in your sleeping bag and after a

136

00:06:27,990 --> 00:06:26,080

while you you just don't have the

137

00:06:30,550 --> 00:06:28,000

perception of touching anything and that

138

00:06:31,990 --> 00:06:30,560

can be a once in a while

139

00:06:33,990 --> 00:06:32,000

can lead to the feeling that you would

140

00:06:35,510 --> 00:06:34,000

like to kind of turn over and roll on

141

00:06:37,909 --> 00:06:35,520

the other side but it doesn't work in

142

00:06:39,670 --> 00:06:37,919

space of course so that's a little bit

143

00:06:42,070 --> 00:06:39,680

of a

144

00:06:43,990 --> 00:06:42,080

yeah a perception that changes and

145

00:06:46,950 --> 00:06:44,000

what's funny is that for for every

146

00:06:48,710 --> 00:06:46,960

module we have still the the up and down

147

00:06:50,950 --> 00:06:48,720

perception that we keep on earth i think

148

00:06:53,430 --> 00:06:50,960

our brains are trained like that because

149

00:06:55,350 --> 00:06:53,440

we lived so much time over our lives on

150

00:06:58,309 --> 00:06:55,360

earth that we obviously find it up and

151
00:06:59,749 --> 00:06:58,319
down so if i turn around and talk to you

152
00:07:02,070 --> 00:06:59,759
like this

153
00:07:04,950 --> 00:07:02,080
columbus module looks different to me i

154
00:07:06,390 --> 00:07:04,960
would not find things like if i had

155
00:07:08,070 --> 00:07:06,400
had to think of where i put my water

156
00:07:10,790 --> 00:07:08,080
bottle before i would have to look

157
00:07:12,950 --> 00:07:10,800
around but if i turn back the normal way

158
00:07:14,830 --> 00:07:12,960
i know exactly where it is now

159
00:07:17,830 --> 00:07:14,840
where i put it before

160
00:07:21,350 --> 00:07:17,840
so uh our bodies still

161
00:07:23,110 --> 00:07:21,360
still work in a in a 1g way in a way and

162
00:07:25,189 --> 00:07:23,120
that's especially funny when we go into

163
00:07:26,950 --> 00:07:25,199

modules like our training module the

164

00:07:28,870 --> 00:07:26,960

note 3 where we do

165

00:07:30,950 --> 00:07:28,880

where we have our strengths and exercise

166

00:07:33,510 --> 00:07:30,960

devices a treadmill they're all upside

167

00:07:35,430 --> 00:07:33,520

down or on the wall and that that leads

168

00:07:37,510 --> 00:07:35,440

to a funny flip over from one

169

00:07:39,430 --> 00:07:37,520

perspective to the other and when it

170

00:07:41,029 --> 00:07:39,440

flips over you certainly are in a

171

00:07:42,710 --> 00:07:41,039

different world like it's like being in

172

00:07:44,230 --> 00:07:42,720

a different module and you don't know

173

00:07:46,309 --> 00:07:44,240

where you've just put your water bottle

174

00:07:47,909 --> 00:07:46,319

before you turned around so it's it's

175

00:07:49,350 --> 00:07:47,919

really funny what happens to your brain

176

00:07:55,909 --> 00:07:49,360

it's

177

00:07:59,749 --> 00:07:58,150

hi alex my name is julian and my

178

00:08:01,430 --> 00:07:59,759

question is the following how do you

179

00:08:03,350 --> 00:08:01,440

handle moments and what you feel would

180

00:08:05,189 --> 00:08:03,360

you feel desperate is there a special

181

00:08:06,790 --> 00:08:05,199

team that either or dlr that supports

182

00:08:12,309 --> 00:08:06,800

you in these situations or do you have a

183

00:08:15,670 --> 00:08:14,150

uh it's also a very good question you

184

00:08:17,589 --> 00:08:15,680

know my

185

00:08:19,990 --> 00:08:17,599

my approach and i think it's the general

186

00:08:22,550 --> 00:08:20,000

approach of space flight training uh for

187

00:08:24,309 --> 00:08:22,560

this is to stay on top of things so you

188

00:08:28,390 --> 00:08:24,319

don't have the feeling of fear you don't

189

00:08:30,710 --> 00:08:28,400

even develop it like we train a lot for

190

00:08:32,550 --> 00:08:30,720

situations i mean maybe 70 of our

191

00:08:35,269 --> 00:08:32,560

training is for situations that are off

192

00:08:37,589 --> 00:08:35,279

nominal emergency situations so in such

193

00:08:39,190 --> 00:08:37,599

situations to avoid fear you have to

194

00:08:40,870 --> 00:08:39,200

have the feeling that you're in control

195

00:08:42,469 --> 00:08:40,880

of things even though things go wrong

196

00:08:44,149 --> 00:08:42,479

that you're always a step ahead in

197

00:08:46,070 --> 00:08:44,159

training you know

198

00:08:48,150 --> 00:08:46,080

if there's a fire here i'll do this if

199

00:08:50,710 --> 00:08:48,160

there's a depressurization because of a

200

00:08:52,829 --> 00:08:50,720

micrometeoroid strike

201
00:08:55,829 --> 00:08:52,839
we do this

202
00:08:57,190 --> 00:08:55,839
so in that situation then you can fall

203
00:09:00,150 --> 00:08:57,200
back to what you've trained and

204
00:09:03,030 --> 00:09:00,160
therefore well avoid fear i cannot

205
00:09:05,110 --> 00:09:03,040
really speak for that completely out of

206
00:09:07,910 --> 00:09:05,120
experience because we did not have a big

207
00:09:09,910 --> 00:09:07,920
emergency up here so i have never even

208
00:09:12,230 --> 00:09:09,920
come close to feeling fear

209
00:09:13,750 --> 00:09:12,240
desperation is also not something that

210
00:09:15,190 --> 00:09:13,760
would come to my mind being up here

211
00:09:17,509 --> 00:09:15,200
because it's really beautiful i'm here

212
00:09:20,550 --> 00:09:17,519
with like three really good friends uh

213
00:09:23,430 --> 00:09:20,560

we drove and we laugh every day and uh

214

00:09:25,350 --> 00:09:23,440

so i feel well here i look out and see

215

00:09:27,590 --> 00:09:25,360

the earth and and this is an amazing

216

00:09:29,269 --> 00:09:27,600

place to be an amazing place to work in

217

00:09:30,310 --> 00:09:29,279

so i'm far from being desperate as you

218

00:09:31,110 --> 00:09:30,320

might see

219

00:09:33,590 --> 00:09:31,120

uh

220

00:09:35,910 --> 00:09:33,600

so so far i had not did not have to deal

221

00:09:37,430 --> 00:09:35,920

with that but in general i think

222

00:09:44,790 --> 00:09:37,440

preparation

223

00:09:48,949 --> 00:09:47,110

hey alex my name is franz and i would

224

00:09:52,790 --> 00:09:48,959

like to know if you have to undertake

225

00:09:57,190 --> 00:09:52,800

some provisions to avoid impact of space

226

00:10:03,350 --> 00:09:59,750

yeah well uh the the whole iss is kind

227

00:10:05,750 --> 00:10:03,360

of shielded we have a layer of different

228

00:10:08,069 --> 00:10:05,760

uh cloths kevlar materials like a

229

00:10:10,150 --> 00:10:08,079

bulletproof vest that uh completely

230

00:10:12,069 --> 00:10:10,160

surrounds the space station and because

231

00:10:14,550 --> 00:10:12,079

we do get impacts all the time like tiny

232

00:10:15,750 --> 00:10:14,560

little ones like the size of sand corns

233

00:10:17,269 --> 00:10:15,760

uh they

234

00:10:19,030 --> 00:10:17,279

they they impact the space station all

235

00:10:20,790 --> 00:10:19,040

the time and if you look at the solar

236

00:10:22,870 --> 00:10:20,800

panels take a close look there's

237

00:10:25,350 --> 00:10:22,880

thousands or even millions of little

238

00:10:27,350 --> 00:10:25,360

hulls outside but they don't do anything

239

00:10:29,670 --> 00:10:27,360

to our space station bigger ones are

240

00:10:31,750 --> 00:10:29,680

much more rare

241

00:10:34,069 --> 00:10:31,760

but still happens once in a while that

242

00:10:35,910 --> 00:10:34,079

like a centimeter size object comes

243

00:10:38,230 --> 00:10:35,920

close to the space station and these are

244

00:10:41,030 --> 00:10:38,240

actually tracked from the ground and we

245

00:10:43,430 --> 00:10:41,040

know pretty much exactly where they are

246

00:10:45,350 --> 00:10:43,440

when they would interfere with our orbit

247

00:10:48,230 --> 00:10:45,360

and then we can give our ourselves a

248

00:10:49,750 --> 00:10:48,240

little reboost and bring bring a space

249

00:10:51,269 --> 00:10:49,760

station basically out of the way of that

250

00:10:53,430 --> 00:10:51,279

debris

251
00:10:55,590 --> 00:10:53,440
so we still have the risk of a collision

252
00:10:57,430 --> 00:10:55,600
that's why we're still prepared

253
00:11:00,710 --> 00:10:57,440
prepared like we can close hatches

254
00:11:02,710 --> 00:11:00,720
anytime if we have a module leaking

255
00:11:04,710 --> 00:11:02,720
there is actually a

256
00:11:07,190 --> 00:11:04,720
well a reasonably high likelihood that

257
00:11:09,829 --> 00:11:07,200
this might happen in the lifetime of iss

258
00:11:13,030 --> 00:11:09,839
but uh we're we're prepared for this so

259
00:11:19,509 --> 00:11:13,040
all in all the the danger to ourselves

260
00:11:23,269 --> 00:11:22,230
hi alex my name is sylvia and here's my

261
00:11:25,670 --> 00:11:23,279
question

262
00:11:28,870 --> 00:11:25,680
when you look down to earth what do you

263
00:11:34,150 --> 00:11:28,880

think about us and do you have any tip

264

00:11:39,509 --> 00:11:36,230

yeah it's it's amazing to look down at

265

00:11:43,190 --> 00:11:39,519

that earth my personal feeling is

266

00:11:46,470 --> 00:11:43,200

it's much much much more small

267

00:11:48,230 --> 00:11:46,480

and fragile and tiny that i ever thought

268

00:11:50,310 --> 00:11:48,240

and if you look at like the cloud

269

00:11:51,910 --> 00:11:50,320

systems that you see or if you look at i

270

00:11:53,750 --> 00:11:51,920

mean you can see a whole continent at

271

00:11:56,069 --> 00:11:53,760

once you can see the whole of australia

272

00:11:59,190 --> 00:11:56,079

at the same time you can see south

273

00:12:00,710 --> 00:11:59,200

america and africa at the same time when

274

00:12:02,629 --> 00:12:00,720

you look out the window

275

00:12:04,389 --> 00:12:02,639

and to me it looks like everything is

276

00:12:06,389 --> 00:12:04,399

connected on this planet this is really

277

00:12:08,949 --> 00:12:06,399

obvious from up here you cannot do

278

00:12:11,030 --> 00:12:08,959

anything on this tiny little

279

00:12:12,870 --> 00:12:11,040

sphere on one side that doesn't affect

280

00:12:15,110 --> 00:12:12,880

the other side this is this is so clear

281

00:12:18,150 --> 00:12:15,120

from up here and uh and the the

282

00:12:20,629 --> 00:12:18,160

atmosphere is is very very thin that's

283

00:12:23,509 --> 00:12:20,639

so clear from up here and even though i

284

00:12:24,389 --> 00:12:23,519

knew all this in the way before it is

285

00:12:26,550 --> 00:12:24,399

still

286

00:12:28,470 --> 00:12:26,560

amazing to see that and

287

00:12:30,150 --> 00:12:28,480

well to feel this so

288

00:12:32,629 --> 00:12:30,160

that's why i don't i don't think i

289

00:12:34,470 --> 00:12:32,639

should give advice to anybody because

290

00:12:36,389 --> 00:12:34,480

who would listen to a guy who flew into

291

00:12:39,110 --> 00:12:36,399

space just just because he flew into

292

00:12:42,069 --> 00:12:39,120

space my approach to this is actually

293

00:12:43,829 --> 00:12:42,079

let the people on earth see

294

00:12:46,550 --> 00:12:43,839

the earth through my eyes and that's why

295

00:12:48,389 --> 00:12:46,560

i tweet so many uh pictures give my

296

00:12:49,829 --> 00:12:48,399

impressions what i feel when i see a

297

00:12:55,190 --> 00:12:49,839

picture

298

00:12:57,990 --> 00:12:55,200

human from a human point of view and

299

00:13:00,389 --> 00:12:58,000

convey that perspective down to you guys

300

00:13:02,470 --> 00:13:00,399

who help tremendously by the way by

301

00:13:04,550 --> 00:13:02,480

distributing that message and that

302

00:13:07,030 --> 00:13:04,560

people judge themselves were what the

303

00:13:09,110 --> 00:13:07,040

planet is that they live on and get that

304

00:13:11,509 --> 00:13:09,120

perspective to them and i think

305

00:13:13,269 --> 00:13:11,519

any conclusion that a person makes from

306

00:13:14,949 --> 00:13:13,279

their own perspective

307

00:13:17,590 --> 00:13:14,959

is much more

308

00:13:24,069 --> 00:13:17,600

valuable much stronger than listening to

309

00:13:28,230 --> 00:13:26,310

hello alex my name is lucas

310

00:13:30,150 --> 00:13:28,240

thank you for the protest on facebook

311

00:13:33,110 --> 00:13:30,160

where you also wrote

312

00:13:34,389 --> 00:13:33,120

that the work record on the iss had been

313

00:13:35,269 --> 00:13:34,399

broken

314

00:13:37,990 --> 00:13:35,279

and

315

00:13:40,790 --> 00:13:38,000

my question is how do you deal with this

316

00:13:45,030 --> 00:13:40,800

workload and is there any work-life

317

00:13:49,269 --> 00:13:47,509

yeah we work a lot of course up here uh

318

00:13:51,269 --> 00:13:49,279

just because we want to make

319

00:13:53,590 --> 00:13:51,279

most of the time that we have so we have

320

00:13:55,670 --> 00:13:53,600

about a 12 hour working day and then you

321

00:13:58,230 --> 00:13:55,680

have to add like several hours of doing

322

00:14:00,150 --> 00:13:58,240

like administrative work email

323

00:14:01,750 --> 00:14:00,160

getting organized for the next day so

324

00:14:06,550 --> 00:14:01,760

there's

325

00:14:08,470 --> 00:14:06,560

we have per day that we we can do our

326

00:14:10,870 --> 00:14:08,480

own thing like we could float to the

327

00:14:13,269 --> 00:14:10,880

cupola have a look outside we can uh

328

00:14:15,269 --> 00:14:13,279

call our families or write emails to our

329

00:14:16,949 --> 00:14:15,279

friends that works so that's that's

330

00:14:19,350 --> 00:14:16,959

already a balance

331

00:14:21,269 --> 00:14:19,360

and i i feel like uh that's that's

332

00:14:22,870 --> 00:14:21,279

enough during the week because we don't

333

00:14:25,670 --> 00:14:22,880

have uh too much too many things to do

334

00:14:27,670 --> 00:14:25,680

up here anyways uh apart from uh working

335

00:14:30,470 --> 00:14:27,680

or looking out the window which is a

336

00:14:32,629 --> 00:14:30,480

good thing and uh i do have one thing a

337

00:14:34,790 --> 00:14:32,639

week this is my sunday afternoon that i

338

00:14:37,509 --> 00:14:34,800

keep completely free of everything like

339

00:14:39,030 --> 00:14:37,519

i don't do any exercise i don't plan any

340

00:14:41,750 --> 00:14:39,040

work there

341

00:14:44,949 --> 00:14:41,760

and i just do things that i do for

342

00:14:47,509 --> 00:14:44,959

myself like uh well writing a letter to

343

00:14:50,230 --> 00:14:47,519

somebody or or just giving giving a

344

00:14:52,470 --> 00:14:50,240

friend a call and that's that's my own

345

00:14:54,550 --> 00:14:52,480

reserved time i don't work out there i

346

00:14:56,870 --> 00:14:54,560

don't even do do like running on the

347

00:14:59,430 --> 00:14:56,880

treadmill and that's my

348

00:15:00,550 --> 00:14:59,440

my way that i found for myself to

349

00:15:02,949 --> 00:15:00,560

balance

350

00:15:04,310 --> 00:15:02,959

my work life and

351

00:15:06,150 --> 00:15:04,320

that works really well and i think

352

00:15:12,790 --> 00:15:06,160

everybody up here has their own little

353

00:15:17,430 --> 00:15:15,829

hi alex i'm eduardo and my question is

354

00:15:19,430 --> 00:15:17,440

what did you bring with you on board the

355

00:15:23,509 --> 00:15:19,440

international space station so as not to

356

00:15:26,230 --> 00:15:24,470

you know

357

00:15:29,350 --> 00:15:26,240

i've been asked that question a lot and

358

00:15:31,430 --> 00:15:29,360

i did bring things up here like little

359

00:15:32,470 --> 00:15:31,440

uh things that remind me of my friends

360

00:15:33,829 --> 00:15:32,480

and

361

00:15:35,829 --> 00:15:33,839

photos

362

00:15:39,030 --> 00:15:35,839

but you know all that

363

00:15:42,310 --> 00:15:39,040

i realize while it is nice to have and

364

00:15:43,269 --> 00:15:42,320

good to see it is not a substitute

365

00:15:45,910 --> 00:15:43,279

uh

366

00:15:47,110 --> 00:15:45,920

it doesn't help me to not miss earth

367

00:15:48,949 --> 00:15:47,120

anymore

368

00:15:51,509 --> 00:15:48,959

yeah i mean i don't see

369

00:15:53,350 --> 00:15:51,519

it as difficult being up here for three

370

00:15:56,389 --> 00:15:53,360

months now in six months i know that

371

00:15:58,470 --> 00:15:56,399

that'll time will pass in in no time and

372

00:16:00,389 --> 00:15:58,480

even the year up here i think humans can

373

00:16:02,710 --> 00:16:00,399

deal with that we can go to extreme

374

00:16:04,870 --> 00:16:02,720

places knowing that our home is down

375

00:16:06,710 --> 00:16:04,880

there and i do see earth

376

00:16:08,550 --> 00:16:06,720

every time i look out the window i see a

377

00:16:09,910 --> 00:16:08,560

beautiful earth it doesn't feel like

378

00:16:11,749 --> 00:16:09,920

we're far away

379

00:16:13,829 --> 00:16:11,759

but i realize

380

00:16:15,670 --> 00:16:13,839

that i miss things like running in the

381

00:16:17,269 --> 00:16:15,680

forest or standing in the rain in the

382

00:16:19,110 --> 00:16:17,279

summer

383

00:16:20,790 --> 00:16:19,120

that will never be

384

00:16:22,550 --> 00:16:20,800

replaced by something that i bring up

385

00:16:24,550 --> 00:16:22,560

here and that that will be also the

386

00:16:27,430 --> 00:16:24,560

future of space exploration i don't

387

00:16:29,189 --> 00:16:27,440

think we humans we if we grew up on

388

00:16:30,790 --> 00:16:29,199

earth we will

389

00:16:33,269 --> 00:16:30,800

ever be able to replace that by

390

00:16:36,790 --> 00:16:33,279

something else this little planet down

391

00:16:38,710 --> 00:16:36,800

there that's that's our home and we

392

00:16:41,670 --> 00:16:38,720

we cannot replace it by anything else so

393

00:16:43,910 --> 00:16:41,680

we always uh want to go back i guess

394

00:16:44,949 --> 00:16:43,920

well some of us might not but

395

00:16:46,790 --> 00:16:44,959

we always

396

00:16:49,189 --> 00:16:46,800

have this strong connection to that

397

00:16:50,949 --> 00:16:49,199

planet uh whatever we find out there in

398

00:16:52,790 --> 00:16:50,959

the universe and i think we need to have

399

00:16:53,829 --> 00:16:52,800

a look out there for many many different

400

00:16:56,470 --> 00:16:53,839

reasons

401
00:17:00,069 --> 00:16:56,480
and we might find many new exciting

402
00:17:01,670 --> 00:17:00,079
worlds but us humans we we like our

403
00:17:03,269 --> 00:17:01,680
earth and it's not

404
00:17:04,710 --> 00:17:03,279
it's the only place we know the only

405
00:17:05,750 --> 00:17:04,720
place in the universe that we can live

406
00:17:07,750 --> 00:17:05,760
on and

407
00:17:10,549 --> 00:17:07,760
yeah we should probably take care of

408
00:17:12,309 --> 00:17:10,559
that that's my that's my understanding

409
00:17:20,949 --> 00:17:12,319
from

410
00:17:25,590 --> 00:17:22,789
and my question is

411
00:17:26,309 --> 00:17:25,600
you got so much impressions of our place

412
00:17:28,710 --> 00:17:26,319
of

413
00:17:30,710 --> 00:17:28,720

refuge in space what do you think in

414

00:17:37,190 --> 00:17:30,720

which kind your life on earth will

415

00:17:41,190 --> 00:17:39,270

yeah i think many things will change for

416

00:17:43,190 --> 00:17:41,200

me of course because i'm not in training

417

00:17:45,350 --> 00:17:43,200

anymore so i'm kind of getting back a

418

00:17:47,430 --> 00:17:45,360

little bit more control over my own life

419

00:17:49,750 --> 00:17:47,440

the last three years i traveled around a

420

00:17:52,950 --> 00:17:49,760

lot of course but in the more general

421

00:17:55,669 --> 00:17:52,960

thing on how i how i see earth

422

00:17:57,510 --> 00:17:55,679

maybe i mean i have not come back yet so

423

00:18:01,510 --> 00:17:57,520

i don't quite know what the difference

424

00:18:02,390 --> 00:18:01,520

will be but if i if i look back on

425

00:18:05,270 --> 00:18:02,400

like

426

00:18:08,870 --> 00:18:05,280

i started flying or or

427

00:18:11,110 --> 00:18:08,880

parachuting suddenly my view from

428

00:18:12,950 --> 00:18:11,120

on my on my surroundings went from a 2d

429

00:18:15,190 --> 00:18:12,960

view to a 3d view

430

00:18:17,270 --> 00:18:15,200

suddenly when i started flying in

431

00:18:18,390 --> 00:18:17,280

airplanes i realized oh weather is not a

432

00:18:20,549 --> 00:18:18,400

local

433

00:18:22,470 --> 00:18:20,559

it's not a general thing today is a

434

00:18:24,549 --> 00:18:22,480

rainy day but no it's actually just a

435

00:18:26,470 --> 00:18:24,559

local thing right it only rains at that

436

00:18:28,870 --> 00:18:26,480

place and if you fly or travel somewhere

437

00:18:30,070 --> 00:18:28,880

else it might be fine weather there

438

00:18:31,909 --> 00:18:30,080

so

439

00:18:34,549 --> 00:18:31,919

you get a broader perspective on things

440

00:18:36,950 --> 00:18:34,559

and i think the same will happen uh on

441

00:18:39,190 --> 00:18:36,960

with me now having circled the earth in

442

00:18:41,510 --> 00:18:39,200

90 minutes and knowing every corner of

443

00:18:44,070 --> 00:18:41,520

it from a distance now i mean i can like

444

00:18:45,510 --> 00:18:44,080

i feel like i can already tell which

445

00:18:47,110 --> 00:18:45,520

continent which countries we fly over

446

00:18:48,470 --> 00:18:47,120

just by looking out the window because i

447

00:18:49,430 --> 00:18:48,480

did that so much

448

00:18:50,310 --> 00:18:49,440

i think

449

00:18:52,390 --> 00:18:50,320

uh

450

00:18:54,470 --> 00:18:52,400

what might change is my perception of

451

00:18:56,150 --> 00:18:54,480

this planet it i think it got smaller in

452

00:18:58,549 --> 00:18:56,160

a way and

453

00:19:00,789 --> 00:18:58,559

i suddenly see that

454

00:19:03,350 --> 00:19:00,799

many things are more connected

455

00:19:05,830 --> 00:19:03,360

than than i thought when when i grew up

456

00:19:08,070 --> 00:19:05,840

like if you grow up in a small town you

457

00:19:10,870 --> 00:19:08,080

your world around you as a diameter of

458

00:19:12,549 --> 00:19:10,880

maybe 20 kilometers and then you start

459

00:19:14,789 --> 00:19:12,559

studying and

460

00:19:16,150 --> 00:19:14,799

go to a different town and it grows to

461

00:19:18,710 --> 00:19:16,160

you travel and

462

00:19:21,270 --> 00:19:18,720

you suddenly your radius is a country or

463

00:19:25,110 --> 00:19:21,280

a continent but but now i see that earth

464

00:19:27,430 --> 00:19:25,120

is really just a small little um well

465

00:19:29,830 --> 00:19:27,440

rock in in the universe and that's all

466

00:19:30,950 --> 00:19:29,840

we have and i think that changes the

467

00:19:32,870 --> 00:19:30,960

view of

468

00:19:38,549 --> 00:19:32,880

of what we what we have out there and

469

00:19:42,870 --> 00:19:40,150

last question

470

00:19:45,350 --> 00:19:42,880

hi alex this is constanza from dresden

471

00:19:48,310 --> 00:19:45,360

well my question refers to the time when

472

00:19:50,070 --> 00:19:48,320

we are back on earth what will miss most

473

00:19:56,549 --> 00:19:50,080

when you're back are there any

474

00:20:00,789 --> 00:19:58,549

yeah i'm pretty sure what i will miss is

475

00:20:02,549 --> 00:20:00,799

of course the view out the window on

476

00:20:04,630 --> 00:20:02,559

this earth that is

477

00:20:06,870 --> 00:20:04,640

so amazing so beautiful

478

00:20:09,909 --> 00:20:06,880

it is different every single time i look

479

00:20:11,830 --> 00:20:09,919

out like i've never managed to repeat a

480

00:20:13,510 --> 00:20:11,840

photo twice

481

00:20:16,230 --> 00:20:13,520

it's it's different every single time

482

00:20:18,710 --> 00:20:16,240

those clouds this the lighting

483

00:20:21,510 --> 00:20:18,720

it's so beautiful and it's like seeing

484

00:20:23,270 --> 00:20:21,520

an orbital sunrise or a sunset is i get

485

00:20:24,789 --> 00:20:23,280

like tears in my eyes every single time

486

00:20:26,149 --> 00:20:24,799

i see it even though i've seen it so

487

00:20:29,350 --> 00:20:26,159

many times

488

00:20:30,950 --> 00:20:29,360

and uh that i will miss definitely then

489

00:20:33,190 --> 00:20:30,960

floating just like

490

00:20:34,870 --> 00:20:33,200

being able to to hang out

491

00:20:36,549 --> 00:20:34,880

just park things in the middle of the

492

00:20:38,310 --> 00:20:36,559

air that's that's actually a really neat

493

00:20:40,149 --> 00:20:38,320

thing to do like when when i'm busy

494

00:20:43,270 --> 00:20:40,159

doing something i got really used to

495

00:20:45,270 --> 00:20:43,280

just putting something here and then oh

496

00:20:47,029 --> 00:20:45,280

you still have to keep track of course

497

00:20:50,310 --> 00:20:47,039

about it but

498

00:20:52,950 --> 00:20:50,320

it's it's nice you can even park like

499

00:20:54,710 --> 00:20:52,960

fridge sized items like a science rack

500

00:20:56,870 --> 00:20:54,720

that you take out of a box or something

501
00:20:58,549 --> 00:20:56,880
you can park them right there that is

502
00:21:00,149 --> 00:20:58,559
actually a really cool thing to do i

503
00:21:01,909 --> 00:21:00,159
will miss that

504
00:21:04,230 --> 00:21:01,919
so i hope i won't drop too many things

505
00:21:05,029 --> 00:21:04,240
by just trying to park them uh in the

506
00:21:07,029 --> 00:21:05,039
air

507
00:21:09,350 --> 00:21:07,039
but uh yeah i

508
00:21:11,510 --> 00:21:09,360
yeah i think uh i think living in space

509
00:21:13,190 --> 00:21:11,520
is a fantastic thing i i think everybody

510
00:21:15,270 --> 00:21:13,200
should have the chance of doing that

511
00:21:20,070 --> 00:21:15,280
once

512
00:21:24,390 --> 00:21:21,430
thank you station that concludes the

513
00:21:25,990 --> 00:21:24,400

event in cologne goodbye

514

00:21:29,029 --> 00:21:26,000

station this is houston thank you

515

00:21:32,630 --> 00:21:29,039

cologne all the best

516

00:21:34,789 --> 00:21:32,640

thank you that concludes our event

517

00:21:36,870 --> 00:21:34,799

thank you isa and social media

518

00:21:38,789 --> 00:21:36,880

participants stationed we are now