

- * • Non-attendees (attend/speak) (A & Speakers & ...)
- v3 • login to register (Automotive (old))
- * • help contact us (ET)
- v3 • attendees NOT on main pb
- * • press inquiries (ET)
- v2 • Sponsors (T & new page section)

HIDDEN TRUTH SHOW WITH JIM BRESLO
SPACE RACE

AVAILABLE ON ALL PODCAST APPS



1
00:00:04,470 --> 00:00:11,560

[Music]

2
00:00:16,700 --> 00:00:14,570
so Anusha on sorry thank you so much for

3
00:00:20,660 --> 00:00:16,710
taking the time to join us you are the

4
00:00:23,660 --> 00:00:20,670
first Iranian in space the first Muslim

5
00:00:26,900 --> 00:00:23,670
woman in space and the first female

6
00:00:28,099 --> 00:00:26,910
tourist as they call it I'm curious with

7
00:00:29,990 --> 00:00:28,109
all those titles and maybe I'm missing

8
00:00:30,890 --> 00:00:30,000
others but which of those are you most

9
00:00:34,970 --> 00:00:30,900
proud of

10
00:00:37,700 --> 00:00:34,980
oh well I just you know first private

11
00:00:40,490 --> 00:00:37,710
explorer in space that happens to be a

12
00:00:45,110 --> 00:00:40,500
woman and it's a big step for women

13
00:00:47,500 --> 00:00:45,120

because you know for so many years in

14

00:00:50,090 --> 00:00:47,510

many different cultures and countries

15

00:00:52,369 --> 00:00:50,100

it's believed that women can't do

16

00:00:54,619 --> 00:00:52,379

certain things so I like that title

17

00:00:57,529 --> 00:00:54,629

because it shows that we can and we do

18

00:00:59,330 --> 00:00:57,539

and we will continue to yeah and I think

19

00:01:02,689 --> 00:00:59,340

those titles are gonna be more and more

20

00:01:04,549 --> 00:01:02,699

impressive because soon in a matter of a

21

00:01:07,160 --> 00:01:04,559

couple of years there aren't going to be

22

00:01:09,830 --> 00:01:07,170

many more firsts as we have more

23

00:01:11,960 --> 00:01:09,840

tourists in space right yes absolutely I

24

00:01:15,230 --> 00:01:11,970

think the first will be then you know to

25

00:01:18,320 --> 00:01:15,240

Mars maybe first private citizens who

26

00:01:21,499 --> 00:01:18,330

will settle on Moon or Mars or other

27

00:01:22,910 --> 00:01:21,509

parts of the you know space so there's

28

00:01:25,280 --> 00:01:22,920

still a lot of firsts

29

00:01:27,679 --> 00:01:25,290

because there's this infinite frontier

30

00:01:30,560 --> 00:01:27,689

of space that has opened up now for

31

00:01:32,569 --> 00:01:30,570

exploration so I hope there will be more

32

00:01:33,350 --> 00:01:32,579

for our younger generation probably not

33

00:01:34,700 --> 00:01:33,360

for my dinner

34

00:01:36,859 --> 00:01:34,710

bottom line as we sit here today how

35

00:01:41,359 --> 00:01:36,869

many people have been in space I think

36

00:01:43,219 --> 00:01:41,369

over 550 people so far and actually to

37

00:01:46,850 --> 00:01:43,229

the Space Station where you spent 11

38

00:01:49,100 --> 00:01:46,860

days how many um most of them actually

39

00:01:52,219 --> 00:01:49,110

have been to Space Station the early

40

00:01:54,639 --> 00:01:52,229

Apollo program was to moon so that's a

41

00:01:58,130 --> 00:01:54,649

very small number I think it's in the

42

00:02:02,270 --> 00:01:58,140

mmm if I'm not mistaken the 2025 people

43

00:02:07,550 --> 00:02:02,280

in total have made it to 2 to the moon

44

00:02:09,279 --> 00:02:07,560

maybe not even that many but to the

45

00:02:12,410 --> 00:02:09,289

space station most of our actually

46

00:02:13,370 --> 00:02:12,420

recent flights have been to a space

47

00:02:14,990 --> 00:02:13,380

station where

48

00:02:18,110 --> 00:02:15,000

to the International Space Station or

49

00:02:23,110 --> 00:02:18,120

Mir prior to that or just orbiting in

50

00:02:27,680 --> 00:02:23,120

the shuttle so a lot of orbital sort of

51
00:02:29,510 --> 00:02:27,690
stations so you fulfilled lifelong dream

52
00:02:32,630 --> 00:02:29,520
yes somewhat are you kind of a crazy

53
00:02:34,970 --> 00:02:32,640
dream because one thing that I've read

54
00:02:37,640 --> 00:02:34,980
that you you've said is that you would

55
00:02:41,180 --> 00:02:37,650
have been okay not returning from space

56
00:02:44,960 --> 00:02:41,190
dying there in order to go that's how

57
00:02:48,200 --> 00:02:44,970
strong your urge was absolutely I felt

58
00:02:52,280 --> 00:02:48,210
like my life would not have any meaning

59
00:02:55,220 --> 00:02:52,290
without experiencing being in space and

60
00:02:57,650 --> 00:02:55,230
when I actually flew to space station

61
00:03:00,260 --> 00:02:57,660
when I was weightless when I was up

62
00:03:02,600 --> 00:03:00,270
there and able to look at our planet

63
00:03:05,210 --> 00:03:02,610

from space I felt at home I feel like

64

00:03:07,010 --> 00:03:05,220

I've finally arrived then and I was

65

00:03:10,760 --> 00:03:07,020

happy to just stay there and have come

66

00:03:12,920 --> 00:03:10,770

back so I felt that if the price is that

67

00:03:14,330 --> 00:03:12,930

you know there's a one-way mission that

68

00:03:16,190 --> 00:03:14,340

they will say who's gonna raise their

69

00:03:17,690 --> 00:03:16,200

hand and god this one-way mission that I

70

00:03:20,570 --> 00:03:17,700

would definitely do that have you seen a

71

00:03:23,150 --> 00:03:20,580

therapist about this my husband says I

72

00:03:24,860 --> 00:03:23,160

should I be but seriously

73

00:03:26,330 --> 00:03:24,870

obviously you know and I've read some of

74

00:03:28,610 --> 00:03:26,340

your background I know your parents were

75

00:03:30,560 --> 00:03:28,620

divorced at a young age at five years

76

00:03:33,010 --> 00:03:30,570

old I mean do you think there is

77

00:03:35,900 --> 00:03:33,020

something from your childhood that

78

00:03:40,850 --> 00:03:35,910

ultimately relates to today that that

79

00:03:44,000 --> 00:03:40,860

incredible burning desire I think what

80

00:03:46,840 --> 00:03:44,010

may be the root cause of this is this

81

00:03:50,720 --> 00:03:46,850

innate sense of curiosity I have in me

82

00:03:54,080 --> 00:03:50,730

I'm always curious to learn new things

83

00:03:56,870 --> 00:03:54,090

to know about unknown places any type of

84

00:03:59,360 --> 00:03:56,880

mystery attracts so am i but I'm not

85

00:04:01,190 --> 00:03:59,370

willing to die in space so yours is kind

86

00:04:04,060 --> 00:04:01,200

of off the charts a little bit yeah a

87

00:04:06,740 --> 00:04:04,070

little bit extreme well you you know I

88

00:04:08,780 --> 00:04:06,750

heard one of your but perhaps in the

89
00:04:11,600 --> 00:04:08,790
documentary we talked about turmoil when

90
00:04:15,380 --> 00:04:11,610
you were a child and seeking solace in

91
00:04:18,770 --> 00:04:15,390
looking at space so is space kind of

92
00:04:21,530 --> 00:04:18,780
your safe place it is it's a place that

93
00:04:24,140 --> 00:04:21,540
I think it's ideal for new beginning

94
00:04:25,700 --> 00:04:24,150
it's a place that you can start anew

95
00:04:28,220 --> 00:04:25,710
build new things

96
00:04:31,130 --> 00:04:28,230
you know if we are settling for example

97
00:04:33,680 --> 00:04:31,140
on Mars it's our opportunity to create a

98
00:04:35,780 --> 00:04:33,690
whole new type of civilization a whole

99
00:04:39,470 --> 00:04:35,790
new way of interacting with each other a

100
00:04:41,690 --> 00:04:39,480
whole new perhaps way of governance so

101
00:04:44,960 --> 00:04:41,700
it's like a blank sheet of paper you can

102
00:04:47,300 --> 00:04:44,970
start from the first time so when you

103
00:04:50,990 --> 00:04:47,310
were there did it feel like home

104
00:04:54,830 --> 00:04:51,000
it felt home when I was in Space Station

105
00:04:58,370 --> 00:04:54,840
I felt this sense of freedom which was

106
00:05:00,320 --> 00:04:58,380
very difficult to explain because I knew

107
00:05:02,690 --> 00:05:00,330
I'm there temporarily I knew that I

108
00:05:05,780 --> 00:05:02,700
would be returning to Earth so there was

109
00:05:09,260 --> 00:05:05,790
no you know sort of sense of why I was

110
00:05:11,390 --> 00:05:09,270
feeling so free but I was I felt maybe

111
00:05:14,240 --> 00:05:11,400
it's because I was free from gravity

112
00:05:16,280 --> 00:05:14,250
that I felt I'm free from all the you

113
00:05:19,340 --> 00:05:16,290

know craziness that goes on in

114

00:05:21,830 --> 00:05:19,350

everyone's life you know and in mine too

115

00:05:24,020 --> 00:05:21,840

and I was in Space Station and it was

116

00:05:27,590 --> 00:05:24,030

like this out-of-body experience that I

117

00:05:30,770 --> 00:05:27,600

was looking back on on our planet I was

118

00:05:33,830 --> 00:05:30,780

looking back at you know sort of where I

119

00:05:35,570 --> 00:05:33,840

lived where I spent my childhood where I

120

00:05:37,730 --> 00:05:35,580

went to school all my memories

121

00:05:40,820 --> 00:05:37,740

everything was right in front of me and

122

00:05:43,520 --> 00:05:40,830

then I was completely detached from it

123

00:05:46,940 --> 00:05:43,530

separate from it so I felt a sense of

124

00:05:49,970 --> 00:05:46,950

freedom that's like that's me there but

125

00:05:52,100 --> 00:05:49,980

that's the new me here in space and I

126

00:05:53,540 --> 00:05:52,110

can be anything I can do anything

127

00:05:57,350 --> 00:05:53,550

how did it meet with what your

128

00:06:01,520 --> 00:05:57,360

expectations were super exceeded my

129

00:06:04,370 --> 00:06:01,530

expectations I loved and imagine how it

130

00:06:07,520 --> 00:06:04,380

feels to float freely in space and be

131

00:06:09,490 --> 00:06:07,530

there and see earth I had seen thousands

132

00:06:12,890 --> 00:06:09,500

of pictures of Earth from space but

133

00:06:16,760 --> 00:06:12,900

seeing it with my own eyes it was like

134

00:06:20,390 --> 00:06:16,770

this you know change that happened in me

135

00:06:24,110 --> 00:06:20,400

where I was able to see everything as a

136

00:06:27,890 --> 00:06:24,120

whole as you know interconnected as one

137

00:06:31,760 --> 00:06:27,900

planet as you know this one place that

138

00:06:34,310 --> 00:06:31,770

we call home and and it said it puts

139

00:06:37,279 --> 00:06:34,320

things in different perspectives so it

140

00:06:39,439 --> 00:06:37,289

redefined my relationship with the world

141

00:06:42,200 --> 00:06:39,449

around me with the people around me

142

00:06:44,869 --> 00:06:42,210

with you know prioritizing things in my

143

00:06:48,170 --> 00:06:44,879

life and so it was very profound

144

00:06:49,549 --> 00:06:48,180

experience is that unique to you or do

145

00:06:50,989 --> 00:06:49,559

you find in talking to other astronauts

146

00:06:53,989 --> 00:06:50,999

they have the same experience I think

147

00:06:58,480 --> 00:06:53,999

most astronauts have a similar

148

00:07:00,860 --> 00:06:58,490

experience in varying degree

149

00:07:04,670 --> 00:07:00,870

there's even books written about this

150

00:07:06,980 --> 00:07:04,680

overview effect so I think there's this

151
00:07:09,290 --> 00:07:06,990
common thread when you talk to

152
00:07:12,260 --> 00:07:09,300
astronauts about how they felt when they

153
00:07:16,790 --> 00:07:12,270
were in space and how they all realized

154
00:07:20,239 --> 00:07:16,800
how our planet is this really precious

155
00:07:24,050 --> 00:07:20,249
home for all of us for all of humanity

156
00:07:27,589 --> 00:07:24,060
and how humanity and this world around

157
00:07:30,739 --> 00:07:27,599
us are all connected together and that

158
00:07:33,439 --> 00:07:30,749
you sort of realize that in a profound

159
00:07:35,570 --> 00:07:33,449
way when you're in space so I had I

160
00:07:38,269 --> 00:07:35,580
think a sliver of that experience in

161
00:07:39,439 --> 00:07:38,279
watching gravity which I thought and I'm

162
00:07:42,529 --> 00:07:39,449
curious your thoughts about it but I

163
00:07:45,829 --> 00:07:42,539

thought does a great job of making you

164

00:07:48,499 --> 00:07:45,839

feel the way that you're just describing

165

00:07:51,350 --> 00:07:48,509

because when when Sandra Bullock Lam's

166

00:07:53,929 --> 00:07:51,360

and she's in the water and then rises up

167

00:07:57,529 --> 00:07:53,939

from the water and then gets to shore

168

00:08:00,980 --> 00:07:57,539

and kind of crawls to shore almost like

169

00:08:03,679 --> 00:08:00,990

early life I guess and see it doesn't

170

00:08:06,070 --> 00:08:03,689

quite but essentially kisses the ground

171

00:08:08,959 --> 00:08:06,080

and she's almost like hugging earth and

172

00:08:11,239 --> 00:08:08,969

it really resonated with me

173

00:08:12,529 --> 00:08:11,249

the thing that Wow because you know

174

00:08:17,629 --> 00:08:12,539

you're in space with her this whole time

175

00:08:20,809 --> 00:08:17,639

and then to get back home and that home

176

00:08:23,929 --> 00:08:20,819

is not Los Angeles or any particular

177

00:08:25,610 --> 00:08:23,939

place home is earth exactly that's kind

178

00:08:27,589 --> 00:08:25,620

of the feeling that I got in watching

179

00:08:30,110 --> 00:08:27,599

that am i describing it okay you're

180

00:08:32,360 --> 00:08:30,120

describing it perfectly because the

181

00:08:35,029 --> 00:08:32,370

definition of home changes for you when

182

00:08:38,240 --> 00:08:35,039

you go to space it becomes earth it's

183

00:08:40,730 --> 00:08:38,250

not any geographic location on earth but

184

00:08:43,490 --> 00:08:40,740

it's the entire earth and that is a

185

00:08:46,250 --> 00:08:43,500

profound shift in perspective in the way

186

00:08:48,500 --> 00:08:46,260

you view the world so wherever you

187

00:08:50,840 --> 00:08:48,510

travel wherever you go you feel at home

188

00:08:52,810 --> 00:08:50,850

because this is your home this is your

189

00:08:55,690 --> 00:08:52,820

planet right so kudos to

190

00:08:58,180 --> 00:08:55,700

the director Alfonso Curran who won

191

00:09:00,760 --> 00:08:58,190

seroma who did an amazing job with that

192

00:09:03,910 --> 00:09:00,770

but you know when I first watched it I

193

00:09:05,920 --> 00:09:03,920

eat my popcorn and my large Coke Zero I

194

00:09:07,750 --> 00:09:05,930

always have when I go to the movies and

195

00:09:09,910 --> 00:09:07,760

I went to bed thinking that was a good

196

00:09:12,370 --> 00:09:09,920

good movie and woke up the next day and

197

00:09:15,400 --> 00:09:12,380

when I'm doing what I was doing so how

198

00:09:17,380 --> 00:09:15,410

do we translate that feeling that I had

199

00:09:20,350 --> 00:09:17,390

for a fleeting moment you probably had

200

00:09:22,090 --> 00:09:20,360

more intensely but okay so what does

201
00:09:26,530 --> 00:09:22,100
that really translate to earth is our

202
00:09:29,950 --> 00:09:26,540
home what do we take with that I've

203
00:09:33,700 --> 00:09:29,960
always advocated sending you know world

204
00:09:35,200 --> 00:09:33,710
leaders to space because I think it will

205
00:09:37,990 --> 00:09:35,210
profoundly change the way they make

206
00:09:40,870 --> 00:09:38,000
policy it has changed me in the way I

207
00:09:42,850 --> 00:09:40,880
choose what I work on I've worked on

208
00:09:45,610 --> 00:09:42,860
things that will have global impact

209
00:09:48,370 --> 00:09:45,620
that's why I'm here at XPrize foundation

210
00:09:51,970 --> 00:09:48,380
I choose to work on projects that go

211
00:09:56,080 --> 00:09:51,980
beyond any small boundaries so it has

212
00:09:59,740 --> 00:09:56,090
opened up my field of view to larger

213
00:10:04,030 --> 00:09:59,750

scale problems and impacts that I can be

214

00:10:06,940 --> 00:10:04,040

part of but you know for a world leader

215

00:10:09,730 --> 00:10:06,950

who's making policy that will affect the

216

00:10:12,370 --> 00:10:09,740

lives of hundreds of millions or to

217

00:10:14,770 --> 00:10:12,380

billions of people you know being able

218

00:10:17,620 --> 00:10:14,780

to look at the world in that perspective

219

00:10:21,190 --> 00:10:17,630

and understanding how collaboration is

220

00:10:24,160 --> 00:10:21,200

needed and necessary in order for us to

221

00:10:26,310 --> 00:10:24,170

continue to have this planet as our home

222

00:10:29,980 --> 00:10:26,320

a place that we can all live together

223

00:10:33,580 --> 00:10:29,990

you know it would be very important so

224

00:10:36,700 --> 00:10:33,590

this type of an experience a shift in

225

00:10:39,850 --> 00:10:36,710

perspective is at the core of our

226

00:10:41,380 --> 00:10:39,860

decision-making and that's why people

227

00:10:43,930 --> 00:10:41,390

who are making very important decisions

228

00:10:46,000 --> 00:10:43,940

would be great if we can have them have

229

00:10:48,760 --> 00:10:46,010

this type of experience yeah I mean it

230

00:10:50,620 --> 00:10:48,770

sounds very idealist and today we have

231

00:10:53,800 --> 00:10:50,630

institutions like the United Nations

232

00:10:55,360 --> 00:10:53,810

which is kind of a mess right so that's

233

00:10:57,250 --> 00:10:55,370

why I'm trying to understand is how do

234

00:11:00,370 --> 00:10:57,260

we take this philosophical standpoint

235

00:11:04,030 --> 00:11:00,380

and make it practical so it really makes

236

00:11:05,550 --> 00:11:04,040

a difference so we've had ideas I'm part

237

00:11:08,700 --> 00:11:05,560

of a group of

238

00:11:10,470 --> 00:11:08,710

no astronauts that because ourselves

239

00:11:13,470 --> 00:11:10,480

constellation and we want to grow this

240

00:11:15,480 --> 00:11:13,480

group and we just actually announced our

241

00:11:20,070 --> 00:11:15,490

work in trying to bring this experience

242

00:11:23,940 --> 00:11:20,080

to everyone and there are technologies

243

00:11:26,310 --> 00:11:23,950

like VR and AR that we can use there are

244

00:11:28,200 --> 00:11:26,320

other ideas we have in educating people

245

00:11:31,680 --> 00:11:28,210

and taking them through this journey

246

00:11:35,010 --> 00:11:31,690

that we went on but giving them slight

247

00:11:36,780 --> 00:11:35,020

experiences through storytelling to help

248

00:11:39,120 --> 00:11:36,790

them realize you talk about the movie

249

00:11:41,700 --> 00:11:39,130

gravity and how it helps you get a

250

00:11:44,130 --> 00:11:41,710

glimpse of that so that's one movie but

251
00:11:46,920 --> 00:11:44,140
are there more immersive experiences

252
00:11:49,410 --> 00:11:46,930
that we can create that will allow

253
00:11:53,160 --> 00:11:49,420
someone who has not been on Space

254
00:11:56,070 --> 00:11:53,170
Station feel like they can see the world

255
00:11:58,650 --> 00:11:56,080
as a whole and experience that MA bottom

256
00:12:00,720 --> 00:11:58,660
line what is the shift that you're want

257
00:12:02,400 --> 00:12:00,730
to achieve as far as people's thinking I

258
00:12:03,600 --> 00:12:02,410
mean obviously generally speaking to

259
00:12:07,350 --> 00:12:03,610
think more globally but what does that

260
00:12:10,380 --> 00:12:07,360
really mean so we live in United States

261
00:12:13,650 --> 00:12:10,390
where we have access to a lot of things

262
00:12:16,770 --> 00:12:13,660
that's not part of everyday life of you

263
00:12:21,329 --> 00:12:16,780

know most of the people outside of this

264

00:12:25,410 --> 00:12:21,339

country we use energy we use earth's

265

00:12:27,380 --> 00:12:25,420

resources not thinking about well how

266

00:12:29,610 --> 00:12:27,390

long can we continue at this pace

267

00:12:33,180 --> 00:12:29,620

consuming this without thinking

268

00:12:35,190 --> 00:12:33,190

long-term so it actually shifts your

269

00:12:38,760 --> 00:12:35,200

point of view to be more conscious about

270

00:12:42,990 --> 00:12:38,770

your everyday decisions in helping you

271

00:12:45,000 --> 00:12:43,000

think long-term think about yeah I can

272

00:12:47,400 --> 00:12:45,010

decide that you know I don't care about

273

00:12:50,370 --> 00:12:47,410

how the rest of the world lives and I'll

274

00:12:53,340 --> 00:12:50,380

continue to do what I'm doing but then

275

00:12:56,340 --> 00:12:53,350

understand that very shortly all of that

276

00:12:58,230 --> 00:12:56,350

will basically impact you as well so

277

00:13:01,290 --> 00:12:58,240

it's not like we all live in our own

278

00:13:04,170 --> 00:13:01,300

cocoon and we're isolated from the rest

279

00:13:06,570 --> 00:13:04,180

of the world ignoring it doesn't make it

280

00:13:09,390 --> 00:13:06,580

go away we are interconnected whether we

281

00:13:10,610 --> 00:13:09,400

like it or not we are decisions impact

282

00:13:13,010 --> 00:13:10,620

everyone whether they rely

283

00:13:15,830 --> 00:13:13,020

kid or not so realizing that

284

00:13:18,320 --> 00:13:15,840

understanding it accepting it and making

285

00:13:20,240 --> 00:13:18,330

it part of the everyday decision you

286

00:13:22,040 --> 00:13:20,250

make it's important and it has different

287

00:13:25,580 --> 00:13:22,050

meanings for different people as I said

288

00:13:29,510 --> 00:13:25,590

someone who is a leader within a large

289

00:13:32,000 --> 00:13:29,520

industry or for a country or someone

290

00:13:34,250 --> 00:13:32,010

who's represented by United Nations

291

00:13:36,320 --> 00:13:34,260

you know the decisions they make have

292

00:13:38,870 --> 00:13:36,330

huge impact in the world long term

293

00:13:43,490 --> 00:13:38,880

impact so that prospective shift at that

294

00:13:47,960 --> 00:13:43,500

level has a lot of meaning and long-term

295

00:13:49,790 --> 00:13:47,970

effect so it's important so is there a

296

00:13:53,000 --> 00:13:49,800

virtual reality project that would give

297

00:13:54,970 --> 00:13:53,010

people that that feeling yes and yes we

298

00:13:57,770 --> 00:13:54,980

are working on a few things

299

00:14:00,590 --> 00:13:57,780

collaborating with you know a lot of

300

00:14:03,830 --> 00:14:00,600

artists scientists filmmakers

301
00:14:05,930 --> 00:14:03,840
storytellers we're thinking about maybe

302
00:14:08,570 --> 00:14:05,940
even create collective you know

303
00:14:11,030 --> 00:14:08,580
experiences that people across the world

304
00:14:12,680 --> 00:14:11,040
can connect to a be your experience

305
00:14:15,590 --> 00:14:12,690
together and experiences together

306
00:14:17,630 --> 00:14:15,600
because one of the unique things being

307
00:14:19,670 --> 00:14:17,640
on the space station is that it's a

308
00:14:21,530 --> 00:14:19,680
collaborative effort between a lot of

309
00:14:24,490 --> 00:14:21,540
different nations so when I was there we

310
00:14:27,320 --> 00:14:24,500
had two Russian cosmonauts we had

311
00:14:32,840 --> 00:14:27,330
American Spanish astronaut we had a

312
00:14:34,490 --> 00:14:32,850
German astronaut and you know we spoke

313
00:14:37,850 --> 00:14:34,500

different languages we came from

314

00:14:39,620 --> 00:14:37,860

completely different backgrounds some of

315

00:14:41,900 --> 00:14:39,630

us had trouble speaking the other

316

00:14:44,300 --> 00:14:41,910

person's language different

317

00:14:47,060 --> 00:14:44,310

personalities and yet we all came

318

00:14:50,870 --> 00:14:47,070

together on this little home in space

319

00:14:53,000 --> 00:14:50,880

and we worked well together man and we

320

00:14:55,160 --> 00:14:53,010

figured out that we have to get along

321

00:14:58,840 --> 00:14:55,170

we're earthlings we were Earthlings

322

00:15:01,490 --> 00:14:58,850

Earthlings on this spaceship you know

323

00:15:04,220 --> 00:15:01,500

orbiting the Earth you know it reminds

324

00:15:06,920 --> 00:15:04,230

me of 9/11 as Horrible's that was is

325

00:15:09,050 --> 00:15:06,930

what the country was like after 9/11 and

326

00:15:12,260 --> 00:15:09,060

everybody really coming together albeit

327

00:15:14,750 --> 00:15:12,270

that's a country but bringing people

328

00:15:18,200 --> 00:15:14,760

together there's nothing more important

329

00:15:20,780 --> 00:15:18,210

than that right and to all be Earthlings

330

00:15:22,340 --> 00:15:20,790

together is the way to look at it I

331

00:15:24,020 --> 00:15:22,350

think that that VR thing would be

332

00:15:25,970 --> 00:15:24,030

awesome especially here

333

00:15:28,190 --> 00:15:25,980

about that you get a sunrise and sunset

334

00:15:31,310 --> 00:15:28,200

every 90 minutes you will you do a full

335

00:15:33,680 --> 00:15:31,320

loop around in 90 minutes yeah right so

336

00:15:35,600 --> 00:15:33,690

how long is the sunrise and how long is

337

00:15:38,060 --> 00:15:35,610

the sunset if it's taking you 90 minutes

338

00:15:40,580 --> 00:15:38,070

it's momentarily so you just you know

339

00:15:43,760 --> 00:15:40,590

get a glimpse of it but you know the

340

00:15:45,980 --> 00:15:43,770

colors are as beautiful you know as you

341

00:15:48,170 --> 00:15:45,990

can see it in any sunset or sunrise here

342

00:15:51,650 --> 00:15:48,180

on earth but a little different and it

343

00:15:53,930 --> 00:15:51,660

goes very quickly so you've achieved

344

00:15:57,710 --> 00:15:53,940

your dream what I'm really curious about

345

00:16:00,230 --> 00:15:57,720

is would obviously you want to go again

346

00:16:01,670 --> 00:16:00,240

do you want to go again as strongly as

347

00:16:03,980 --> 00:16:01,680

you wanted to go the first time in other

348

00:16:06,560 --> 00:16:03,990

words are you willing to die there I go

349

00:16:10,340 --> 00:16:06,570

again I am still willing to go if there

350

00:16:14,450 --> 00:16:10,350

is a mission to actually start maybe a

351

00:16:16,430 --> 00:16:14,460

new habitation on the moon on Mars

352

00:16:19,430 --> 00:16:16,440

I believe we first need to go to the

353

00:16:23,540 --> 00:16:19,440

moon I'll be happy to go as part of the

354

00:16:25,850 --> 00:16:23,550

first crew and and start it off I just

355

00:16:29,270 --> 00:16:25,860

felt you can become a Martian you're

356

00:16:32,590 --> 00:16:29,280

going to betray us I'll be an earth

357

00:16:37,100 --> 00:16:32,600

person you'll be an Earth Martian

358

00:16:39,920 --> 00:16:37,110

earthling Martian yes no I I my desire

359

00:16:45,170 --> 00:16:39,930

has intensified it and I would love to

360

00:16:47,240 --> 00:16:45,180

go back yeah so right now they've the

361

00:16:51,230 --> 00:16:47,250

next mission for someone who wants to be

362

00:16:53,060 --> 00:16:51,240

a space explorer is how soon when's the

363

00:16:57,110 --> 00:16:53,070

earliest somebody could become a space

364

00:16:59,000 --> 00:16:57,120

explorer well there are still seats that

365

00:17:03,290 --> 00:16:59,010

are commercially available anyone who

366

00:17:05,960 --> 00:17:03,300

wants to go I've heard of a I believe

367

00:17:12,079 --> 00:17:05,970

Japanese businessman who's planning to

368

00:17:14,540 --> 00:17:12,089

do a nooner trip with Elon I also know

369

00:17:16,550 --> 00:17:14,550

that the lunar trip mean landing no

370

00:17:20,630 --> 00:17:16,560

there right now they're only planning to

371

00:17:23,660 --> 00:17:20,640

just do as circumlunar trip which which

372

00:17:26,300 --> 00:17:23,670

you did not do I did not do yeah no I

373

00:17:30,470 --> 00:17:26,310

would love to go out and land on them of

374

00:17:34,130 --> 00:17:30,480

course why not but there's also we just

375

00:17:36,530 --> 00:17:34,140

I was in Mojave where Virgin Galactic

376

00:17:38,450 --> 00:17:36,540

did a successful test flight

377

00:17:41,570 --> 00:17:38,460

and actually I love what they're doing

378

00:17:43,490 --> 00:17:41,580

because it's a very short trip it will

379

00:17:46,010 --> 00:17:43,500

give you a glimpse of space you spend

380

00:17:49,340 --> 00:17:46,020

five minutes weightless and see the

381

00:17:53,600 --> 00:17:49,350

blackness of this the space and the sky

382

00:17:55,250 --> 00:17:53,610

and you know it will help you you know

383

00:17:57,860 --> 00:17:55,260

get a sense of what it means to be in

384

00:17:59,240 --> 00:17:57,870

space and it's because of the fact that

385

00:18:02,240 --> 00:17:59,250

it doesn't require a lot of training

386

00:18:04,340 --> 00:18:02,250

anyone can do it and it will be become

387

00:18:07,450 --> 00:18:04,350

more and more affordable to add that's

388

00:18:11,180 --> 00:18:07,460

kind of the least expensive right now

389

00:18:13,130 --> 00:18:11,190

well right nice \$250,000 I believe more

390

00:18:16,820 --> 00:18:13,140

equivalent and the whole trip is only a

391

00:18:20,060 --> 00:18:16,830

few hours yes a few hours and about five

392

00:18:22,130 --> 00:18:20,070

minutes of that you're in space so you

393

00:18:25,100 --> 00:18:22,140

don't even get the whole sunrise sunset

394

00:18:27,080 --> 00:18:25,110

thing no no you take off from the same

395

00:18:29,330 --> 00:18:27,090

location you land the same location you

396

00:18:32,720 --> 00:18:29,340

basically go out of the atmosphere and

397

00:18:35,150 --> 00:18:32,730

then you just return so compared to how

398

00:18:40,790 --> 00:18:35,160

far from Earth were you compared to that

399

00:18:45,890 --> 00:18:40,800

trip so that's about 60 mods or so and I

400

00:18:47,060 --> 00:18:45,900

went to 220 months and tell me what is

401
00:18:50,600 --> 00:18:47,070
going on with the International Space

402
00:18:53,990 --> 00:18:50,610
Station so International Space Station

403
00:18:56,870 --> 00:18:54,000
originally was put together by about 15

404
00:19:01,010 --> 00:18:56,880
countries it was supposed to last for 15

405
00:19:02,990 --> 00:19:01,020
years the life time of that has been

406
00:19:06,590 --> 00:19:03,000
extended of course so it's still you

407
00:19:09,170 --> 00:19:06,600
know orbiting and being a home for a lot

408
00:19:11,180 --> 00:19:09,180
of experiments and it used to be that

409
00:19:13,430 --> 00:19:11,190
the shuttle would dock there yeah so

410
00:19:15,800 --> 00:19:13,440
should the shuttle was actually made if

411
00:19:19,850 --> 00:19:15,810
you looked at the shuttle most of it was

412
00:19:21,920 --> 00:19:19,860
like a cargo ship where it was designed

413
00:19:23,870 --> 00:19:21,930

to carry pieces of the space space was

414

00:19:26,360 --> 00:19:23,880

sorry so the space station was built by

415

00:19:28,340 --> 00:19:26,370

the shuttles the shuttle carry tsa's of

416

00:19:31,340 --> 00:19:28,350

the space station and in other countries

417

00:19:34,070 --> 00:19:31,350

have shuttles no but the other countries

418

00:19:35,900 --> 00:19:34,080

also launched some pieces and then they

419

00:19:38,120 --> 00:19:35,910

also launched some pieces with the

420

00:19:40,220 --> 00:19:38,130

shuttle so the Russians actually

421

00:19:43,070 --> 00:19:40,230

launched the first part of the space

422

00:19:45,520 --> 00:19:43,080

station without the shuttle and so

423

00:19:48,550 --> 00:19:45,530

different pieces from Canada

424

00:19:50,860 --> 00:19:48,560

European Space Agency from us from

425

00:19:52,750 --> 00:19:50,870

Russia they were all sort of launched

426
00:19:54,910 --> 00:19:52,760
into space through the shuttle or other

427
00:19:57,490 --> 00:19:54,920
programs and you know actually we're

428
00:19:59,410 --> 00:19:57,500
assembled in space so imagine if all

429
00:20:01,360 --> 00:19:59,420
these nations can build things and

430
00:20:03,550 --> 00:20:01,370
assemble them in space well I can't be

431
00:20:05,170 --> 00:20:03,560
figure out what torque now whereas you

432
00:20:06,940 --> 00:20:05,180
didn't go up in a space shuttle you know

433
00:20:10,780 --> 00:20:06,950
I've been on rocket yes

434
00:20:13,270 --> 00:20:10,790
a Russian rocket and none of that rocket

435
00:20:16,090 --> 00:20:13,280
exists anymore right it all goes bye-bye

436
00:20:17,890 --> 00:20:16,100
yes it's not reusable and that's part of

437
00:20:20,680 --> 00:20:17,900
the reason why it's expensive and why

438
00:20:23,860 --> 00:20:20,690

the work of companies like SpaceX or

439

00:20:26,140 --> 00:20:23,870

Blue Origin to create reusable access to

440

00:20:28,990 --> 00:20:26,150

space is important because it reduces

441

00:20:31,120 --> 00:20:29,000

the cost and it makes it safer because

442

00:20:33,880 --> 00:20:31,130

we can reuse it and do it more often

443

00:20:36,370 --> 00:20:33,890

and it opens up a whole new way of maybe

444

00:20:38,440 --> 00:20:36,380

using space resources to help solve our

445

00:20:41,080 --> 00:20:38,450

problem here on earth so the technology

446

00:20:43,510 --> 00:20:41,090

that you were in was not current

447

00:20:45,820 --> 00:20:43,520

technology right it was all technology

448

00:20:47,500 --> 00:20:45,830

it was all technology it was I launched

449

00:20:49,690 --> 00:20:47,510

from the same place Yuri Gagarin the

450

00:20:52,000 --> 00:20:49,700

first man who went to space launch bomb

451
00:20:54,310 --> 00:20:52,010
so a lot of the technology Kazakhstan in

452
00:20:56,440 --> 00:20:54,320
Kazakhstan if you look at his launch and

453
00:20:58,470 --> 00:20:56,450
look at my launch there's not a lot of

454
00:21:01,390 --> 00:20:58,480
difference basically when you look at it

455
00:21:02,740 --> 00:21:01,400
so now how about the landing because I

456
00:21:05,290 --> 00:21:02,750
saw your landing it looked a little

457
00:21:07,810 --> 00:21:05,300
rough yes people people need to see this

458
00:21:09,460 --> 00:21:07,820
they can see it on the documentary is it

459
00:21:12,910 --> 00:21:09,470
was it two space tourists yes

460
00:21:14,350 --> 00:21:12,920
documentary yes but first of all why

461
00:21:16,300 --> 00:21:14,360
didn't you guys land in the water that's

462
00:21:18,670 --> 00:21:16,310
where the Apollo used to land right yes

463
00:21:20,830 --> 00:21:18,680

so because these are these launches

464

00:21:23,140 --> 00:21:20,840

happen from Kazakhstan there's not a lot

465

00:21:28,570 --> 00:21:23,150

of large bodies of water right next you

466

00:21:32,170 --> 00:21:28,580

find a lake yes so it's a landing on the

467

00:21:33,400 --> 00:21:32,180

ground so it's a little rough I mean how

468

00:21:35,620 --> 00:21:33,410

fast were you guys going it almost

469

00:21:38,440 --> 00:21:35,630

looked like the parachute wasn't working

470

00:21:40,990 --> 00:21:38,450

I mean that was serious impact right yes

471

00:21:44,020 --> 00:21:41,000

were you expecting that I thought that

472

00:21:47,020 --> 00:21:44,030

it would be softer but but I was warned

473

00:21:49,990 --> 00:21:47,030

that it will be impact for it I describe

474

00:21:53,160 --> 00:21:50,000

it it felt like a car crash yeah so I

475

00:21:56,700 --> 00:21:53,170

had actually bruises from my

476

00:22:00,210 --> 00:21:56,710

seat belt the harness on because of the

477

00:22:02,490 --> 00:22:00,220

landing but you know it's part of you

478

00:22:05,610 --> 00:22:02,500

know the fun of going to space so when

479

00:22:08,580 --> 00:22:05,620

you came back did you have the Sandra

480

00:22:09,690 --> 00:22:08,590

Bullock feeling of kissing Earth I

481

00:22:11,490 --> 00:22:09,700

missed you so much

482

00:22:14,250 --> 00:22:11,500

or were you kind of feeling more at home

483

00:22:17,880 --> 00:22:14,260

where you were good question

484

00:22:20,460 --> 00:22:17,890

I actually I was sad I was sad that I

485

00:22:23,910 --> 00:22:20,470

was back on earth not that I didn't miss

486

00:22:26,910 --> 00:22:23,920

earth because the smells of the ground

487

00:22:29,730 --> 00:22:26,920

and the early morning Sun and the breeze

488

00:22:31,710 --> 00:22:29,740

was really special

489

00:22:35,520 --> 00:22:31,720

when I first first pulled out of the

490

00:22:38,160 --> 00:22:35,530

capsule but at the same time I mean all

491

00:22:40,860 --> 00:22:38,170

of my life I had this like big dream of

492

00:22:42,960 --> 00:22:40,870

going to space and you know here I was I

493

00:22:46,980 --> 00:22:42,970

had just come back and I finished it and

494

00:22:49,410 --> 00:22:46,990

I'm like okay what do I do now so and I

495

00:22:51,540 --> 00:22:49,420

missed it I and and part of not being a

496

00:22:53,220 --> 00:22:51,550

professional astronaut it meant that I

497

00:22:54,630 --> 00:22:53,230

didn't know if there will be another

498

00:22:56,430 --> 00:22:54,640

mission if you're a professional

499

00:22:58,770 --> 00:22:56,440

astronaut you land and you think okay

500

00:23:00,990 --> 00:22:58,780

I'm gonna work on my next mission but

501
00:23:03,600 --> 00:23:01,000
for me it was like you know will I be

502
00:23:06,150 --> 00:23:03,610
able able to experience that again and

503
00:23:09,630 --> 00:23:06,160
not knowing it was hard I was really

504
00:23:11,850 --> 00:23:09,640
depressed and sad but you got 11 days up

505
00:23:14,610 --> 00:23:11,860
there which is not bad compared to

506
00:23:17,610 --> 00:23:14,620
others and then speaking of smell you

507
00:23:19,200 --> 00:23:17,620
talked about the smell of space yes I've

508
00:23:23,250 --> 00:23:19,210
never thought about the smell of space

509
00:23:25,950 --> 00:23:23,260
before but tell us about that so when we

510
00:23:28,290 --> 00:23:25,960
first talked to the space station you

511
00:23:30,930 --> 00:23:28,300
know the two sides come together and

512
00:23:32,610 --> 00:23:30,940
because of the way that the hatches are

513
00:23:34,980 --> 00:23:32,620

shaped there's sort of like you

514

00:23:37,560 --> 00:23:34,990

encapsulate part of space between the

515

00:23:40,650 --> 00:23:37,570

two doors before they open and usually

516

00:23:43,260 --> 00:23:40,660

you open the hatch on the Soyuz side

517

00:23:44,730 --> 00:23:43,270

first so my crewmates had fun with me

518

00:23:46,530 --> 00:23:44,740

they said you know I know come and

519

00:23:48,510 --> 00:23:46,540

you can't smell space I'm like humble I

520

00:23:50,700 --> 00:23:48,520

smell spaces and I've just come here

521

00:23:53,280 --> 00:23:50,710

when you open the door there's a space

522

00:23:55,080 --> 00:23:53,290

between the two doors so when they open

523

00:23:57,420 --> 00:23:55,090

then I smelled it they said okay so what

524

00:24:00,150 --> 00:23:57,430

do you smell and I said well it smells

525

00:24:02,460 --> 00:24:00,160

like a burnt almond cookie and they're

526

00:24:04,260 --> 00:24:02,470

like burnt almond cookies and that

527

00:24:05,180 --> 00:24:04,270

actually became part of my blog that

528

00:24:08,150 --> 00:24:05,190

everyone's like

529

00:24:11,090 --> 00:24:08,160

burnt all my cookie and later on others

530

00:24:13,790 --> 00:24:11,100

don't agree with that well because I was

531

00:24:15,800 --> 00:24:13,800

so specific why and then I tried to

532

00:24:17,930 --> 00:24:15,810

figure out why and I realized that

533

00:24:21,830 --> 00:24:17,940

there's a little bit of a cyanide in

534

00:24:24,470 --> 00:24:21,840

there in the you know the fuel that they

535

00:24:27,920 --> 00:24:24,480

used to burn the trusters and that

536

00:24:30,860 --> 00:24:27,930

almonds now comes from that little

537

00:24:32,390 --> 00:24:30,870

cyanide that's in a few and then it was

538

00:24:34,040 --> 00:24:32,400

because of this so you did necessarily

539

00:24:36,260 --> 00:24:34,050

small space you smelled stuff coming out

540

00:24:38,600 --> 00:24:36,270

of the space they say yes out of the

541

00:24:40,490 --> 00:24:38,610

trusters the way we were docking to

542

00:24:44,390 --> 00:24:40,500

space station so that's why it smelled

543

00:24:45,650 --> 00:24:44,400

like that but yes so that the

544

00:24:47,870 --> 00:24:45,660

International Space Station is the only

545

00:24:50,060 --> 00:24:47,880

space station up there yes okay because

546

00:24:51,410 --> 00:24:50,070

I wanted to fact-check gravity the movie

547

00:24:53,770 --> 00:24:51,420

a little bit because they talked about a

548

00:24:56,660 --> 00:24:53,780

Chinese space no actually yes so that

549

00:24:58,670 --> 00:24:56,670

the space station the international

550

00:25:02,270 --> 00:24:58,680

space station there is one China has

551
00:25:04,940 --> 00:25:02,280
launched their station also in the past

552
00:25:08,930 --> 00:25:04,950
that you know it's only used by the

553
00:25:11,870 --> 00:25:08,940
Chinese astronauts and they've done

554
00:25:13,430 --> 00:25:11,880
their own experiments so one of the

555
00:25:15,860 --> 00:25:13,440
things that we haven't done a good job

556
00:25:18,170 --> 00:25:15,870
is actually collaborating with the

557
00:25:21,400 --> 00:25:18,180
Chinese in our space program so I'm

558
00:25:22,880 --> 00:25:21,410
hoping that it will happen what about

559
00:25:25,100 --> 00:25:22,890
George Clooney

560
00:25:27,590 --> 00:25:25,110
you know you zoom in around out there I

561
00:25:30,590 --> 00:25:27,600
mean that that's that's real or the

562
00:25:33,200 --> 00:25:30,600
other space suits yes you have you have

563
00:25:36,320 --> 00:25:33,210

jetpacks that you can actually maneuver

564

00:25:38,270 --> 00:25:36,330

and fly independently in a space suit

565

00:25:41,630 --> 00:25:38,280

was any of that happening while you were

566

00:25:44,270 --> 00:25:41,640

on the space station there were no

567

00:25:46,700 --> 00:25:44,280

spacewalks when I was on during those 11

568

00:25:48,770 --> 00:25:46,710

days but there has been spacewalks in

569

00:25:50,930 --> 00:25:48,780

the space what's happened all the time

570

00:25:54,190 --> 00:25:50,940

where there's to repair something to

571

00:25:57,170 --> 00:25:54,200

install a new instrument for experiments

572

00:25:59,210 --> 00:25:57,180

so it happens all the time I would love

573

00:26:02,090 --> 00:25:59,220

to do a spacewalk but I've never done

574

00:26:03,890 --> 00:26:02,100

one yeah that costs a little bit more it

575

00:26:05,330 --> 00:26:03,900

doesn't it requires a lot more training

576

00:26:07,910 --> 00:26:05,340

yeah well that was another question I

577

00:26:09,710 --> 00:26:07,920

have for you so in the movie you've got

578

00:26:11,090 --> 00:26:09,720

Clooney is the experienced astronaut and

579

00:26:12,560 --> 00:26:11,100

Sandra Bullock I'm not sure exactly what

580

00:26:16,190 --> 00:26:12,570

her training was but clearly it was less

581

00:26:18,260 --> 00:26:16,200

but she manages without George to get

582

00:26:18,890 --> 00:26:18,270

back to earth and and fly this thing

583

00:26:20,270 --> 00:26:18,900

over to the

584

00:26:22,400 --> 00:26:20,280

Chinese shuttle and then get on that and

585

00:26:24,080 --> 00:26:22,410

get but I was just curious what training

586

00:26:25,790 --> 00:26:24,090

would you have had I mean of somehow

587

00:26:28,460 --> 00:26:25,800

something horrible had happened up there

588

00:26:30,080 --> 00:26:28,470

and you got to get back would you have

589

00:26:34,640 --> 00:26:30,090

had the skill set to figure out how to

590

00:26:36,260 --> 00:26:34,650

get back so anyone who tries or flies to

591

00:26:38,030 --> 00:26:36,270

space they have to go to the same

592

00:26:42,020 --> 00:26:38,040

training so I went to the same training

593

00:26:43,700 --> 00:26:42,030

as the astronauts did but you know in in

594

00:26:45,530 --> 00:26:43,710

your movie example Clooney is a

595

00:26:48,530 --> 00:26:45,540

commander so they went through a lot

596

00:26:51,710 --> 00:26:48,540

longer training more intense training

597

00:26:54,560 --> 00:26:51,720

and Sandra is the sort of a scientist

598

00:26:56,420 --> 00:26:54,570

who's on this mission and in the real

599

00:26:59,840 --> 00:26:56,430

world we call it the spaceflight

600

00:27:02,480 --> 00:26:59,850

participants so people who you know

601
00:27:04,850 --> 00:27:02,490
still have a mission and they go as a

602
00:27:06,440 --> 00:27:04,860
full astronaut but they have like a

603
00:27:09,500 --> 00:27:06,450
scientific mission for example to

604
00:27:12,080 --> 00:27:09,510
accomplish so I trained as a you know

605
00:27:14,930 --> 00:27:12,090
spaceflight participant I spent about a

606
00:27:16,390 --> 00:27:14,940
year in Russia training preparing for

607
00:27:19,250 --> 00:27:16,400
the flights at the same training that

608
00:27:22,520 --> 00:27:19,260
astronauts go through and learn how to

609
00:27:25,460 --> 00:27:22,530
operate the instruments inside the Soyuz

610
00:27:28,550 --> 00:27:25,470
on the space station one thing about the

611
00:27:31,880 --> 00:27:28,560
Soyuz is that and that's why it's the

612
00:27:35,120 --> 00:27:31,890
scape capsule for the space station is

613
00:27:36,860 --> 00:27:35,130

that you basically as a last resort if

614

00:27:40,610 --> 00:27:36,870

everything goes wrong you press a button

615

00:27:43,100 --> 00:27:40,620

and it just you know heads back home and

616

00:27:46,580 --> 00:27:43,110

it lands on earth that's what you used

617

00:27:49,190 --> 00:27:46,590

if if it's an emergency it will just you

618

00:27:51,770 --> 00:27:49,200

can have that emergency landing it will

619

00:27:54,830 --> 00:27:51,780

not be pleasant it will be very rough

620

00:27:56,630 --> 00:27:54,840

the g-forces we'll be extreme so when

621

00:27:59,450 --> 00:27:56,640

you land you won't be able to just get

622

00:28:01,010 --> 00:27:59,460

out like Sandra Bullock and walk so you

623

00:28:03,920 --> 00:28:01,020

would be a little bit unconscious which

624

00:28:06,770 --> 00:28:03,930

I used in the movie the escape what did

625

00:28:09,950 --> 00:28:06,780

you use so I we came back with the Soyuz

626
00:28:12,740 --> 00:28:09,960
as well but we came to a planned landing

627
00:28:14,780 --> 00:28:12,750
so when you do a planned landing you do

628
00:28:17,930 --> 00:28:14,790
couple of orbits and then you come down

629
00:28:20,750 --> 00:28:17,940
slower so your trajectory is in a way

630
00:28:23,180 --> 00:28:20,760
that you have less g-forces on your body

631
00:28:25,580 --> 00:28:23,190
so even though it's a rough landing it's

632
00:28:28,730 --> 00:28:25,590
you know compared to the alternative

633
00:28:31,010 --> 00:28:28,740
emergency landing it's a pleasant easier

634
00:28:33,290 --> 00:28:31,020
softer land so how many people have done

635
00:28:37,350 --> 00:28:33,300
the trip that you've done

636
00:28:39,450 --> 00:28:37,360
as a passenger paying passenger as the

637
00:28:43,500 --> 00:28:39,460
paying passenger I think seven

638
00:28:47,340 --> 00:28:43,510

passengers so far and who's selling

639

00:28:49,770 --> 00:28:47,350

those tickets space adventure was the

640

00:28:51,600 --> 00:28:49,780

company who negotiated with the Russians

641

00:28:54,780 --> 00:28:51,610

the first person who went was Dennis

642

00:28:59,280 --> 00:28:54,790

Tito who is a very famous businessman

643

00:29:02,160 --> 00:28:59,290

here actually in California and he

644

00:29:04,950 --> 00:29:02,170

worked with space adventures and they

645

00:29:06,240 --> 00:29:04,960

managed to negotiate the first contract

646

00:29:08,640 --> 00:29:06,250

with the Russian space so they're

647

00:29:10,470 --> 00:29:08,650

essentially middlemen they yes they buy

648

00:29:12,840 --> 00:29:10,480

the seats and then they sell the seat

649

00:29:14,370 --> 00:29:12,850

who want to go uh-huh and they make sure

650

00:29:18,420 --> 00:29:14,380

they're always at full capacity and they

651
00:29:21,000 --> 00:29:18,430
discount the prices and the prices have

652
00:29:23,520 --> 00:29:21,010
gone up because you know because there's

653
00:29:25,980 --> 00:29:23,530
no longer a shuttle program now actually

654
00:29:28,410 --> 00:29:25,990
NASA astronauts buy tickets on the

655
00:29:31,110 --> 00:29:28,420
Russian space interesting through the

656
00:29:33,870 --> 00:29:31,120
same company no they buy directly so

657
00:29:35,910 --> 00:29:33,880
they get a bulk discount but that the

658
00:29:39,920 --> 00:29:35,920
point is that a lot of the seats are now

659
00:29:42,290 --> 00:29:39,930
sold to European Space Agency and NASA

660
00:29:45,570 --> 00:29:42,300
so they're not a lot of seats for

661
00:29:49,380 --> 00:29:45,580
commercial passengers so the u.s. right

662
00:29:51,480 --> 00:29:49,390
now NASA could not send a rocket up to

663
00:29:53,850 --> 00:29:51,490

the US they are working on their own

664

00:29:57,660 --> 00:29:53,860

rockets so there's something similar to

665

00:30:00,720 --> 00:29:57,670

the Atlas Rockets so the design of what

666

00:30:04,200 --> 00:30:00,730

NASA is working on is going back to the

667

00:30:07,530 --> 00:30:04,210

Apollo type of capsule and rockets but

668

00:30:11,160 --> 00:30:07,540

reusable rockets they also contract with

669

00:30:13,410 --> 00:30:11,170

companies like Blue Origin and SpaceX

670

00:30:16,650 --> 00:30:13,420

so there's a commercial program now

671

00:30:19,980 --> 00:30:16,660

building you know launches to the space

672

00:30:22,560 --> 00:30:19,990

station so for example SpaceX has the

673

00:30:25,350 --> 00:30:22,570

Dragon capsule even though it hasn't

674

00:30:27,630 --> 00:30:25,360

carried passengers it is built to carry

675

00:30:31,230 --> 00:30:27,640

passengers an astronaut to space station

676

00:30:34,080 --> 00:30:31,240

so I think they have plans to do

677

00:30:36,060 --> 00:30:34,090

actually a manned space flight in the

678

00:30:37,410 --> 00:30:36,070

next couple of years I believe so what

679

00:30:38,760 --> 00:30:37,420

would you say is the most important

680

00:30:41,070 --> 00:30:38,770

thing happening at that space station

681

00:30:42,630 --> 00:30:41,080

right now it might say right now not

682

00:30:45,120 --> 00:30:42,640

literally today but you know in general

683

00:30:48,060 --> 00:30:45,130

in the past couple years and going for

684

00:30:50,100 --> 00:30:48,070

what are they doing it's a lot of their

685

00:30:53,580 --> 00:30:50,110

two types of research that I think is

686

00:30:55,430 --> 00:30:53,590

very important one research is regarding

687

00:30:58,650 --> 00:30:55,440

a lot of medical and health-related

688

00:31:01,530 --> 00:30:58,660

research because in the microgravity of

689

00:31:03,720 --> 00:31:01,540

space you can design a lot of new

690

00:31:06,120 --> 00:31:03,730

treatments and drugs and you know you

691

00:31:08,400 --> 00:31:06,130

can form crystals that you can form here

692

00:31:10,560 --> 00:31:08,410

on earth so there's a lot of health and

693

00:31:12,930 --> 00:31:10,570

health is that because of zero gravity

694

00:31:15,060 --> 00:31:12,940

yes the microgravity but we can't create

695

00:31:19,380 --> 00:31:15,070

zero gravity on earth to do the same no

696

00:31:22,070 --> 00:31:19,390

no these suborbital flights for example

697

00:31:25,320 --> 00:31:22,080

are also interesting ways of doing

698

00:31:27,060 --> 00:31:25,330

experiments you know in basically the

699

00:31:30,570 --> 00:31:27,070

plane goes into a deep dive to create

700

00:31:32,640 --> 00:31:30,580

zero gravity yeah so so that's one area

701

00:31:35,100 --> 00:31:32,650

the other area is we're doing a lot of

702

00:31:37,020 --> 00:31:35,110

experiments so with closed loop systems

703

00:31:40,040 --> 00:31:37,030

because if you want to create a base on

704

00:31:42,750 --> 00:31:40,050

Moon or Mars we need to be able to

705

00:31:44,700 --> 00:31:42,760

sustain life without having to carry

706

00:31:47,580 --> 00:31:44,710

things constantly from Earth of course

707

00:31:50,700 --> 00:31:47,590

that would you know work so creating

708

00:31:54,360 --> 00:31:50,710

closed loop systems where we can you

709

00:31:57,090 --> 00:31:54,370

know generate enough food energy water

710

00:31:59,550 --> 00:31:57,100

and other means that's to sustain life

711

00:32:01,770 --> 00:31:59,560

without having to bring external

712

00:32:03,600 --> 00:32:01,780

resources it's another set of

713

00:32:06,540 --> 00:32:03,610

experiences and experiments that's

714

00:32:08,400 --> 00:32:06,550

happening on space station so going back

715

00:32:12,180 --> 00:32:08,410

to fact checking gravity in the movie

716

00:32:15,630 --> 00:32:12,190

Russia shoots down its own satellite

717

00:32:17,400 --> 00:32:15,640

I think supposedly because there's it's

718

00:32:20,280 --> 00:32:17,410

gone bad or there's information they

719

00:32:22,770 --> 00:32:20,290

want to get rid of first of all is that

720

00:32:25,770 --> 00:32:22,780

is it possible for to shoot down a

721

00:32:27,750 --> 00:32:25,780

satellite from Earth you wouldn't shoot

722

00:32:30,840 --> 00:32:27,760

down you would just disabled so it will

723

00:32:33,300 --> 00:32:30,850

deorbit and burn down and in space so I

724

00:32:35,820 --> 00:32:33,310

think so a lot of things that happen in

725

00:32:37,410 --> 00:32:35,830

the movie gravity it can happen the fact

726

00:32:39,270 --> 00:32:37,420

that it all happened and everything was

727

00:32:40,910 --> 00:32:39,280

so close and you could jump from one to

728

00:32:43,950 --> 00:32:40,920

the other that part of it was not

729

00:32:45,480 --> 00:32:43,960

necessarily true but you know the space

730

00:32:47,280 --> 00:32:45,490

station the depiction of the space

731

00:32:49,380 --> 00:32:47,290

station the inside of space station a

732

00:32:51,180 --> 00:32:49,390

lot of the scenery were you know

733

00:32:53,160 --> 00:32:51,190

actually things that were provided by

734

00:32:54,600 --> 00:32:53,170

them it is it orbiting where all the

735

00:32:57,360 --> 00:32:54,610

satellites are orbiting or is that all

736

00:32:59,400 --> 00:32:57,370

different different levels so

737

00:33:01,860 --> 00:32:59,410

depending on the satellites they orbit

738

00:33:04,920 --> 00:33:01,870

at different levels so the geostationary

739

00:33:07,380 --> 00:33:04,930

satellites are much higher so they can

740

00:33:09,980 --> 00:33:07,390

stay over the same place on earth as the

741

00:33:13,260 --> 00:33:09,990

earth move so it's in the same location

742

00:33:16,290 --> 00:33:13,270

and you have low Earth orbit satellites

743

00:33:18,960 --> 00:33:16,300

that would then you know basically cover

744

00:33:22,770 --> 00:33:18,970

a larger area of Earth so they can do

745

00:33:25,320 --> 00:33:22,780

imagery and surveillance over wider area

746

00:33:27,150 --> 00:33:25,330

but not all the time and then you have

747

00:33:30,410 --> 00:33:27,160

constellation of satellites that are

748

00:33:34,200 --> 00:33:30,420

used for communication for broadcasting

749

00:33:35,730 --> 00:33:34,210

for different activities GPS satellite

750

00:33:38,610 --> 00:33:35,740

system you have military satellite

751
00:33:40,440 --> 00:33:38,620
system it's very busy up there yeah so

752
00:33:43,290 --> 00:33:40,450
one of our satellites you're up there I

753
00:33:45,330 --> 00:33:43,300
don't know I don't know and the numbers

754
00:33:47,850 --> 00:33:45,340
are increasing because now you have nano

755
00:33:49,890 --> 00:33:47,860
SATs and CubeSat this really small

756
00:33:51,600 --> 00:33:49,900
satellites I mean high school students

757
00:33:53,520 --> 00:33:51,610
are building satellites now and you can

758
00:33:55,260 --> 00:33:53,530
launch them easily

759
00:33:57,180 --> 00:33:55,270
they're very satellites that were

760
00:33:58,620 --> 00:33:57,190
experimental satellites by high school

761
00:34:00,510 --> 00:33:58,630
suits that were launched from the space

762
00:34:04,919 --> 00:34:00,520
station actually just you know sort of

763
00:34:08,730 --> 00:34:04,929

shot out of back up the space station so

764

00:34:11,310 --> 00:34:08,740

the whole orbital debris issue is

765

00:34:13,320 --> 00:34:11,320

becoming a big issue because in space

766

00:34:15,330 --> 00:34:13,330

even a smallest thing that would hit the

767

00:34:18,389 --> 00:34:15,340

hall of the space station can create a

768

00:34:19,800 --> 00:34:18,399

hole and create a lot of problems has it

769

00:34:22,830 --> 00:34:19,810

ever been hit by anything you know yes

770

00:34:25,590 --> 00:34:22,840

yes there has been incidents and what is

771

00:34:29,700 --> 00:34:25,600

the debris from a comet or something it

772

00:34:32,669 --> 00:34:29,710

could be pieces of you know space debris

773

00:34:35,460 --> 00:34:32,679

from a satellite the orbiting could be

774

00:34:38,940 --> 00:34:35,470

just it's been hit more than once or yes

775

00:34:41,310 --> 00:34:38,950

Wow and depending on the speed of these

776

00:34:43,409 --> 00:34:41,320

things you know even a small rock can

777

00:34:45,600 --> 00:34:43,419

make a hole because the hall is not that

778

00:34:48,000 --> 00:34:45,610

thick actually the whole of the space

779

00:34:49,919 --> 00:34:48,010

station so there has been issues things

780

00:34:55,020 --> 00:34:49,929

hitting the end dissolve any way of

781

00:34:58,200 --> 00:34:55,030

detecting that incoming some the bigger

782

00:35:00,450 --> 00:34:58,210

pieces yes smaller pieces know if

783

00:35:03,030 --> 00:35:00,460

there's a big piece of space debris or

784

00:35:05,849 --> 00:35:03,040

something coming there's a ability to

785

00:35:08,040 --> 00:35:05,859

maneuver a little bit to change orbit a

786

00:35:09,180 --> 00:35:08,050

little bit and maneuver around objects

787

00:35:13,320 --> 00:35:09,190

but

788

00:35:16,290 --> 00:35:13,330

not easy so the dangers are there in

789

00:35:17,910 --> 00:35:16,300

space there's a lot of collaboration

790

00:35:20,280 --> 00:35:17,920

between different entities to make sure

791

00:35:22,080 --> 00:35:20,290

things don't collide in space a lot of

792

00:35:24,840 --> 00:35:22,090

these big satellite communication

793

00:35:27,180 --> 00:35:24,850

satellites are expensive so they're

794

00:35:29,040 --> 00:35:27,190

they're standards where there is

795

00:35:31,740 --> 00:35:29,050

communication between different

796

00:35:33,870 --> 00:35:31,750

countries to make sure that they stay in

797

00:35:34,620 --> 00:35:33,880

the same you know place they're supposed

798

00:35:37,700 --> 00:35:34,630

to

799

00:35:42,210 --> 00:35:37,710

when they need an FAA of space

800

00:35:44,700 --> 00:35:42,220

right but it doesn't really exist not

801
00:35:47,250 --> 00:35:44,710
the FAA of space but there is you know

802
00:35:49,350 --> 00:35:47,260
the same way that lots of different

803
00:35:51,750 --> 00:35:49,360
governments collaborate regarding

804
00:35:53,220 --> 00:35:51,760
resources in Antarctica I mean are the

805
00:35:54,480 --> 00:35:53,230
rules like for instance okay these type

806
00:35:55,890 --> 00:35:54,490
of satellites are supposed to fly from

807
00:35:58,110 --> 00:35:55,900
here to here and these from here to here

808
00:36:00,090 --> 00:35:58,120
yeah you register your orbit so there is

809
00:36:02,520 --> 00:36:00,100
a database of where all the satellites

810
00:36:06,210 --> 00:36:02,530
are which orbit and what is that entity

811
00:36:09,260 --> 00:36:06,220
that's regulating this it's more of a

812
00:36:12,150 --> 00:36:09,270
registration I think it's managed by

813
00:36:14,760 --> 00:36:12,160

United Nation and I cannot remember the

814

00:36:17,190 --> 00:36:14,770

name right now mm-hmm but it's it's

815

00:36:19,770 --> 00:36:17,200

there it's there so you have this dream

816

00:36:22,080 --> 00:36:19,780

that all the countries are gonna come

817

00:36:24,990 --> 00:36:22,090

together and work together in space to

818

00:36:28,530 --> 00:36:25,000

create all the citizens I ain't seen it

819

00:36:33,570 --> 00:36:28,540

I mean I'm seeing a space war I mean how

820

00:36:35,250 --> 00:36:33,580

do we avoid it being a space work and it

821

00:36:38,520 --> 00:36:35,260

aren't we already in a space where I

822

00:36:43,800 --> 00:36:38,530

don't think we're in a space war

823

00:36:46,770 --> 00:36:43,810

I think governments are using some of

824

00:36:51,780 --> 00:36:46,780

the space resources to gather

825

00:36:55,290 --> 00:36:51,790

intelligence but we have not weaponized

826

00:36:59,130 --> 00:36:55,300

space yet I hope we never swept in a

827

00:37:04,880 --> 00:36:59,140

space no one will win no one will win in

828

00:37:08,250 --> 00:37:04,890

that war and it's short-sighted it's I

829

00:37:11,910 --> 00:37:08,260

mean just if we were to learn from

830

00:37:14,440 --> 00:37:11,920

history name one war that we can say the

831

00:37:17,170 --> 00:37:14,450

result was good and there is

832

00:37:19,870 --> 00:37:17,180

there's never a good outcome from any

833

00:37:23,890 --> 00:37:19,880

war and they can be prevented and what

834

00:37:25,720 --> 00:37:23,900

do we fight over money money I mean

835

00:37:27,760 --> 00:37:25,730

there's a lot of money to be gained by

836

00:37:29,589 --> 00:37:27,770

being first in space at various things

837

00:37:33,400 --> 00:37:29,599

and now we have private enterprise

838

00:37:35,049 --> 00:37:33,410

involved so whenever you got money at

839

00:37:37,120 --> 00:37:35,059

stake people tend to fight but if you

840

00:37:39,460 --> 00:37:37,130

destroyed the thing that you would spend

841

00:37:41,589 --> 00:37:39,470

your money on well what good does it do

842

00:37:43,750 --> 00:37:41,599

if you have if I have billions of

843

00:37:46,030 --> 00:37:43,760

dollars but the entire earth is now

844

00:37:49,089 --> 00:37:46,040

destroyed what would I spend the money

845

00:37:52,990 --> 00:37:49,099

on yeah where would I drive my brand-new

846

00:37:55,210 --> 00:37:53,000

I don't know Tesla or Ferrari - I mean

847

00:37:57,130 --> 00:37:55,220

yeah well I mean let's put war aside but

848

00:37:58,750 --> 00:37:57,140

space race yeah you know we have a space

849

00:38:00,670 --> 00:37:58,760

race going on

850

00:38:03,370 --> 00:38:00,680

that's about money and that's about

851
00:38:05,349 --> 00:38:03,380
power and you know China very proudly

852
00:38:07,420 --> 00:38:05,359
announcing control it's not it's not

853
00:38:11,620 --> 00:38:07,430
just about money it's about control and

854
00:38:14,230 --> 00:38:11,630
fear and right now I know for whatever

855
00:38:15,460 --> 00:38:14,240
reason if you look at the early days of

856
00:38:18,010 --> 00:38:15,470
space program

857
00:38:20,079 --> 00:38:18,020
you know Sputnik was launched created

858
00:38:21,940 --> 00:38:20,089
fear because we didn't understand what

859
00:38:24,190 --> 00:38:21,950
is this thing beeping over our head and

860
00:38:26,650 --> 00:38:24,200
whether it's you know capturing our

861
00:38:30,520 --> 00:38:26,660
information you know sending brain waves

862
00:38:32,049 --> 00:38:30,530
to brainwash us we had no idea humans

863
00:38:35,530 --> 00:38:32,059

are afraid of things they don't

864

00:38:39,670 --> 00:38:35,540

understand on control so it instigated

865

00:38:42,370 --> 00:38:39,680

this race which actually advanced a lot

866

00:38:45,130 --> 00:38:42,380

of technologies in us and and you know

867

00:38:47,680 --> 00:38:45,140

the space race resulted in advancement

868

00:38:49,809 --> 00:38:47,690

in technology at the end of what

869

00:38:53,620 --> 00:38:49,819

happened is actually space program

870

00:38:59,500 --> 00:38:53,630

historically has been a place where we

871

00:39:02,940 --> 00:38:59,510

use it to actually resolve conflict so

872

00:39:08,260 --> 00:39:02,950

where there was the docking of the space

873

00:39:13,210 --> 00:39:08,270

of the shuttle with Mir or coming

874

00:39:16,480 --> 00:39:13,220

together of you know Russian space

875

00:39:19,630 --> 00:39:16,490

assets with us-based asset astronauts

876

00:39:25,020 --> 00:39:19,640

have been you know people who would help

877

00:39:27,870 --> 00:39:25,030

negotiate conflict areas so in general

878

00:39:29,670 --> 00:39:27,880

you know space has been a unifying

879

00:39:31,109 --> 00:39:29,680

factor certainly compared to ours

880

00:39:33,420 --> 00:39:31,119

certainly compared to what's going on a

881

00:39:35,970 --> 00:39:33,430

nurse is right right right so even in

882

00:39:38,220 --> 00:39:35,980

nations in conflict when you talk to the

883

00:39:40,980 --> 00:39:38,230

astronauts and the space program they

884

00:39:46,079 --> 00:39:40,990

find ways to work together so right now

885

00:39:49,109 --> 00:39:46,089

the race is between US and China and if

886

00:39:51,809 --> 00:39:49,119

you look at this race again same thing

887

00:39:55,349 --> 00:39:51,819

that happened in the past I don't see

888

00:39:57,569 --> 00:39:55,359

what is gained by you know elevating

889

00:39:59,519 --> 00:39:57,579

conflict between US and China nobody

890

00:40:01,230 --> 00:39:59,529

wins so you mentioned that there's a

891

00:40:02,400 --> 00:40:01,240

Chinese space station out there that it

892

00:40:03,690 --> 00:40:02,410

doesn't seem to interact with the other

893

00:40:07,430 --> 00:40:03,700

countries and sounds like you've raised

894

00:40:12,799 --> 00:40:11,249

from my understanding which is limited

895

00:40:15,870 --> 00:40:12,809

because I'm not in the space program

896

00:40:18,450 --> 00:40:15,880

that there has been interest to

897

00:40:23,670 --> 00:40:18,460

collaborate but there is a resistance on

898

00:40:26,249 --> 00:40:23,680

the US side to collaborate I think by

899

00:40:28,829 --> 00:40:26,259

collaborating we learn from each other

900

00:40:31,440 --> 00:40:28,839

and we learn about what is the other

901
00:40:33,289 --> 00:40:31,450
person up to but by saying no I don't

902
00:40:35,490 --> 00:40:33,299
want to work with you well then you just

903
00:40:38,279 --> 00:40:35,500
don't know what they're working on and

904
00:40:40,319 --> 00:40:38,289
then you won't be able you will make up

905
00:40:42,630 --> 00:40:40,329
your own story and we usually the

906
00:40:44,640 --> 00:40:42,640
stories we make are horrible they're not

907
00:40:46,529 --> 00:40:44,650
good but if you're there and you're you

908
00:40:49,589 --> 00:40:46,539
are allowed to actually go to a Chinese

909
00:40:51,420 --> 00:40:49,599
Space Station and be there and see what

910
00:40:52,769 --> 00:40:51,430
the experience they're running why not

911
00:40:56,339 --> 00:40:52,779
what's wrong with that

912
00:41:00,630 --> 00:40:56,349
why not send the US astronaut to a

913
00:41:02,970 --> 00:41:00,640

Russian space station or why not have a

914

00:41:04,529 --> 00:41:02,980

Chinese astronaut come to an

915

00:41:06,720 --> 00:41:04,539

International Space Station so you

916

00:41:09,960 --> 00:41:06,730

believe we're invited to the Chinese

917

00:41:12,660 --> 00:41:09,970

space station I believe saying no yeah I

918

00:41:15,480 --> 00:41:12,670

bet you if we if not a lot of volunteer

919

00:41:18,210 --> 00:41:15,490

to be the US representative I would but

920

00:41:20,490 --> 00:41:18,220

I I'm sure there are other NASA

921

00:41:23,309 --> 00:41:20,500

professional NASA astronaut that would

922

00:41:25,710 --> 00:41:23,319

be happy to fly to a and and be part of

923

00:41:26,910 --> 00:41:25,720

a mission to a Chinese space station I

924

00:41:28,529 --> 00:41:26,920

would like you to go and check things

925

00:41:32,249 --> 00:41:28,539

out and report back let us know what

926
00:41:35,069 --> 00:41:32,259
they were to go and and I I promise you

927
00:41:37,529 --> 00:41:35,079
that I think it will result in more

928
00:41:38,970 --> 00:41:37,539
positive things and this whole

929
00:41:41,180 --> 00:41:38,980
fear-based

930
00:41:42,890 --> 00:41:41,190
you know competition yeah

931
00:41:45,109 --> 00:41:42,900
I try to be an idealist but in general

932
00:41:47,539 --> 00:41:45,119
I'm I'm a realist for the most part yeah

933
00:41:50,029 --> 00:41:47,549
and I see country the hopeful hopeful

934
00:41:52,490 --> 00:41:50,039
optimist countries racing for nuclear

935
00:41:55,640 --> 00:41:52,500
weapons all right you got North Korea

936
00:41:57,710 --> 00:41:55,650
and Iran and so on and in the same way

937
00:41:59,390 --> 00:41:57,720
if there was some way to have something

938
00:42:02,740 --> 00:41:59,400

in space that gives you some dominating

939

00:42:08,059 --> 00:42:02,750

position countries are gonna gravitate

940

00:42:08,990 --> 00:42:08,069

toward that not countries leaders in

941

00:42:11,569 --> 00:42:09,000

those countries

942

00:42:15,109 --> 00:42:11,579

egotistical leaders of countries because

943

00:42:19,490 --> 00:42:15,119

I don't care to have control over China

944

00:42:25,160 --> 00:42:19,500

as a citizen you wouldn't but someone

945

00:42:28,520 --> 00:42:25,170

who wants to have control you know yes

946

00:42:31,730 --> 00:42:28,530

so it's more of leadership's in each

947

00:42:34,010 --> 00:42:31,740

country's that want world dominance I

948

00:42:36,140 --> 00:42:34,020

know the same type of leaders such as

949

00:42:37,700 --> 00:42:36,150

say North Korea that want to do what

950

00:42:39,529 --> 00:42:37,710

they're doing here or gonna want to do

951
00:42:43,220 --> 00:42:39,539
it in space know do they have the

952
00:42:45,920 --> 00:42:43,230
capability now no but is it a danger to

953
00:42:48,019 --> 00:42:45,930
look out for in the future of course I

954
00:42:50,000 --> 00:42:48,029
mean same thing with nuclear weapon can

955
00:42:52,250 --> 00:42:50,010
people build nuclear weapons yes

956
00:42:54,920 --> 00:42:52,260
technology for doing all of this is out

957
00:42:57,460 --> 00:42:54,930
there it's not secret building Rockets

958
00:43:00,349 --> 00:42:57,470
and going to space is not a secret

959
00:43:02,120 --> 00:43:00,359
building nuclear weapon there is a thing

960
00:43:04,339 --> 00:43:02,130
where we all have to be earthlings

961
00:43:06,230 --> 00:43:04,349
together and for instance possibly

962
00:43:08,960 --> 00:43:06,240
colonize Mars to create a new home for

963
00:43:11,029 --> 00:43:08,970

humans on the next asteroid yes right we

964

00:43:15,260 --> 00:43:11,039

can talk about that a minute but you

965

00:43:17,180 --> 00:43:15,270

also have the defense element of at the

966

00:43:19,130 --> 00:43:17,190

National Defense where you know you have

967

00:43:21,970 --> 00:43:19,140

to be cognizant of that risk I mean

968

00:43:24,710 --> 00:43:21,980

America has to be alert to the fact that

969

00:43:26,390 --> 00:43:24,720

if China or North Korea or someone

970

00:43:28,220 --> 00:43:26,400

created some dominating position in

971

00:43:31,039 --> 00:43:28,230

space that that ultimately could be very

972

00:43:34,819 --> 00:43:31,049

adverse to our interests on earth you

973

00:43:37,069 --> 00:43:34,829

can think about defense in terms of I

974

00:43:39,529 --> 00:43:37,079

need to build a weapon because the other

975

00:43:42,170 --> 00:43:39,539

guy is building a weapon or you can say

976

00:43:47,240 --> 00:43:42,180

let's sit at a table and talk so neither

977

00:43:50,539 --> 00:43:47,250

one of us builds a weapon just you know

978

00:43:53,180 --> 00:43:50,549

let's learn from the nuclear program the

979

00:43:54,290 --> 00:43:53,190

fact that we started building nuclear

980

00:43:56,360 --> 00:43:54,300

weapons

981

00:43:58,760 --> 00:43:56,370

that now everyone can build it and now

982

00:44:00,320 --> 00:43:58,770

we're all concerned about countries that

983

00:44:02,810 --> 00:44:00,330

we don't want to have nuclear weapon

984

00:44:05,390 --> 00:44:02,820

building one and really you know is

985

00:44:06,130 --> 00:44:05,400

there a way for us to prevent it no not

986

00:44:10,220 --> 00:44:06,140

really

987

00:44:11,720 --> 00:44:10,230

so the best thing is prevention you know

988

00:44:14,810 --> 00:44:11,730

so we need to work together there need

989

00:44:17,030 --> 00:44:14,820

to be space treaties yeah and there are

990

00:44:19,550 --> 00:44:17,040

space treaties for peaceful use of space

991

00:44:21,740 --> 00:44:19,560

so we need to honor those treaties and

992

00:44:24,050 --> 00:44:21,750

not walk away from them okay now let's

993

00:44:27,230 --> 00:44:24,060

talk about the privatization of space

994

00:44:29,030 --> 00:44:27,240

because on the one hand it's probably a

995

00:44:31,760 --> 00:44:29,040

fabulous thing I've read something that

996

00:44:34,220 --> 00:44:31,770

is it the Falcon rocket the SpaceX did

997

00:44:36,320 --> 00:44:34,230

that it cost ten percent of what it

998

00:44:39,290 --> 00:44:36,330

would cost NASA to build that based on

999

00:44:41,390 --> 00:44:39,300

NASA's own estimates so that's pretty

1000

00:44:43,610 --> 00:44:41,400

incredible intends to tell you this is a

1001

00:44:47,600 --> 00:44:43,620

direction we need to go in absolutely

1002

00:44:50,510 --> 00:44:47,610

and I think the we're private companies

1003

00:44:52,760 --> 00:44:50,520

can add value is when things are not

1004

00:44:54,410 --> 00:44:52,770

experimental anymore where there is a

1005

00:44:56,630 --> 00:44:54,420

business case to be made when there's

1006

00:44:58,390 --> 00:44:56,640

efficiencies to be gained businesses

1007

00:45:01,550 --> 00:44:58,400

tend to do better because you know

1008

00:45:04,400 --> 00:45:01,560

there's no necessarily a lot of new

1009

00:45:06,710 --> 00:45:04,410

technologies that come out of you know

1010

00:45:08,660 --> 00:45:06,720

continuously building rockets and going

1011

00:45:10,670 --> 00:45:08,670

to space so it's a repeatable thing so

1012

00:45:13,670 --> 00:45:10,680

companies can come up with a better way

1013

00:45:16,760 --> 00:45:13,680

of doing that and NASA is a research

1014

00:45:19,130 --> 00:45:16,770

organization so what they can do is

1015

00:45:23,060 --> 00:45:19,140

focus their resources and effort on

1016

00:45:26,090 --> 00:45:23,070

where businesses don't have a reason to

1017

00:45:29,750 --> 00:45:26,100

go so when it's about a robotic landing

1018

00:45:32,000 --> 00:45:29,760

on other planets or their moons to learn

1019

00:45:34,130 --> 00:45:32,010

about and exploring the rest of our

1020

00:45:37,300 --> 00:45:34,140

galaxy that's where I think NASA

1021

00:45:39,890 --> 00:45:37,310

resources will come to great value

1022

00:45:42,860 --> 00:45:39,900

building rockets to go to space that

1023

00:45:45,680 --> 00:45:42,870

companies like SpaceX chlorogene build

1024

00:45:47,630 --> 00:45:45,690

better faster cheaper safer rockets to

1025

00:45:49,610 --> 00:45:47,640

carry more people yes so let's talk

1026
00:45:50,870 --> 00:45:49,620
about what are the business reasons to

1027
00:45:53,150 --> 00:45:50,880
go into space you got launching

1028
00:45:56,360 --> 00:45:53,160
satellites obviously and you've got

1029
00:45:58,190 --> 00:45:56,370
space tourism are there other business

1030
00:46:02,540 --> 00:45:58,200
reasons for companies to want to go into

1031
00:46:04,850 --> 00:46:02,550
space so I actually look at it like the

1032
00:46:06,240 --> 00:46:04,860
early days of internet being a tech

1033
00:46:08,820 --> 00:46:06,250
entrepreneur

1034
00:46:11,400 --> 00:46:08,830
and being around for a long time I

1035
00:46:13,560 --> 00:46:11,410
remember days where Internet was only

1036
00:46:16,500 --> 00:46:13,570
used by governments and large

1037
00:46:18,480 --> 00:46:16,510
universities it was difficult to get

1038
00:46:20,910 --> 00:46:18,490

access to difficult to use

1039

00:46:23,730 --> 00:46:20,920

so only very limited number of people

1040

00:46:26,760 --> 00:46:23,740

had access to it once we had companies

1041

00:46:29,970 --> 00:46:26,770

like Netscape creative easier way of

1042

00:46:32,970 --> 00:46:29,980

interacting with people and Internet was

1043

00:46:35,010 --> 00:46:32,980

opened up to a large audience then

1044

00:46:38,700 --> 00:46:35,020

people came up with all sorts of

1045

00:46:40,950 --> 00:46:38,710

creative ways of using Internet and it

1046

00:46:44,099 --> 00:46:40,960

started evolving and becoming what we

1047

00:46:46,740 --> 00:46:44,109

cannot live without today so I think

1048

00:46:48,930 --> 00:46:46,750

space can be the same thing if we open

1049

00:46:51,570 --> 00:46:48,940

up the access to space by reducing the

1050

00:46:53,880 --> 00:46:51,580

cost and opening it up people will come

1051
00:46:56,670 --> 00:46:53,890
up with creative way of using it some of

1052
00:46:59,520 --> 00:46:56,680
the things that I want to you know

1053
00:47:02,220 --> 00:46:59,530
challenge people with is we talk about

1054
00:47:03,990 --> 00:47:02,230
cloud computing for example what is

1055
00:47:06,690 --> 00:47:04,000
cloud computing it's basically these

1056
00:47:09,390 --> 00:47:06,700
massive data centers around the globe

1057
00:47:12,480 --> 00:47:09,400
where they're sucking tons of energy to

1058
00:47:15,390 --> 00:47:12,490
cool down and to power these massive

1059
00:47:17,700 --> 00:47:15,400
computer systems why can't we put this

1060
00:47:20,690 --> 00:47:17,710
in orbit if we have this massive storage

1061
00:47:22,740 --> 00:47:20,700
errors its space is very cold we have

1062
00:47:25,710 --> 00:47:22,750
abundant

1063
00:47:27,810 --> 00:47:25,720

solar energy with solar panels that can

1064

00:47:31,050 --> 00:47:27,820

be up there let's put the cloud above

1065

00:47:34,020 --> 00:47:31,060

the cloud and access it that way there

1066

00:47:37,079 --> 00:47:34,030

are tons of research again in the

1067

00:47:39,410 --> 00:47:37,089

medical area in new material sciences

1068

00:47:42,300 --> 00:47:39,420

manufacturing that can be moved to space

1069

00:47:44,730 --> 00:47:42,310

so we can actually reduce the burden on

1070

00:47:46,380 --> 00:47:44,740

the resources on our planet by moving

1071

00:47:50,310 --> 00:47:46,390

certain things that do not have

1072

00:47:53,550 --> 00:47:50,320

real-time access needs to to orbit and

1073

00:47:55,859 --> 00:47:53,560

and help our environment and our planet

1074

00:47:59,310 --> 00:47:55,869

and also create a more efficient way of

1075

00:48:01,770 --> 00:47:59,320

using them so is the is it fair to say

1076
00:48:04,339 --> 00:48:01,780
the u.s. is way ahead of other countries

1077
00:48:07,349 --> 00:48:04,349
as far as private enterprise in space I

1078
00:48:10,680 --> 00:48:07,359
believe so I I said they're fair safe

1079
00:48:14,130 --> 00:48:10,690
and is most of that in partnership with

1080
00:48:17,579 --> 00:48:14,140
NASA yes so the fact that and that's

1081
00:48:19,440 --> 00:48:17,589
where I credit XPrize when we started

1082
00:48:23,039 --> 00:48:19,450
with the price that we

1083
00:48:25,380 --> 00:48:23,049
behind the Ansari X PRIZE the notion of

1084
00:48:27,690 --> 00:48:25,390
any private company doing anything in

1085
00:48:31,470 --> 00:48:27,700
space was completely unknown and unheard

1086
00:48:33,359 --> 00:48:31,480
of one of the major attributes of XPrize

1087
00:48:35,940 --> 00:48:33,369
the Ansari X PRIZE to the whole

1088
00:48:39,270 --> 00:48:35,950

privatization of space was that the work

1089

00:48:42,240 --> 00:48:39,280

we did with FAA and different government

1090

00:48:44,160 --> 00:48:42,250

agencies and policy makers to educate

1091

00:48:47,730 --> 00:48:44,170

them about the benefits of having

1092

00:48:50,130 --> 00:48:47,740

private industries involved and because

1093

00:48:52,620 --> 00:48:50,140

of the work over the 10 years new

1094

00:48:55,079 --> 00:48:52,630

policies were made actually a new

1095

00:48:57,329 --> 00:48:55,089

division in FAA was formed to deal with

1096

00:49:00,270 --> 00:48:57,339

so technically it wasn't even legal

1097

00:49:01,680 --> 00:49:00,280

before no it wasn't legal so a private

1098

00:49:03,950 --> 00:49:01,690

citizen couldn't shoot himself up in

1099

00:49:07,260 --> 00:49:03,960

this bill we had to actually get very

1100

00:49:09,630 --> 00:49:07,270

special permission and head of FAA had

1101
00:49:11,730 --> 00:49:09,640
to come visit the company to even allow

1102
00:49:13,530 --> 00:49:11,740
the launch to happen to win the prize

1103
00:49:17,309 --> 00:49:13,540
when people couldn't even do test

1104
00:49:19,650 --> 00:49:17,319
flights like that so it was a lot of

1105
00:49:21,630 --> 00:49:19,660
work that went into creating the

1106
00:49:24,569 --> 00:49:21,640
environment for this industry to be

1107
00:49:26,220 --> 00:49:24,579
created and that's why u.s. is ahead of

1108
00:49:27,960 --> 00:49:26,230
everywhere else because this type of

1109
00:49:30,990 --> 00:49:27,970
change happened here when I was curious

1110
00:49:34,049 --> 00:49:31,000
about that because you put up the money

1111
00:49:36,270 --> 00:49:34,059
the Ansari prize 10 million dollars to

1112
00:49:39,390 --> 00:49:36,280
create a race for the first company to

1113
00:49:42,410 --> 00:49:39,400

be able to send a rocket into space and

1114

00:49:45,510 --> 00:49:42,420

be able to return and go twice in what

1115

00:49:47,910 --> 00:49:45,520

twice in two weeks and created this race

1116

00:49:50,250 --> 00:49:47,920

yes to that similar to Charles Lindbergh

1117

00:49:52,920 --> 00:49:50,260

yes it was chasing a similar price

1118

00:49:55,349 --> 00:49:52,930

across the Atlantic Ocean so prior to

1119

00:49:57,599 --> 00:49:55,359

the prize what was going on for instance

1120

00:49:59,839 --> 00:49:57,609

Elon Musk was he already up to something

1121

00:50:03,720 --> 00:49:59,849

prior to the prize no I mean the prize

1122

00:50:05,700 --> 00:50:03,730

instigated this whole idea of maybe we

1123

00:50:06,809 --> 00:50:05,710

can be involved with this me I mean it

1124

00:50:08,730 --> 00:50:06,819

really is and I want you to pat yourself

1125

00:50:11,099 --> 00:50:08,740

on the back if it's probably it really

1126

00:50:12,839 --> 00:50:11,109

was the instigator to privatization of

1127

00:50:15,030 --> 00:50:12,849

space absolutely and I think the Pat is

1128

00:50:17,609 --> 00:50:15,040

not just to my back but Peter Diamandis

1129

00:50:20,700 --> 00:50:17,619

who was the founder and the person

1130

00:50:23,670 --> 00:50:20,710

behind the idea of the prize who started

1131

00:50:26,789 --> 00:50:23,680

the XPrize foundation and and then he

1132

00:50:29,190 --> 00:50:26,799

found me and my family to back him on

1133

00:50:31,500 --> 00:50:29,200

this and and I was already on this path

1134

00:50:32,790 --> 00:50:31,510

of finding my way to space and who are

1135

00:50:35,490 --> 00:50:32,800

path crossed just at the right moment

1136

00:50:37,350 --> 00:50:35,500

yes in fact I read something where you

1137

00:50:38,850 --> 00:50:37,360

said that if you have a dream talk about

1138

00:50:41,130 --> 00:50:38,860

it all worth because it's more likely to

1139

00:50:44,700 --> 00:50:41,140

come true tell me how that played into

1140

00:50:46,830 --> 00:50:44,710

this I I think it's important so the way

1141

00:50:49,560 --> 00:50:46,840

Peter found out about my passion is like

1142

00:50:53,610 --> 00:50:49,570

anytime I did an interview I told people

1143

00:50:57,690 --> 00:50:53,620

that my passion is to go to do with the

1144

00:50:59,970 --> 00:50:57,700

job but with my job and actually I might

1145

00:51:01,980 --> 00:50:59,980

need to take a long vacation exactly

1146

00:51:04,980 --> 00:51:01,990

people actually looked at me like I was

1147

00:51:08,130 --> 00:51:04,990

crazy like who is this crazy girl who

1148

00:51:09,720 --> 00:51:08,140

wants to go to his face but in most

1149

00:51:12,600 --> 00:51:09,730

cases people just didn't take me

1150

00:51:14,460 --> 00:51:12,610

seriously but I was serious about it so

1151

00:51:15,300 --> 00:51:14,470

I talked about it all the time read

1152

00:51:17,400 --> 00:51:15,310

about it

1153

00:51:19,920 --> 00:51:17,410

I tried to talk to people who knew

1154

00:51:21,570 --> 00:51:19,930

something about it so that's how you

1155

00:51:23,310 --> 00:51:21,580

make your dream come true by just

1156

00:51:25,710 --> 00:51:23,320

keeping it in your head it won't go

1157

00:51:27,780 --> 00:51:25,720

anywhere so if you have a dream and you

1158

00:51:30,630 --> 00:51:27,790

want to do something about it the first

1159

00:51:32,070 --> 00:51:30,640

step is to talk about it so what about

1160

00:51:34,710 --> 00:51:32,080

Elon Musk though because my understand

1161

00:51:37,110 --> 00:51:34,720

is he was not part of the competition he

1162

00:51:39,210 --> 00:51:37,120

was not part of the competition but we

1163

00:51:42,000 --> 00:51:39,220

were actually in conversation with him

1164

00:51:45,510 --> 00:51:42,010

because we wanted him to also be part of

1165

00:51:47,280 --> 00:51:45,520

the sponsorship program and sponsor the

1166

00:51:50,250 --> 00:51:47,290

prize and being engaged and involved

1167

00:51:51,930 --> 00:51:50,260

with it he always had a passion just

1168

00:51:54,990 --> 00:51:51,940

like me he had the passion to go to Mars

1169

00:51:58,140 --> 00:51:55,000

so that's the reason right now his focus

1170

00:52:00,690 --> 00:51:58,150

is on Mars he even started SpaceX with

1171

00:52:02,820 --> 00:52:00,700

the vision long-term vision of going to

1172

00:52:04,500 --> 00:52:02,830

personally want to go to Mars a person

1173

00:52:07,140 --> 00:52:04,510

he wants to go colonize Mars

1174

00:52:09,570 --> 00:52:07,150

I mean colonizing Mars is his final

1175

00:52:13,350 --> 00:52:09,580

mission oh so it's gonna be you and

1176

00:52:19,200 --> 00:52:13,360

Ilana I don't know if I want to be

1177

00:52:21,540 --> 00:52:19,210

stranded with a guy but no I think we

1178

00:52:23,550 --> 00:52:21,550

both have a passion for opening up space

1179

00:52:26,330 --> 00:52:23,560

to everyone and we feel that it's

1180

00:52:29,370 --> 00:52:26,340

important for the future of humanity

1181

00:52:32,190 --> 00:52:29,380

yeah let's talk about that

1182

00:52:35,130 --> 00:52:32,200

because I guess the risk is that another

1183

00:52:38,310 --> 00:52:35,140

asteroid hits and just like the

1184

00:52:39,720 --> 00:52:38,320

dinosaurs we would be extinct is that

1185

00:52:42,330 --> 00:52:39,730

the reason to colonize Mars

1186

00:52:44,550 --> 00:52:42,340

that's one reason or we have

1187

00:52:47,040 --> 00:52:44,560

you know you talked about space war you

1188

00:52:49,560 --> 00:52:47,050

know if we have a space war I think

1189

00:52:52,980 --> 00:52:49,570

there will be or new nuclear world I

1190

00:52:55,140 --> 00:52:52,990

think either an external source or you

1191

00:52:57,960 --> 00:52:55,150

know something we do to ourselves may

1192

00:52:59,550 --> 00:52:57,970

render our planet inhabitable if the

1193

00:53:01,850 --> 00:52:59,560

dinosaurs had just thought about that

1194

00:53:04,800 --> 00:53:01,860

they'd be on Mars right now hanging out

1195

00:53:06,450 --> 00:53:04,810

haven't they were actually a pretty

1196

00:53:09,260 --> 00:53:06,460

smart species yeah

1197

00:53:12,390 --> 00:53:09,270

they didn't dream about Mars uh probably

1198

00:53:14,670 --> 00:53:12,400

so but but really that's the reason to

1199

00:53:18,660 --> 00:53:14,680

colonize Mars is to protect the human

1200

00:53:21,450 --> 00:53:18,670

race you know it's one reason just think

I believe we cannot even get to Mars

1214

00:54:02,400 --> 00:54:00,550

without colonizing moon first because we

1215

00:54:05,700 --> 00:54:02,410

need to be somewhere close where we can

1216

00:54:08,400 --> 00:54:05,710

experiment and learn getting to Mars it

1217

00:54:10,440 --> 00:54:08,410

takes a long time it's a lot harder we

1218

00:54:12,900 --> 00:54:10,450

haven't even figured out the impact of

1219

00:54:17,280 --> 00:54:12,910

this long-duration flight on our bodies

1220

00:54:18,810 --> 00:54:17,290

whether we will survive it or not to be

1221

00:54:22,470 --> 00:54:18,820

honest with you long term I think our

1222

00:54:24,900 --> 00:54:22,480

bodies will evolve the other option is

1223

00:54:30,130 --> 00:54:24,910

you look at how technology is evolving

1224

00:54:32,510 --> 00:54:30,140

and how robotics and genetic

1225

00:54:35,120 --> 00:54:32,520

modification and enhancement is becoming

1226

00:54:38,120 --> 00:54:35,130

part of everyday life so I think maybe

1227

00:54:40,400 --> 00:54:38,130

once we are ready to actually settle on

1228

00:54:42,950 --> 00:54:40,410

Mars we won't look like what we look

1229

00:54:45,980 --> 00:54:42,960

like right now I mean our bodies could

1230

00:54:47,540 --> 00:54:45,990

be enhanced before going and creating it

1231

00:54:49,760 --> 00:54:47,550

settlement what about just conditions

1232

00:54:57,080 --> 00:54:49,770

for living what's better the Moon or

1233

00:54:58,430 --> 00:54:57,090

Mars I think well we have water on the

1234

00:55:00,710 --> 00:54:58,440

moon

1235

00:55:03,290 --> 00:55:00,720

I think we've discovered now potentially

1236

00:55:06,140 --> 00:55:03,300

water on Mars so water is the most

1237

00:55:07,910 --> 00:55:06,150

important ingredient so I don't think

1238

00:55:12,350 --> 00:55:07,920

there's a huge difference

1239

00:55:15,590 --> 00:55:12,360

neither have an atmosphere I don't know

1240

00:55:19,270 --> 00:55:15,600

if there's a big advantage of one over

1241

00:55:22,280 --> 00:55:19,280

the other except that moon is closer and

1242

00:55:24,380 --> 00:55:22,290

psychologically you know human beings as

1243

00:55:25,160 --> 00:55:24,390

long as they can see Earth even if it's

1244

00:55:27,560 --> 00:55:25,170

like this

1245

00:55:29,420 --> 00:55:27,570

tiny little thing in the background you

1246

00:55:31,270 --> 00:55:29,430

feel like it's there it gives you some

1247

00:55:35,300 --> 00:55:31,280

peace of mind so psychologically

1248

00:55:36,770 --> 00:55:35,310

probably moon is easier than Mars that's

1249

00:55:39,650 --> 00:55:36,780

why I think you know we need to train

1250

00:55:41,420 --> 00:55:39,660

ourselves a lot on the moon before we go

1251
00:55:43,940 --> 00:55:41,430
to Mars so any trips that would be done

1252
00:55:45,770 --> 00:55:43,950
privately say to the moon or to Mars

1253
00:55:47,660 --> 00:55:45,780
where those have to be essentially in

1254
00:55:52,700 --> 00:55:47,670
conjunction with a government in this

1255
00:55:55,580 --> 00:55:52,710
case the US government does it have to

1256
00:55:58,940 --> 00:55:55,590
be it's a good question I don't think it

1257
00:56:01,610 --> 00:55:58,950
has to put there there's no law

1258
00:56:03,380 --> 00:56:01,620
basically it's regulation for Mars or

1259
00:56:05,810 --> 00:56:03,390
well but you're saying that you had to

1260
00:56:09,380 --> 00:56:05,820
get FAA approval to go into space to

1261
00:56:11,870 --> 00:56:09,390
launch right so Africa didn't deny your

1262
00:56:15,050 --> 00:56:11,880
launch yes that could happen but if you

1263
00:56:16,760 --> 00:56:15,060

meet the launch requirement I don't

1264

00:56:19,040 --> 00:56:16,770

think there's anything that stops you

1265

00:56:22,400 --> 00:56:19,050

from a private company perspective to

1266

00:56:25,190 --> 00:56:22,410

land on the moon or on Mars the question

1267

00:56:28,670 --> 00:56:25,200

is once you land there can you claim and

1268

00:56:29,960 --> 00:56:28,680

say I own Mars yeah I mean Yahoo is

1269

00:56:32,030 --> 00:56:29,970

colonizing it is it

1270

00:56:33,680 --> 00:56:32,040

Elon Musk and SpaceX or is it the United

1271

00:56:35,540 --> 00:56:33,690

States dad those are really good

1272

00:56:37,670 --> 00:56:35,550

question because that's how why there's

1273

00:56:39,920 --> 00:56:37,680

a whole new field of space law that's

1274

00:56:41,829 --> 00:56:39,930

being developed and growing right now

1275

00:56:44,259 --> 00:56:41,839

because there is no regular

1276

00:56:47,949 --> 00:56:44,269

that governs what happens when someone

1277

00:56:50,559 --> 00:56:47,959

lands on on Mars or on the moon mm-hmm

1278

00:56:52,059 --> 00:56:50,569

so we do have a little bit of a risk of

1279

00:56:55,299 --> 00:56:52,069

one of my other favorite movies

1280

00:56:57,999 --> 00:56:55,309

Moonraker means bond drago if you

1281

00:57:00,160 --> 00:56:58,009

remember him it was up to no good flying

1282

00:57:03,429 --> 00:57:00,170

space holes around in space do we have

1283

00:57:04,900 --> 00:57:03,439

to fear a Drago type person not Elon I'm

1284

00:57:10,769 --> 00:57:04,910

talking about he's cool but yeah you

1285

00:57:13,900 --> 00:57:10,779

know the evil Elon I hope not I mean

1286

00:57:18,339 --> 00:57:13,910

humans are capable of the most wonderful

1287

00:57:21,789 --> 00:57:18,349

things and also the most horrible things

1288

00:57:26,759 --> 00:57:21,799

and I think the number of people who do

1289

00:57:29,499 --> 00:57:26,769

great things and are compassionate and

1290

00:57:32,499 --> 00:57:29,509

peace-loving are a lot more than the

1291

00:57:34,839 --> 00:57:32,509

evil ones but unfortunately one evil

1292

00:57:38,920 --> 00:57:34,849

person can do a lot of damage so I'm

1293

00:57:41,349 --> 00:57:38,930

hoping that they will get access to to

1294

00:57:44,049 --> 00:57:41,359

space or a space program or a space

1295

00:57:45,670 --> 00:57:44,059

weapon okay let me just finish by

1296

00:57:47,620 --> 00:57:45,680

talking just a little bit about XPrize

1297

00:57:49,689 --> 00:57:47,630

because you're now the CEO of XPrize you

1298

00:57:52,630 --> 00:57:49,699

were the first one to put up the the

1299

00:57:54,969 --> 00:57:52,640

first prize and now are the CEO and

1300

00:57:56,229 --> 00:57:54,979

there's you have a number of prizes now

1301
00:57:58,029 --> 00:57:56,239
that are out there available

1302
00:58:01,120 --> 00:57:58,039
approximately how many the people are

1303
00:58:04,719 --> 00:58:01,130
chasing yeah but I think eight prizes

1304
00:58:05,829 --> 00:58:04,729
now and highlight what your favorite one

1305
00:58:10,329 --> 00:58:05,839
right now the one you're most excited

1306
00:58:12,729 --> 00:58:10,339
about oh there's so many so we have one

1307
00:58:14,650 --> 00:58:12,739
that I was personally involved with a

1308
00:58:17,559 --> 00:58:14,660
little bit which is exciting which is

1309
00:58:20,049 --> 00:58:17,569
called the A&A avatar XPrize I'm a

1310
00:58:23,199 --> 00:58:20,059
techie so the techie ones are very

1311
00:58:28,479 --> 00:58:23,209
compelling to me so this is basically a

1312
00:58:32,140 --> 00:58:28,489
an avatar where a human can control and

1313
00:58:35,049 --> 00:58:32,150

feel like they are you know through this

1314

00:58:39,669 --> 00:58:35,059

avatar and another location through

1315

00:58:42,989 --> 00:58:39,679

their thoughts through thoughts you will

1316

00:58:46,509 --> 00:58:42,999

be connected to a sort of a robotic

1317

00:58:48,789 --> 00:58:46,519

humanoid and another location where you

1318

00:58:52,689 --> 00:58:48,799

can sense and control and see through

1319

00:58:54,990 --> 00:58:52,699

that humanoid robot so you're not taught

1320

00:58:57,750 --> 00:58:55,000

controlling another section

1321

00:58:59,490 --> 00:58:57,760

being but it's a device it's but sorry

1322

00:59:01,830 --> 00:58:59,500

are you thought controlling the robot

1323

00:59:05,750 --> 00:59:01,840

yes you're taught and your actions yeah

1324

00:59:11,130 --> 00:59:05,760

so you're physically and mentally true

1325

00:59:15,630 --> 00:59:11,140

arv are you know specific controls

1326
00:59:17,130 --> 00:59:15,640
you're controlling a humanoid robot and

1327
00:59:18,990 --> 00:59:17,140
I know the ultimate goal of all your

1328
00:59:21,960 --> 00:59:19,000
prizes is something that is going to

1329
00:59:25,170 --> 00:59:21,970
help the globe what is it that you're

1330
00:59:27,570 --> 00:59:25,180
hoping so this is this can be used in

1331
00:59:31,950 --> 00:59:27,580
multiple ways for example there are

1332
00:59:34,280 --> 00:59:31,960
extreme situations where it's dangerous

1333
00:59:37,650 --> 00:59:34,290
for human to actually enter for example

1334
00:59:40,260 --> 00:59:37,660
you know if there is a nuclear disaster

1335
00:59:42,720 --> 00:59:40,270
and there is a need for rescue mission

1336
00:59:46,530 --> 00:59:42,730
or rescue operation or repair operation

1337
00:59:49,050 --> 00:59:46,540
someone who has to have special skills

1338
00:59:52,560 --> 00:59:49,060

can actually to through this humanoid

1339

00:59:55,560 --> 00:59:52,570

robot specifically do tasks that are

1340

00:59:56,910 --> 00:59:55,570

very delicate and still accomplish the

1341

01:00:00,180 --> 00:59:56,920

same thing without in there injuring

1342

01:00:02,610 --> 01:00:00,190

themselves or one person can for example

1343

01:00:06,420 --> 01:00:02,620

a specialized surgeon can do multiple

1344

01:00:08,250 --> 01:00:06,430

surgeries through these robots in

1345

01:00:10,770 --> 01:00:08,260

different parts of the world remote

1346

01:00:14,070 --> 01:00:10,780

parts of the world and go from one

1347

01:00:16,110 --> 01:00:14,080

corner of the planet to another to all

1348

01:00:17,850 --> 01:00:16,120

these means of these how much time do

1349

01:00:19,410 --> 01:00:17,860

they have to come up with that because I

1350

01:00:24,240 --> 01:00:19,420

know each prize has an expiration right

1351
01:00:26,610 --> 01:00:24,250
yes so this is a 5-year prize so we are

1352
01:00:29,640 --> 01:00:26,620
just coming up to early registration

1353
01:00:32,100 --> 01:00:29,650
close and the registration will

1354
01:00:34,290 --> 01:00:32,110
completely close end of the year so

1355
01:00:37,020 --> 01:00:34,300
we're recruiting teams right now and

1356
01:00:41,730 --> 01:00:37,030
it's very exciting we have an AI for

1357
01:00:44,190 --> 01:00:41,740
good prize that we had 30 teams

1358
01:00:47,130 --> 01:00:44,200
finalists that were just announced and

1359
01:00:49,610 --> 01:00:47,140
we're this is using machine learning and

1360
01:00:51,780 --> 01:00:49,620
artificial intelligence to solve

1361
01:00:54,270 --> 01:00:51,790
problems that will bring benefit to

1362
01:00:56,870 --> 01:00:54,280
humanity so we have people with ideas in

1363
01:00:59,280 --> 01:00:56,880

energy in environment in healthcare

1364

01:01:01,470 --> 01:00:59,290

using machine learning to solve those

1365

01:01:03,450 --> 01:01:01,480

types of problems we have a global

1366

01:01:06,870 --> 01:01:03,460

learning XPrize which is also very

1367

01:01:07,780 --> 01:01:06,880

exciting and we have finalists five

1368

01:01:10,330 --> 01:01:07,790

finalists I

1369

01:01:12,400 --> 01:01:10,340

to find in villages in Tanzania teaching

1370

01:01:15,730 --> 01:01:12,410

kids through a mobile device to read

1371

01:01:18,010 --> 01:01:15,740

write and basic arithmetic from ground

1372

01:01:22,620 --> 01:01:18,020

zero without any teachers so that will

1373

01:01:27,400 --> 01:01:22,630

revolutionize you know learning without

1374

01:01:29,560 --> 01:01:27,410

without teachers probably a huge batch

1375

01:01:31,720 --> 01:01:29,570

of potential prizes that you guys are

1376

01:01:35,800 --> 01:01:31,730

considering absolutely we have probably

1377

01:01:38,110 --> 01:01:35,810

another 20-30 ideas in the works and you

1378

01:01:41,170 --> 01:01:38,120

know any of those yours in there a

1379

01:01:44,170 --> 01:01:41,180

little pet I can't talk about that I

1380

01:01:48,370 --> 01:01:44,180

can't talk about our upcoming prizes but

1381

01:01:50,740 --> 01:01:48,380

I tell you I I still love space X prizes

1382

01:01:53,650 --> 01:01:50,750

and hope that we'll have new prizes and

1383

01:01:57,990 --> 01:01:53,660

related to space exploration and we've

1384

01:02:02,940 --> 01:01:58,000

been talking about you know Mars and

1385

01:02:05,200 --> 01:02:02,950

moon and colonization so I believe that

1386

01:02:07,750 --> 01:02:05,210

you know we've been going to space

1387

01:02:10,420 --> 01:02:07,760

through Rockets ever since we started

1388

01:02:12,780 --> 01:02:10,430

the space program so I'm hoping that

1389

01:02:15,460 --> 01:02:12,790

maybe someone will revolutionize

1390

01:02:18,490 --> 01:02:15,470

propulsion system so the way we would go

1391

01:02:21,280 --> 01:02:18,500

to space will change completely and we

1392

01:02:23,560 --> 01:02:21,290

would be able to zoom to distant parts

1393

01:02:26,170 --> 01:02:23,570

of the galaxy faster so how about black

1394

01:02:29,050 --> 01:02:26,180

hole travel won't you throw that why not

1395

01:02:31,510 --> 01:02:29,060

why not I mean I'm a Trekkie so I'm

1396

01:02:33,310 --> 01:02:31,520

looking for the warp drive to be able to

1397

01:02:35,050 --> 01:02:33,320

travel but isn't it fun just to dream

1398

01:02:37,330 --> 01:02:35,060

like that as far as coming up with these

1399

01:02:39,580 --> 01:02:37,340

prizes because you know what people are

1400

01:02:41,110 --> 01:02:39,590

going to go after it have a party and if

1401

01:02:44,830 --> 01:02:41,120

they don't get it they don't get it but

1402

01:02:46,600 --> 01:02:44,840

absolutely so we always so we don't want

1403

01:02:49,180 --> 01:02:46,610

to have one of those prizes that we know

1404

01:02:51,520 --> 01:02:49,190

no one will want win so part of the time

1405

01:02:54,160 --> 01:02:51,530

we spend here is to make sure we add

1406

01:02:57,120 --> 01:02:54,170

that edge of audacious but achievable

1407

01:03:00,640 --> 01:02:57,130

which is a very hard balance to achieve

1408

01:03:02,890 --> 01:03:00,650

but it's important for us to pick prizes

1409

01:03:05,050 --> 01:03:02,900

where we think there is benefit that the

1410

01:03:07,420 --> 01:03:05,060

industry is not working on it because

1411

01:03:10,120 --> 01:03:07,430

they haven't either figured out why it's

1412

01:03:14,140 --> 01:03:10,130

important or they there's no incentive

1413

01:03:16,690 --> 01:03:14,150

there and find that edge where you know

1414

01:03:20,350 --> 01:03:16,700

you're going to push things technology's

1415

01:03:21,430 --> 01:03:20,360

significantly so it's an audacious goal

1416

01:03:22,930 --> 01:03:21,440

but it's still

1417

01:03:25,540 --> 01:03:22,940

Chifa bull so we don't want to break any

1418

01:03:26,680 --> 01:03:25,550

laws of physics yeah well I know you

1419

01:03:29,050 --> 01:03:26,690

have a flight to catch

1420

01:03:30,480 --> 01:03:29,060

unfortunately it's not to the moon it's

1421

01:03:34,390 --> 01:03:30,490

design Francisco

1422

01:03:35,740 --> 01:03:34,400

but one day you'll will have to end our

1423

01:03:39,460 --> 01:03:35,750

interview because you're off to the moon

1424

01:03:41,050 --> 01:03:39,470

we'll do a podcast on the new show thank